United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Idaho State Office
1387 South Vinnell Way
Boise, Idaho 83709-1657

Dear Reader:

Attached for your review is the Final Supplemental Environmental Impact Statement (SEIS) and Proposed Land Use Plan Amendments for Segments 8 and 9 of the Gateway West 500-kV Transmission Line Project (Project) for public lands managed by the Bureau of Land Management (BLM) in Idaho.

General Information

The BLM prepared this Final SEIS in consultation with cooperating agencies and in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, and Council on Environmental Quality (CEQ) and Department of the Interior (DOI) regulations implementing NEPA (40 CFR 1500-1508; 43 CFR 46) to analyze the effects of granting the Proponents (Rocky Mountain Power and Idaho Power) a right-of-way (ROW) to construct and operate Segments 8 and 9 of the Gateway West Transmission Line Project.

The Proponents have submitted applications for ROW grants to utilize portions of the National System of Public Lands in southern Idaho. The BLM Idaho State Office is the lead BLM office for the SEIS. The BLM will decide whether to approve, approve with modifications, or deny the ROWs for the Proposed Action or an Action Alternative for Segments 8 and 9 of the Project. The BLM's decision will be documented in a Record of Decision (ROD), which will be issued before any ROW grants are approved.

In accordance with 43 CFR 1610.0-5(b), the BLM must consider existing resource management plans (RMPs) and management framework plans (MFPs) in the decision on whether or not to issue ROW grants. Portions of Segments 8 and 9 of the proposed Gateway West project are not in conformance with BLM land use plans, and therefore, amendments to these plans are analyzed as part of the SEIS.

In addition, the BLM must ensure that to the extent the Project would cross the Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP), it would be compatible with the purposes for which Congress designated the SRBOP in Public Law 103-64 and with current policy for managing units of the National Conservation Lands.

Changes Between the Draft and Final SEISs

The SEIS assesses the environmental impacts of the Proposed Action and a range of other Route Alternatives, and includes analysis of a No Action Alternative. The Final SEIS responds to

comments received on the Draft SEIS, corrects and adds information obtained after preparation of the Draft SEIS, and identifies the BLM Preferred Alternative for the Project.

Key changes to the SEIS between Draft and Final include:

- A new section detailing resources, objects and values in the SRBOP and expected project effects
- Analysis of helicopter-assisted construction for Alternative 5 (a Draft SEIS co-Preferred Alternative)
- Additional visual resource surveys and impact analysis for the area around the Hagerman Fossil Beds National Monument
- Updated information on road construction and improvements needed for the action alternatives
- A fully developed framework for compensatory mitigation in the SRBOP
- A strategy to achieve an overall net conservation gain for Greater sage-grouse.

The Draft SEIS identified Alternatives 2 and 5 as Co-Preferred Alternatives. In the Final SEIS, the agency's Preferred Alternative is Alternative 5. The Environmentally Preferable Alternative is the No Action Alternative.

Land Use Plan Amendments and the BLM Protest Process

The BLM has identified five Proposed Plan Amendments located in three planning areas that are needed for the preferred routes to conform to approved RMPs/MFPs. Details on each Proposed Plan Amendment can be found in Sections 2.3.5 and 2.7 and Appendix F of this Final SEIS.

BLM planning regulations (43 CFR 1610.5-2) provide an opportunity for any person who participated in the planning process for the Gateway West SEIS and who has an interest that is or may be adversely affected by the proposed planning decisions to protest the proposed land use plan amendments. A person who meets the conditions and wishes to file a protest must file the protest within 30 days of the date that the Notice of Availability for the Final SEIS is published in the *Federal Register*.

Instructions for filing a protest with the BLM Director regarding the Proposed RMP/MFP Amendments may be found in the Notice of Availability published in the *Federal Register*, or online at http://www.blm.gov/wo/st/en/prog/planning/planning_overview/protest_resolution/filinginstructions.html. The attachment accompanying this letter contains a critical items checklist for preparing a valid protest.

Emailed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail postmarked by the close of the protest period. Under these conditions, the BLM will consider the email as an advance copy and will afford it full consideration. Please direct such advance notification emails to protest@blm.gov.

All protests must be in writing and mailed to one of the following addresses:

Regular Mail:
Director (210)
Attn: Protest Coordinator
P.O. Box 71383
Washington, D.C. 20024-1383

Overnight Mail:
Director (210)
Attn: Protest Coordinator
20 M Street SE, Room 2134LM
Washington, D.C. 20003

Before including your address, phone number, email address, or other personal identifying information with your comments or protest, be advised that your entire comment or protest, including your personal identifying information, may be made publicly available at any time. Although you may ask us in your submission to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

The BLM Director will render a prompt decision on each protest – either dismissing the protest, granting the protest based on the merits of the protest issues, or denying the protest based on the merits of the protest issues. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested.

The decision of the BLM Director shall be the final decision of the Department of the Interior on each protest. Responses to protest issues will be compiled and formalized in a Director's Protest Resolution Report made available along with the decisions.

Upon resolution of all land use plan protests, the BLM will issue a Record of Decision (ROD). The ROD will be available electronically to all who participated in the environmental analysis and planning process, on the BLM website, or by mail upon request.

For additional information, contact Heather Feeney, email hfeeney@blm.gov, phone (208) 373-4060, or visit the project website at: http://on.doi.gov/1sExPBP.

Thank you for your interest and participation in this process. We greatly value your involvement.

Sincerely,

Timothy M. Murphy
BLM Idaho State Director

Attachment: Plan Protest Critical Items Checklist (1 p.)

Resource Management Plan Protest
Critical Item Checklist

The following items *must* be included to constitute a valid protest whether using this optional format, or a narrative letter.
(43 CFR 1610.5-2)

Before including your address, phone number, e-mail address, or other personal identifying information in your **protest**, be advised that your entire **protest**--including your personal identifying information--may be made publicly available at any time. While you can ask us in your **protest** to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:
Address:
Phone Number: ( )

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:
Section:
Page:
(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, <u>OR an indication of the date the issue(s) were discussed for the record</u>.
Date(s):

A concise statement explaining why the State Director's decisions is believed to be wrong:

READER'S GUIDE

The Bureau of Land Management (BLM) has prepared this Final Supplemental Environmental Impact Statement (Final SEIS) for Segments 8 and 9 of the proposed Gateway West Transmission Line Project to supplement the analysis in the 2013 Final Environmental Impact Statement (Final EIS) for the original 10-segment Gateway West Project. It may help to have a copy of that document open as you read this Final SEIS. There is a link to the Final EIS on the Project Web site.

Given that the document consists of approximately 2,200 pages, we prepared this Reader's Guide to assist your review. It includes general guidance as well as a section-by-section summary and guide.

The public will have 30 days to review the Final SEIS and protest the proposed land use plan amendments, using the method outlined in the Dear Reader letter in the Final SEIS. You may consult Appendix F to review the language of each proposed plan amendment along with a brief analysis of the need for each amendment and its effects. The BLM will resolve all valid protests before issuing a Record of Decision for the SEIS.

We hope this Guide will help you find information more easily and have a complete understanding of measures incorporated into the proposal by Idaho Power Company and PacifiCorp (the Proponents), which are analyzed as Alternative 1, the agency-Preferred Alternative, and the Compensatory Mitigation Framework that the BLM will require as part of any Decision authorizing rights-of-way on public land for the Project.

GENERAL GUIDANCE

- The Final SEIS is divided into 7 chapters and 13 appendices. Chapter 3 is divided into an introduction and 24 separate resource sections.
- All sections of the Final SEIS can be downloaded from the Project Web site, http://on.doi.gov/1sExPBP. CD copies of the Final SEIS may be requested by emailing blm_id_gateway_west@blm.gov or calling 1-800-380-5828. You may also view copies of the Final SEIS at the reading rooms and libraries listed at the end of this Guide.
- The electronic copies of all sections are provided in PDF format, with bookmarks included to assist in navigating the text.
- Acronyms are defined with their first use in the document (not on their first use in each chapter or section). A master list of all acronyms used in the Final SEIS is included with the table of contents.
- A consolidated list of literature cited in the Final SEIS is located in Chapter 7.
- Appendix A contains large-scale maps of the alternatives.
- Appendix B-1 contains the Proponents' August 2014 supplement to their Plan of Development (POD), which has detailed design information on the transmission line and its ancillary facilities. The supplemental POD also contains a narrative description of how the Proponents propose to build the transmission line. You are encouraged to review this material if you are not familiar with transmission

line construction. Additional details are located in Appendix B to the 2013 Final EIS.

- Appendix B-2 contains the Proponents' description of methods for potential helicopter-assisted construction.
- Appendix C contains the Proponents' Draft Mitigation and Enhancement Portfolio, which is part of the Revised Proposed Action (Alternative 1).
- Appendix D contains tables comparing quantitative impacts to various resources across the various routes. Many readers find these tables useful as a quick reference for impact and route comparisons.
- Appendix E contains large format figures, including maps and photo simulations.
- Appendix F contains the Proposed Land Use Plan Amendments.
- Appendix G contains supporting information for visual resource amendments.
- Appendix H contains the Resource Advisory Council (RAC) Reports.
- Appendix I contains the SEIS Scoping Report.
- Appendix J contains a report on the inventory and impacts analysis for the National Historic Trails affected by Segments 8 and/or 9.
- Appendix K contains the BLM's Compensatory Mitigation Framework.
- Appendix L contains responses to comments on the Draft SEIS.
- Appendix M contains the environmental protection measures (EPMs) as originally presented in an attachment to the 2013 Record of Decision.

REVIEWING THE FINAL SEIS

At a minimum, we recommend reviewing the following parts of the Final SEIS:

- Chapter 1, Purpose and Need
- Chapter 2, Alternatives
- Appendix B, the Proponents' POD Supplement
- Appendix F, Proposed Land Use Plan Amendments
- Appendix K, the Compensatory Mitigation Framework

Chapter 1 presents (1) new information developed since the 2013 Final EIS was completed, (2) the Proponents' objectives for the Project and the Purpose and Need for the agency actions, (3) a list of issues identified during scoping and from other public comments that form the basis for the analysis and comparison of the routes and alternatives considered, across all resources, (4) the relationship of this SEIS to other plans, and (5) information on the organization of this SEIS.

Chapter 2 is the heart of the SEIS and summarizes the results of the detailed analysis found in Chapters 3 and 4. Alternatives analyzed in detail are presented in this chapter. The BLM's Preferred Alternative is disclosed in Section 2.3.4. For a narrative summary comparison of the alternatives and unavoidable adverse impacts, please see Sections 2.7 and 2.8, respectively.

If you plan to read **Chapter 3**, we recommend that you first read the introduction in Section 3.0. Please note that much of the analysis is reported in the "Effects Common

to All Action Alternatives" subsection and is not repeated in the comparison of impacts among alternatives in each resource section of Chapter 3.

As in the 2013 Final EIS, Chapter 3 combines both Affected Environment and Environmental Consequences (sometimes presented as separate chapters in other EIS documents). This allows an analysis by resource that starts with a description of the resource across the analysis area and then describes the consequences for that resource of authorizing the Revised Proposed Routes (Alternative 1) or other Alternatives.

We arranged the effects discussion in Chapter 3 by resource and then by route. This is followed by a summary of the effects of the seven alternatives, each alternative being a combination of one route from Segment 8 and one from Segment 9. If you are interested in the Project effects to a particular resource, say wildlife or water resources, across the entire Project, you would read Sections 3.10 or 3.16, respectively. If you are interested in all the Project effects in a certain segment, you will need to use the bookmark for that segment's text in each of the resource sections of Chapter 3. The CD format of the Final SEIS is also bookmarked to facilitate this type of review.

The following table presents a summary description of each chapter and appendix and explains how they contribute to the environmental analysis conducted for the proposed Gateway West Transmission Line Project, Segments 8 and 9.

Section	Description
Executive Summary (28 pages)	This stand-alone summary provides an understanding of why the agencies have prepared the SEIS, summary-level descriptions of the Revised Proposed Action and the Alternatives, and the potential impacts of these actions.
1: Purpose and Need (45 pages)	This chapter provides the purpose and need for the agencies' actions, the Proponents' objectives for the Project, the scope of analysis, and the Cooperating Agencies; presents a description of applicable federal orders and mandates and provides a list of permits, consultations, and approvals required for the Project to be constructed and operated; summarizes the scoping conducted for the Project; and lists the issues that were raised during scoping that drive the analysis.
2: Alternatives Considered (74 pages)	This chapter is the heart of the SEIS and provides a description and a summary comparison of the Proposed Action, the Alternatives, and the No Action Alternative. It includes the Preferred Alternative and the agencies' reasons for their choice. It provides a detailed description of the Revised Proposed Action and the design and construction components common to all Action Alternatives. Chapter 2 summarizes the comparison among Action Alternatives and also summarizes the proposed plan amendments. It is supplemented by **Appendix A**, which shows maps of the Alternatives; by **Appendix B**, which provides design and construction details common to all action alternatives; and by **Appendix F**, which details the proposed land use plan amendments for public lands managed by the BLM.

Section	Description
3: Affected Environment and Environmental Effects (814 pages)	This chapter is organized by resource, and is introduced by a general guide to the chapter (Section 3.0), explaining how each resource is organized and how disturbance is calculated. It covers, by resource, the affected environment and the environmental consequences of the Action Alternatives and compares them to the No Action Alternative. Impacts on National Historic Trails (NHTs) are discussed in a new section (3.1). In the Final EIS, NHTs were discussed in the Cultural Resources section (3.3). Chapter 3 also analyzes the impacts of the land use plan amendments where they change underlying land classification and could have impacts beyond that of the Project itself. It provides the details that support the comparison of alternatives found in Chapter 2, and is itself supported by detailed tables of comparisons found in **Appendix D** and by maps and simulations of visual impacts found in **Appendices E and G**.
4: Cumulative Effects (58 pages)	Chapter 4 presents the cumulative effects of the Project when considered together with the past, present, and reasonably foreseeable future actions in the analysis area. It includes the rationale for selecting other actions for inclusion, lists and describes those actions or projects, and presents an analysis of their cumulative effect. It includes consideration of land use plan amendments.
5: Consultation and Collaboration (13 pages)	This chapter highlights the consultation and collaboration process for the proposed Project, including the general public as well as Tribal governments, and federal, state, and local agencies and organizations.
6: Glossary and Index (38 pages)	The glossary provides definitions of specialized words and phrases found in the document and also briefly defines the important federal laws that provide the framework for the analysis. The index allows the reader to search the document by important word or phrase.
7: Literature Cited (21 pages)	This chapter presents literature cited, organized alphabetically by author for the entire document.
Appendix A (10 pages)	Appendix A provides large-scale maps of the Proposed Project and the Alternatives.
Appendix B (60 pages)	Appendix B, the Proponents' Plan of Development Supplement and Helicopter-Assisted Construction Methods, contains design details that supplement the description found in **Chapter 2**.
Appendix C (91 pages)	Appendix C contains the Proponents' Draft Mitigation and Enhancement Portfolio (MEP).
Appendix D (116 pages)	Appendix D contains detailed large-format tables comparing quantitative impacts by route.
Appendix E (69 pages)	Appendix E contains large-format maps depicting the results of GIS analysis for various resources and also contains locational maps for Key Observation Points (KOPs) and the photographic simulations associated with selected KOPs for both visual and cultural resources.
Appendix F (66 pages)	In several cases, for the Revised Proposed Action (Alternative 1) or an Alternative to be approved, the land use management plan for the BLM unit crossed would need to be amended. Appendix F contains the language of each proposed plan amendment and a brief analysis of the need for the amendment and the effects of the amendment.
Appendix G (92 pages)	Appendix G is the visual analysis supplement for Appendix F and provides simulations of the Revised Proposed Routes and other routes that would not be in conformance with the land use management plans.
Appendix H (69 pages)	Appendix H contains the Boise RAC Subcommittee Reports documenting the analysis and recommendations compiled at the request of the BLM Boise District.
Appendix I (95 pages)	Appendix I presents the Scoping Report for the SEIS.
Appendix J (190 pages)	Appendix J contains the report on the inventory and impacts analysis for the National Historic Trails completed in compliance with BLM Manual 6280.
Appendix K (52 pages)	Appendix K contains the BLM's Compensatory Mitigation Framework for assessing habitat restoration in the Snake River Birds of Prey National Conservation Area.

Section	Description
Appendix L (152 pages)	Appendix L contains BLM responses to comments from the public and agencies on the Draft SEIS.
Appendix M (50 pages)	Appendix M contains the environmental protection measures as originally presented in the 2013 Record of Decision.

Copies of the Final SEIS and Proposed Land Use Plan Amendments and other documents pertinent to this project may be examined at:

- Bureau of Land Management Idaho State Office, Public Room
  1387 South Vinnell Way, Boise, ID 83709
  Telephone: 208-373-3863

- Bureau of Land Management, Boise District Office
  3948 Development Avenue, Boise, ID 83705
  Telephone: 208-384-3300

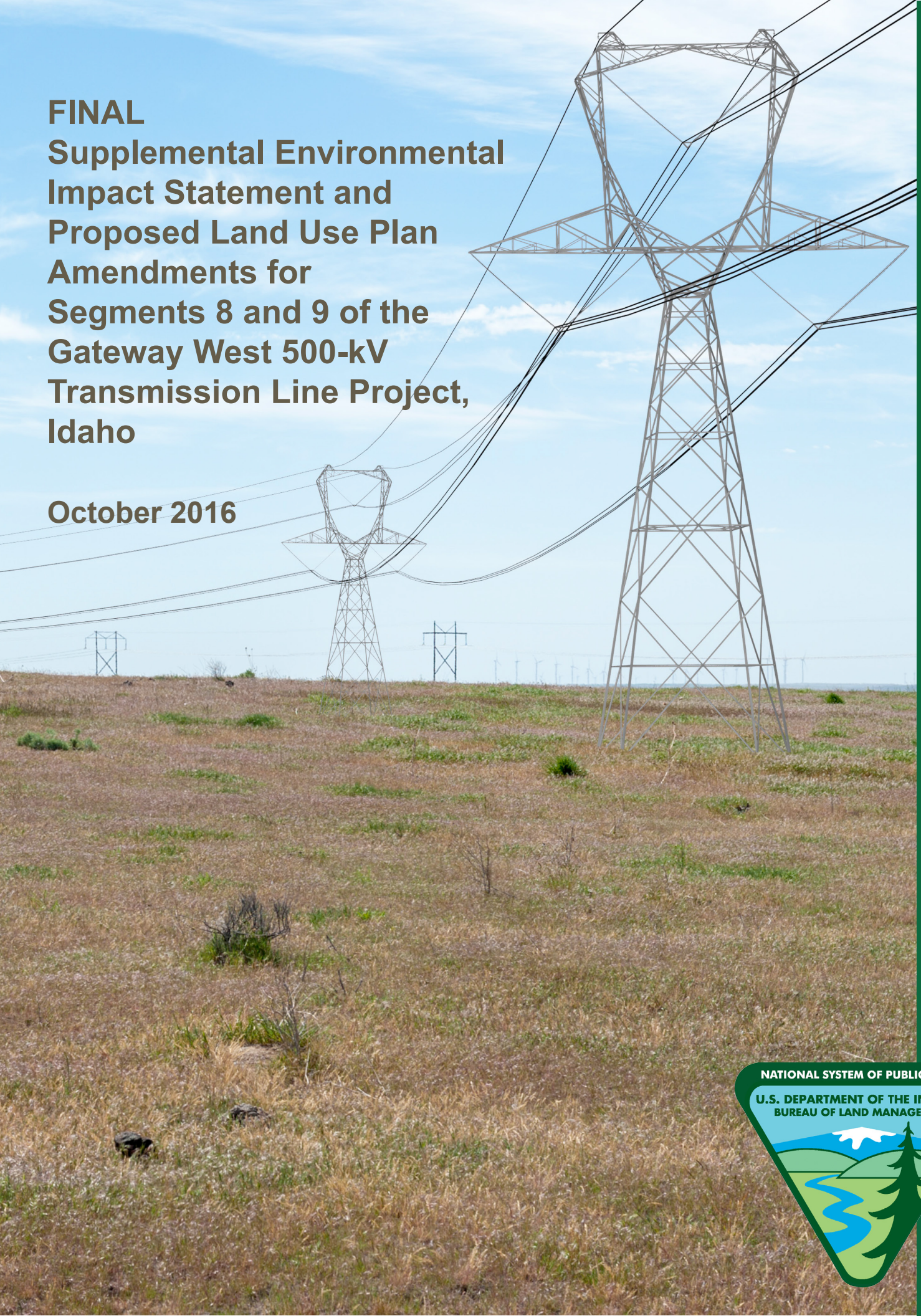
- Bureau of Land Management, Twin Falls District Office
  2878 Addison Avenue East, Twin Falls, ID 83301
  Telephone: 208-735-2060

- Bureau of Land Management, Owyhee Field Office
  20 First Avenue West
  Marsing, ID 83639
  Telephone: 208-896-5912

- The following public libraries:
  - Ada Community Library, Victory Branch (Boise)
  - Boise Public Library
  - Boise State University, Albertsons Library
  - Bruneau Valley District Library (Bruneau)
  - College of Idaho, N.L. Terteling Library (Caldwell)
  - College of Southern Idaho Library (Twin Falls)
  - College of Western Idaho Library (Nampa)
  - Gooding Public Library
  - Kuna Library District
  - Meridian Library District, Cherry Lane Library
  - Mountain Home Public Library
  - Nampa Public Library
  - Northwest Nazarene University, John E. Riley Library (Nampa)
  - State Law Library (Boise)
  - Twin Falls Public Library.

FINAL
Supplemental Environmental Impact Statement and Proposed Land Use Plan Amendments for Segments 8 and 9 of the Gateway West 500-kV Transmission Line Project, Idaho

October 2016



BLM

Idaho State Office

NATIONAL SYSTEM OF PUBLIC LANDS

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

BLM/ID/PL-15/100

The photograph used for the cover of the Supplemental EIS was taken in western Gooding County, Idaho, facing southeast toward a portion of the Oregon Trail, Key Observation Point C1512 in the National Historic Trails analysis. The transmission lines and towers depicted in this photograph are computer-generated simulations.

Final Supplemental Environmental Impact Statement and Proposed Land Use Plan Amendments for Segments 8 and 9 of the Gateway West 500-kV Transmission Line Project, Idaho

[ ] Draft [ ] Final [X] Supplemental

Lead Agency	Bureau of Land Management, Department of the Interior
Cooperating Agencies	U.S. Fish and Wildlife Service (Ecological Services Division); National Park Service (National Trails Office, Pacific West Region, Hagerman Fossil Beds National Monument); U.S. Army Corps of Engineers; Idaho State Historic Preservation Office; Idaho Department of Fish and Game; the Idaho Governor's Office of Energy Resources; City of Kuna; Twin Falls County, Idaho
Responsible Officials	Tim Murphy BLM Idaho State Director
For Information Contact	Jim Stobaugh Project Manager 1340 Financial Blvd Reno, NV 89502 (775) 861-6478

Abstract

On May 7, 2007, Idaho Power Company and PacifiCorp (doing business as Rocky Mountain Power), collectively known as the Proponents, applied to the Bureau of Land Management (BLM) for a right-of-way (ROW) grant to use the National System of Public Lands for portions of the Gateway West Transmission Line Project (Gateway West or Project). The original application was revised in October 2007, August 2008, May 2009, January 2010, and August 2014 to reflect changes and refinements in their proposed Project and in response to feedback from the public regarding routing alternatives. The Plan of Development (POD) has been revised several times in response to Project changes and recommendations from the BLM, other reviewing agencies, and public comment. This supplemental environmental impact statement (SEIS) evaluates the revised proposed action for Segments 8 and 9 as stated in the application including environmental protection measures. It also examines the environmental impacts of four other route alignments and four variations. The BLM has identified seven action alternatives, one of which has been selected as the Preferred Alternative by the BLM. Granting of the ROW for the Revised Proposed Routes or other route alignments would require amendments to BLM Resource Management Plans and BLM Management Framework Plans. Proposed amendments have been identified. Significant impacts were identified from construction and operations of the transmission line on historical resources (historic trails), visual quality, and cumulative impacts on several resources based on past and present levels of disturbance. A framework for compensatory mitigation has been developed. The protest period for the proposed plan amendments will close 30 days from the date of publication of the U.S. Environmental Protection Agency's Notice of Availability in the Federal Register.

EXECUTIVE SUMMARY

INTRODUCTION

On May 7, 2007, Idaho Power Company and PacifiCorp (doing business as Rocky Mountain Power), collectively known as the Proponents, applied to the Bureau of Land Management (BLM) for a right-of-way (ROW) grant to use the National System of Public Lands for portions of the Gateway West Transmission Line Project (Gateway West or Project). The original application was revised in October 2007, August 2008, May 2009, and January 2010 to reflect changes and refinements in their proposed Project and in response to public feedback regarding routing alternatives.

The BLM published the Final Environmental Impact Statement (FEIS) for this Project on April 26, 2013 (BLM 2013a), and a Record of Decision (ROD) on November 14, 2013 (BLM 2013b). In that ROD, the BLM deferred offering a ROW grant for 2 of the 10 segments (i.e., Segments 8 and 9) to allow additional time for federal, state, and local permitting agencies to examine additional routing options, as well as mitigation and enhancement measures for these segments in and around the Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP).

The Proponents submitted a revised Project application for Segments 8 and 9 in August 2014, which has been assigned the case file number of IDI-35849-01. Segments 8 and 9 as now proposed would require amendment of one or more BLM land use plans, including the Twin Falls Management Framework Plan (MFP), the 1987 Jarbidge Resource Management Plan (RMP)[1], the SRBOP RMP, the Bennett Hills/Timmerman Hills MFP, and the Kuna MFP. The Proponents also submitted a portfolio of proposed mitigation measures and other measures focused on enhancing resources and values in the SRBOP, known as the Mitigation and Enhancement Portfolio (MEP; see Appendix C).

This Supplemental Environmental Impact Statement (SEIS) incorporates by reference the analysis related to Segments 8 and 9 included in the Gateway West 2013 FEIS. The SEIS supplements the analysis found in that FEIS by assessing the new information that has become available since the FEIS and ROD were published. The SEIS analyzes the Proponents' Revised Proposed Routes for Segments 8 and 9 and associated design features, the environmental effects of the MEP, and the impact of amending BLM land use plans. Other new information considered in the SEIS is listed below.

New information has become available since the FEIS for this Project was published on April 26, 2013. This new information includes the following:

- The Boise District Resource Advisory Committee (RAC) reviewed available information and local concerns and identified route options and design features for Segments 8 and 9.
- The Proponents submitted a revised application that adopted RAC-identified options as revised Proposed Routes for Segments 8 and 9.

[1] Portions of the area managed under the 1987 RMP are not included in the 2015 Jarbidge RMP; therefore, the 1987 RMP still applies to these areas. Refer to Appendix F for details.

- New routes and route variations have been developed, and the BLM has identified seven action alternatives based on the routes analyzed in this SEIS.
- The BLM identified a Preferred Alternative for the Project.
- The Proponents submitted an MEP that offers mitigation and enhancement for resources and values found in the SRBOP.
- The Proponents revised the Proposed Action within the SRBOP in response to the new Western Electricity Coordinating Council guidelines for spacing of transmission lines and route options evaluated by the RAC.
- Public and agency comments on the revised Proposed Action were received during the public scoping period.
- BLM Manual 6280 direction for evaluating project impacts on National Historic Trails was incorporated into the analysis.
- The BLM issued guidance on mitigation in a Draft Regional Mitigation Manual (BLM 2013c) to implement Secretarial Order 3330 (October 31, 2013), Improving Mitigation Policies and Practices of the Department of the Interior.
- In October 2015, the U.S. Department of the Interior released Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015), which also implements landscape-scale mitigation for impacts from projects.
- On November 3, 2015, the BLM received the Presidential Memorandum: Mitigating Impacts on Natural Development and Encouraging Related Private Investment (80 Federal Register 68743).
- The BLM has developed a framework for compensatory mitigation for unavoidable impacts to the resources and values in the SRBOP.
- The BLM issued a revised RMP for the area managed under the Jarbidge Field Office.
- The BLM issued a ROD for Approved RMP Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, Utah.

Changes between Draft SEIS and Final SEIS

Numerous minor edits to the document were made between the Draft SEIS (DSEIS) and Final SEIS (FSEIS), many in response to comments by agencies and the public. These include corrections to the text, figures, and tables, as well as typographical errors. Major changes to the document include:

- The Environmentally Preferred Alternative is identified in Chapter 2.
- The BLM's Preferred Alternative is identified in Chapter 2.
- The Mitigation Framework for the SRBOP was further developed (see Appendix K).
- Both RAC reports are included in Appendix H.
- Comments on the DSEIS and the BLM's responses to those comments are presented in Appendix L.
- A section on the SRBOP has been added to Chapter 3 of the FSEIS.

- Section 3.7 was updated to reflect that the U.S. Fish and Wildlife Service reinstated threatened status for slickspot peppergrass under the Endangered Species Act on August 17, 2016.
- The environmental protection measures (EPMs) approved in the 2013 ROD for the Gateway West Project have been included as Appendix M. References to Table 2.7-1 in the FEIS have been changed to refer to Appendix M in this FSEIS.
- Two new variations to Alternative 5 are analyzed: the Alternative 5 Helicopter-Assisted Construction Variation and the Alternative 5 West-wide Energy Corridor Variation (see Section 2.3.2.3). Both variations follow routes analyzed in the DSEIS and employ helicopter construction as discussed in the 2013 FEIS. Appendix B-2 provides information on helicopter-assisted construction methods.[2]
- Additional visual resource surveys and analysis were completed for the Hagerman area at the request of the Hagerman Fossil Beds National Monument staff (see Section 3.2 and Appendix E).
- Information on road construction and road improvement for the alternatives has been updated (see Section 3.19).
- The DSEIS incorrectly identified some EPMs as only applying to federally managed lands. This information has been corrected in the FSEIS.

The SEIS identifies opportunities to mitigate the impacts of siting and building Segments 8 and 9, if a ROW is granted, by incorporating avoidance, minimization, and compensation measures with consideration of local and regional conditions. In addition, opportunities for enhancement of resources and values within the SRBOP are evaluated, in accordance with Public Law (P.L.) 103–64, the statute which established the SRBOP. These mitigation and enhancement measures would be scaled to apply to whichever alternative is selected other than No Action.

PURPOSE AND NEED

The BLM is the lead federal agency under the National Environmental Policy Act and is coordinating the preparation of the environmental analysis. The cooperating agencies include the U.S. Fish and Wildlife Service (Ecological Services Division); National Park Service (National Trails Office, Hagerman Fossil Beds National Monument); U.S. Army Corps of Engineers; the Idaho State Historic Preservation Office, Idaho Department of Fish and Game; the Idaho Governor's Office of Energy Resources; the City of Kuna; and Twin Falls County, Idaho.[3]

The purpose of the federal action on federally managed lands is to decide whether to grant, grant with modifications, or deny an application to construct and operate a transmission line on public lands. The need for the action is established by the federal

[2] NEPA Handbook Section 5.3.2 (BLM 2008c) states (emphasis added), "If a new alternative is added after the circulation of a draft EIS, **supplementation is not necessary if the new alternative lies within the spectrum of alternatives analyzed in the draft EIS or is a minor variation of an alternative analyzed in the draft EIS.** In such circumstances, the new alternative may be added in the final EIS."

[3] BLM and the cooperating agencies may be referred to collectively hereafter as "the Agencies."

agencies' responsibility under the Federal Land Policy and Management Act[4] (FLPMA) to respond to an application for a ROW.

ISSUES

Issues raised through scoping include effects on visual resources, cultural resources, historic trails, socioeconomics, environmental justice, plants and wildlife, including special status species, water resources, land use, conformance with land use plans, agriculture, reclamation, control of invasive plant species, recreation, wilderness characteristics, transportation, air quality, noise, electrical environment, and public safety. Important areas of concern included how the Project would affect private landowners in Ada, Canyon, and Owyhee Counties and protecting and enhancing the resources and values for which the SRBOP was established. Chapter 3 of the Draft SEIS discusses how the Revised Proposed Routes, other routes, and Toana Road Variations would affect key issues.

REVISED PROPOSED ACTION

Project Segments 1 through 7 and Segment 10 were analyzed in the 2013 FEIS and authorized in the 2013 ROD. The 2013 ROD deferred the decision to grant ROWs on federal lands for Segments 8 and 9 for the following reasons:

> *…for some portions of the Project the authorizing entities have not been able to agree on an acceptable route. One of these areas involves Segments 8 and 9 and siting in or around the Morley Nelson Snake River Birds of Prey NCA. The EIS analyzes routes located in the NCA and routes that generally avoid the NCA. The principal siting issue involves a requirement in the enabling legislation (Public Law 103-64) that the NCA be managed "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" (Public Law 103-64, Section 3(2)). This requirement differs from state and local government objectives to avoid private lands and site the Project on public land in the NCA.*
>
> *The Proponents' proposal, including environmental protection measures, and BLM standard requirements for surface-disturbing activities for routes in the NCA would conserve and protect NCA resources. However, enhancement components were lacking for routes in the NCA that were analyzed in the Final EIS. As part of their Final EIS comments, the Proponents submitted an "Enhancement Portfolio" for routes located in the NCA. While the Portfolio has merit and the potential to meet the enhancement requirement in the enabling legislation, the BLM needs more time to evaluate and refine it to ensure that it is sufficient.*

As noted in the SRBOP RMP (BLM 2008a):

> *The SRBOP was established in 1993 by P.L. 103-64 and is located in southwestern Idaho, within a 30-minute drive of Boise and almost half of Idaho's population. It encompasses approximately 483,700 public land acres, extending 81 miles along the Snake River. Within the SRBOP boundary are approximately 41,200 State acres, 4,800 privately owned acres, 1,600 military acres, and 9,300 acres covered by water. Since 1979, over 300,000 acres of upland shrub habitat has been lost to fire.*
>
> *The SRBOP contains the greatest concentration of nesting raptors in North America. About 700 raptor pairs, representing 16 species, nest in the SRBOP each spring, including golden*

[4] Federal Land Policy and Management Act of 1976, as amended, 43 United States Code (U.S.C.) § 1761

> *eagles, burrowing owls, and the greatest density of prairie falcons in the world. Eight other raptor species use the area during various seasons.*
>
> *…Prior to authorizing uses, 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 legislation was enacted are allowed to continue to the extent that they are compatible with the purposes for which the SRBOP was established.*

The Segment 8 Revised Proposed Route follows a more northerly route toward the Hemingway Substation from the Midpoint Substation, while the Segment 9 Revised Proposed Route follows a more southerly route from the Cedar Hill Substation to the Hemingway Substation (Figure ES-1). The Proponents have proposed this split because of the need to serve customers along each route and to increase system reliability.

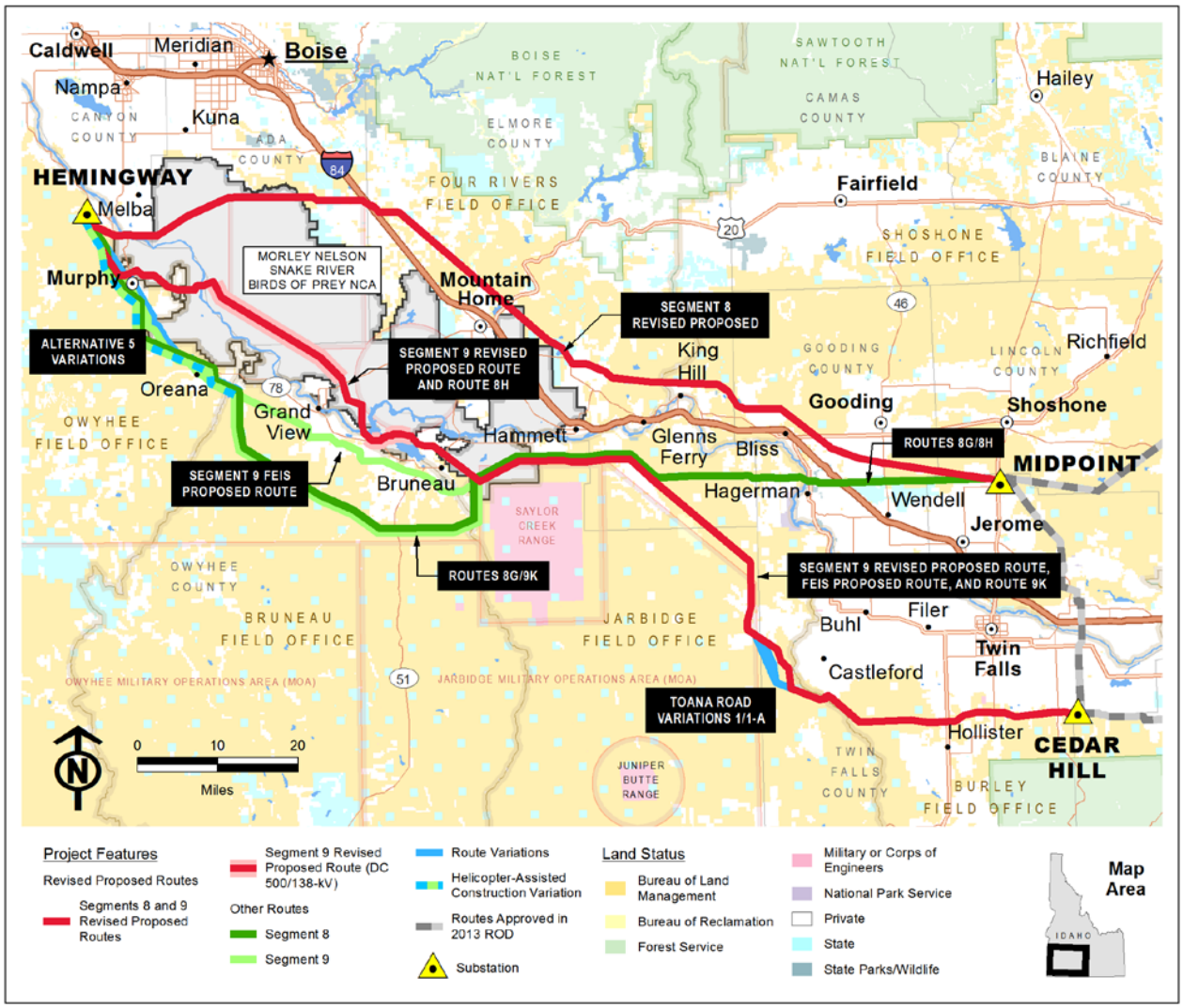


Figure ES-1. Project Overview

Project facilities include the following:

- two transmission line segments, their associated access roads, multipurpose and helicopter fly yards, and other temporary construction ground disturbances;
- proposed substation and expansions or modifications at two existing substations and at one substation approved under the 2013 ROD;
- reconstruction of portions of existing 138-kV and 500-kV lines;
- removal of one small existing substation and associated lines;
- other associated facilities including communication systems and optical fiber regeneration stations; and
- access roads and distribution supply lines where needed for proposed substations and optical fiber regeneration stations.

Project substations, structure design alternatives including a summary and comparison of tower types and structure finish and surface treatment alternatives, and components common to all action alternatives are described in Chapter 2 of the 2013 FEIS.

Details of construction and operation modifications submitted by the Proponents as part of their Plan of Development (POD) Supplement are included in Appendix B of this FSEIS. Proposed mitigation measures are discussed in the Draft MEP submitted by the Proponents as part of their POD Supplement; the Draft MEP is included separately in Appendix C of this FSEIS. Environmental protection plans are included as appendices to the August 2013 POD. All of these plans are considered part of the Project description for the proposed Project. Table 2.2-2 in Chapter 2 summarizes the proposed facilities.

SEGMENT 8 REVISED PROPOSED ROUTE – MIDPOINT TO HEMINGWAY

One single-circuit 500-kV transmission line is proposed between the existing Midpoint Substation and the existing Hemingway Substation, located approximately 30 miles southwest of Boise, Idaho (Figure ES-1). The line would be constructed using steel lattice towers between 145 and 180 feet tall (Appendix B of this SEIS). Appendix A, Figure A-1 in this SEIS shows the Segment 8 Revised Proposed Route. The Revised Proposed Route is 129.7 miles long and therefore two optical signal regeneration sites would be needed along the route. Final locations for regeneration stations would be determined after detailed design engineering is completed. 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 (milepost [MP] 99.7) to the Hemingway Substation. It would also cross the Snake River north of Guffey Butte, instead of south as in the 2013 FEIS. The first 91.4 miles of the route is unchanged from the 2013 FEIS Proposed Route.

Key factors considered in routing this segment included using the West-wide Energy (WWE) corridor where possible, conflicts with agricultural lands, residential development, visual resources, the SRBOP, slickspot peppergrass, the Halverson Bar and Wees Bar Non-motorized areas, a National Register Historic District, and the Idaho Army National Guard Orchard Combat Training Center. Key factors considered since the 2013 FEIS included impacts to communities, agriculture, and private property in the

Kuna and Melba areas of Ada, Canyon, and Owyhee Counties; critical habitat for slickspot peppergrass; and the Orchard Combat Training Center Alpha Sector. The 129.7-mile-long Revised Proposed Route is within the WWE corridor for 33.8 miles and adjacent to existing transmission corridors for 117.1 miles.

Several plan amendments would be needed to make the Segment 8 Revised Proposed Route conform to BLM land use plans. The Project would be consistent with 2015 Jarbidge RMP; however, the 2015 RMP does not cover all the areas that were managed under the 1987 Jarbidge RMP. Amendments would be needed to areas managed under the 1987 RMP to allow the transmission line in an avoidance area near paleontological areas, to allow disturbance while protecting cultural resources, and to change Visual Resource Management (VRM) classes to allow the transmission line. The Kuna MFP, the SRBOP RMP, and the Bennett Hills/Timmerman Hills RMP each require an amendment to allow the transmission line outside of existing corridors. In addition, the Bennett Hills/Timmerman Hills MFP would need an amendment for visual resources. The SRBOP RMP would also need an amendment to allow the surface disturbance from the Project within 0.5 mile of occupied sensitive plant habitat.

SEGMENT 9 REVISED PROPOSED ROUTE – CEDAR HILL TO HEMINGWAY

One single-circuit 500-kV transmission line is proposed between the proposed Cedar Hill and the existing Hemingway Substations (Figure ES-1). The line would be constructed using 500-kV single-circuit lattice steel structures between 145 and 180 feet tall and H-frame 500/138-kV structures between 125 and 200 feet tall in the areas to be double-circuited (Appendix B to this Draft SEIS). Appendix A, Figure A-1 of this SEIS provides details on the transmission line route between the Cedar Hill and Hemingway Substations. The Segment 9 Revised Proposed Route is 165.3 miles long and therefore would require two optical signal regeneration sites along its route. Final locations for regeneration stations would be determined after detailed design engineering is completed. The 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 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 authorized by the Federal Energy Regulatory Commission within the SRBOP: the first, near C.J. Strike Reservoir and the Bruneau Arm (MPs 106.2 to 109.3 and 109.9 to 112.1), and the other along Baja Road (MPs 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. The Revised Proposed Route crosses the Snake River south of Sinker Butte, whereas the 2013 FEIS Proposed Route did not cross the Snake River. From MP 154.7 to the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

Key factors considered in routing this segment were agricultural and residential development in Owyhee County, visual resources, the Jarbidge Military Operations Areas, Saylor Creek Air Force Range, Mountain Home Air Force Base, Balanced Rock County Park, Bruneau Dunes State Park, the Cove Non-Motorized Area, greater sage-grouse leks and priority habitat, and the Salmon Falls Creek Wild and Scenic River, as described in the 2013 FEIS. Key factors considered since the 2013 FEIS included the

amount of new road that would be constructed and maintained within the SRBOP and in unroaded areas in Owyhee County, and minimizing the construction of transmission towers and roads near sage-grouse leks and within sage-grouse habitat.

The Segment 9 Revised Proposed Route would not be in conformance with the management direction provided in the 1987 Jarbidge and SRBOP RMPs, nor the Twin Falls MFP. The 1987 Jarbidge RMP would need an amendment for visual resources, changing VRM Class II to VRM Class III, for areas still managed under that plan. The SRBOP RMP would need amendments to allow the project in the Cove non-motorized area, to change VRM Class II areas to VRM Class III and allow a crossing of the Oregon Trail, to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat, to cross outside of existing utility corridors within the SRBOP, and to allow the Project within the C.J Strike and Snake River Special Recreation Management Areas. The Twin Falls MFP would need amendments to allow the ROW outside of existing corridors and to allow the Project to cross the Salmon Falls Area of Critical Environmental Concern, changing the VRM to VRM Class III, consistent with the new Jarbidge RMP.

OTHER ROUTES CONSIDERED

Over 50 routes were considered but were eliminated from further consideration because, upon examination, it became clear that they would not result in effects outside the range of effects analyzed in the 2013 FEIS. The exception to this is the Proposed Route considered in the 2013 FEIS, which is fully analyzed in this document. Routes considered and eliminated are described in Section 2.5.3 of this SEIS, along with the reason they are no longer being considered. The six routes considered in detail are the Revised Proposed Route for Segment 8, 8G, 8H, the Revised Proposed Route for Segment 9, the Segment 9 Proposed Route analyzed in the 2013 FEIS (referred to as FEIS Proposed 9), and 9K.

Route 8G

Route 8G is being considered by the BLM to avoid crossing the northern portion of the SRBOP (Figure ES-1). 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. The alignment 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 Revised Proposed Route. Approximately 8.8 miles of this route would be within the SRBOP.

The SRBOP RMP would need an amendment to allow the transmission line outside of existing corridors and to allow the surface disturbance from the Project within 0.5 mile of occupied sensitive plant habitat. An amendment would be needed for the Bruneau MFP for visual resources.

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. Approximately 52.4 miles of this route would be within the SRBOP.

The SRBOP RMP would need amendments to allow the transmission line outside of existing corridors, for cultural and visual resources associated with the Oregon Trail and Special Recreation Management Areas, to cross a restricted area, and to allow the surface disturbance from the Project within 0.5 mile of occupied sensitive plant habitat.

FEIS Proposed 9

The Proponents originally designed the 162.2-mile-long route as the Proposed Route in Segment 9 to follow existing utility corridors and avoid the SRBOP and other protected areas where feasible (Section 2.2 of the 2013 FEIS). 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.

The SRBOP RMP would need an amendment to allow the transmission line outside of existing corridors and to allow the surface disturbance from the Project within 0.5 mile of occupied sensitive plant habitat. The Twin Falls MFP would require an amendment to allow the transmission line outside of existing corridors and for visual resources. The Bruneau MFP would require an amendment for visual resources.

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. The route was modified to minimize direct and indirect impacts to priority sage-grouse habitat (Figure ES-1). The route is approximately 174.6 miles long, compared to the 165.3-mile-long Revised Proposed Route. Approximately 8.7 miles of this route would be within the SRBOP.

As with the Revised Proposed Route and FEIS Proposed 9, Route 9K would 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. The SRBOP RMP would need an amendment to allow the transmission line outside of existing corridors and to allow the surface disturbance from the Project within 0.5 mile of occupied sensitive plant habitat. The Bruneau MFP would require an amendment for visual resources. The Twin Falls MFP would require an amendment to allow the transmission line outside of existing corridors and for visual resources.

The proposed transmission line segments, routes, and variations would cross federal, state, and private lands. Table ES-1 summarizes miles crossed by ownership for the Revised Proposed Routes, other routes, and route variations. The ROW width

requested for the transmission line is 250 feet for both single-circuit 500-kV segments and double-circuit 500/138-kV segments.

Table ES-1. Revised Proposed Routes, Other Routes, and Variations Summary of Miles and Percent Crossed by Ownership

Routes	Length in Miles					Percent of Total[1/,2/]			
	Total[3/]	BLM[4/]	State	Private	Other[5/]	BLM[3/]	State	Private	Other
Segment 8 Revised Proposed Route	**129.7**	78.4 [17.6]	11.1 [2.0]	35.8 [3.0]	3.9 2.5]	60.5% [13.5%]	8.5% [1.5%]	27.6% [2.3]	3.4% [2.0%]
Route 8G	**146.9**	114.5 [8.8]	13.5 [1.1]	18.9	0.1	77.9% [6.0%]	9.2% [0.8%]	12.9%	–
Route 8H	**137.5**	103.0 [52.4]	14.3 [5.2]	19.7 [3.0]	0.5 [0.2]	74.9% [38.1%]	10.4% [3.8%]	14.3% [2.2%]	0.4% [0.2%]
Segment 9 Revised Proposed Route	**165.3**	142.6 [52.4]	7.5 [5.2]	14.7 [3.0]	0.4 [0.2]	86.3% [31.7%]	4.5% [3.2%]	8.9% [1.8%]	0.2% [0.1%]
FEIS Proposed 9	**162.2**	129.4 [11.1]	4.6 [1.1]	28.3 [1.3]	–	79.8% [6.9%]	2.8% [0.7%]	17.4% [0.8%]	–
Route 9K	**174.6**	156.2 [8.7]	4.6 [1.1]	13.8	–	89.5% [5.0%]	2.6%	7.9%	–
Segment 9 Comparison portion for Toana Road Variations 1/1-A	**8.7**	8.7	–	–	–	100.0%	–	–	–
Toana Road Variation 1	**8.5**	8.2	0.3	–	–	96.5%	3.5%	–	–
Toana Road Variation 1-A	**8.9**	7.8	1.0	–	–	87.6%	11.2%	–	–
Alternative 5Comparison Portion for Helicopter-Assisted Construction and WWE Corridor Variations[6/]	**66.1**	58.4	2.5	5.2	–	88.4	3.7	7.9	–
Alternative 5 Helicopter-Assisted Construction Variation[6/]	**66.1**	58.4	2.5	5.2	–	88.4	3.7	7.9	–
Alternative 5 WWE Corridor Variation[6/]	**62.2**	50.2 [7.0]	2.1	9.6 [2.7]	–	80.7 [11.2]	3.8	15.4 [4.3]	–

Note that values in "[ ]" indicates miles inside the SRBOP (regardless of landownership).

1/ Percentages provided in other chapters of the SEIS may vary slightly due to differences in the Analysis Area used for various resources.
2/ Totals may not equal 100 percent due to rounding.
3/ Mileages are rounded to tenths of a mile throughout table; therefore, rows may not sum exactly.
4/ BLM – Bureau of Land Management
5/ "Other" includes Bureau of Reclamation, U.S. Fish and Wildlife Service, etc.
6/ Distance represents the sum of the 8G and 9K lines placed 250 feet apart.

Toana Road Variation 1 to 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 to avoid paralleling the Toana Freight Wagon Road, a National Register historic site. After the 2013 FEIS, BLM archaeologists determined that the Proposed Route paralleled within 0.25 mile of the Toana Road between MP 38.2 and 40.6, and paralleled within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles long and would not require any plan amendments.

Toana Road Variation 1-A to the Segment 9 Revised Proposed Route

The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was also recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road and to utilize existing roads and to minimize new road construction in the area. Variation 1-A is approximately 8.9 miles long and would not require any plan amendments.

Alternative 5 Helicopter-Assisted Construction Variation

The Alternative 5 Helicopter-assisted Construction Variation would be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6 in Appendix A). This variation would consist of 32.9 miles of 8G and 33.2 miles of 9K, each route built adjacent to each other but approximately 250 feet apart; therefore, the total length of the transmission lines would be 66.1 miles.

Helicopter-assisted construction is intended to reduce ground disturbance. This variation would utilize low-impact vehicles and ground equipment to support the construction of foundations and tower erection. Tower foundations would be constructed using equipment specifically selected to minimize ground disturbance to the extent practicable. Some lattice tower erection may be completed within the limitations of the lower impact construction equipment. All other construction would be supported by helicopters with sufficient lift capacity for the intended operation.

The Proponents estimate that up to 1,600 helicopter flights would be required, for a period of 2 to 3 months, in order to construct the Project under this variation. See Appendix B-2 for additional information on helicopter-assisted construction.

Alternative 5 West-wide Energy Corridor Variation

The Alternative 5 WWE Corridor Variation would also be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). This variation would consist of 31.0 miles of 8G and 31.2 miles of 9K, each route built adjacent to each other but approximately 250 feet apart; therefore, the total length of the transmission lines would be 62.2 miles.

Under this variation, the 9K and 8G routes would follow FEIS Proposed 9 to the Hemingway Substation beginning approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). FEIS Proposed 9 generally follows the WWE corridor, leaving it briefly near Murphy to avoid impacting a pivot irrigation system.

MITIGATION

To authorize a ROW under FLPMA through any portion of the SRBOP, the BLM must demonstrate that: 1) the use is compatible with the enabling statute of the SRBOP; 2) impacts to the SRBOP have been avoided and minimized to the greatest extent possible; and 3) enhancement will result in a net benefit to the SRBOP for the duration of the ROW permit (BLM 2008a).

The Proponents have developed a draft MEP (August 2014) aimed at offsetting remaining residual impacts to resources and values and enhancing the resources and values found in the SRBOP (see Appendix C). The Proponents' Draft MEP includes both compensatory mitigation and enhancement components that collectively are design features of their proposal. The compensatory mitigation addresses the

remaining impacts that persist after all other design features have been implemented. Remaining impacts are defined in Section 3.0. Specifically, the MEP includes:

- avoidance and minimization through routing and environmental protection measures (EPMs);
- mitigation that requires so-called “enhancement ratios” designed to rectify direct impacts beyond standard mitigation;
- restoration efforts consistent with SRBOP required mitigation goals and objectives;
- visitor enhancement activities;
- reclamation and project-wide compensatory mitigation;
- removal of existing power lines and substation within the SRBOP;
- purchase of high-priority private inholdings in the SRBOP; and
- improved funding of law enforcement.

The mitigation for cultural resources, including national historical trails, will be covered by a Historic Properties Treatment Plan and site-specific Segment Plans being developed through the Programmatic Agreement for compliance with Section 106 of the NHPA. Mitigation under the National Environmental Policy Act will encompass those resources that are not necessarily considered “historic properties” such as cultural sites and traditional cultural and religious places important to tribes or other cultural groups. Additional information is found in Section 3.3 – Cultural Resources.

Mitigation for greater sage-grouse and sagebrush habitats will be covered under the Greater Sage-Grouse Habitat Mitigation Plan, and mitigation for migratory birds will be covered under the Migratory Bird Habitat Mitigation Plan. Refer to Section 3.11 – Special Status Wildlife and Fish Species for additional information. Mitigation for unavoidable impacts to wetlands will be covered under the Compensatory Mitigation and Monitoring of Unavoidable Impacts to Waters of the U.S. See Section 3.9 – Wetlands and Riparian Areas for additional information.

The Proponents’ MEP intends to offer mitigation and enhancement for the resources and values in the SRBOP, which is its focus; however, the MEP does not provide sufficient details or specifics for development of such mitigation actions related to habitat restoration. The lack of detail or specifics in the MEP makes it unclear how the MEP goals would be achieved. Consistent with policies released in October and November 2015 (see Section 3.0), the BLM is directed to determine the measurable environmental benefit of (proposed) mitigation.

To address this deficiency, the BLM developed the Compensatory Mitigation Framework (Appendix K) for determining the required compensatory mitigation for impacts to raptor populations and habitats and the associated natural and environmental resources and values, and to the scientific, cultural, and educational resources and values in SRBOP. After avoidance and minimization are considered, this Framework would be used for any alternative selected for the Project to offset reasonably foreseeable remaining residual effects from the Project in SRBOP. The Framework is structured to ensure that raptor populations and habitats and the natural and environmental resources and values will be enhanced above baseline conditions,

and therefore meet the enhancement requirements in P.L. 103-64. A more detailed discussion of the Compensatory Mitigation Framework can be found in the Introduction to Chapter 3 and Appendix K of this FSEIS.

If Project routes are approved, the BLM may also develop compensatory mitigation requirements for other protected resources in the SRBOP that are impacted by the Project, including scientific and educational resources, which are not already covered in the Compensatory Mitigation Framework (e.g., cultural resources are addressed in the HPTP) following engineering and design of the approved route.

As the Project is potentially renewable after its 30-year term, additional or continued compensatory mitigation may be required during that renewal process.

NO ACTION ALTERNATIVE

The action triggering this environmental review is described in the Proponents' applications to the BLM for a ROW grant for the portion of the Project on federal lands. The agency may deny the respective applications or approve the Project with or without conditions. Therefore, the No Action Alternative analyzed in the 2013 FEIS is the predicted result of the denial of the applications. Under the No Action Alternative, Gateway West Segments 8 and 9 would not be constructed (no construction of the new substations, substation expansion, or the transmission line). No RMPs or MFPs would need to be amended if the No Action Alternative is selected. The objectives of the Project, which include providing increased transmission capacity and a more reliable transmission line system for transport of energy, including wind energy, to meet existing and future needs (as described in Section 1.4, Proponents' Objectives for the Project), would not be met. The cumulative effects of the No Action Alternative are described in Chapter 4.

ACTION ALTERNATIVES

The BLM identified seven action alternatives combining one route each from Segment 8 and 9. These alternatives are listed below.

Alternative 1 – The Proposed Action (the Revised Proposed Routes for Segments 8 and 9). Alternative 1 has a combined length of 295 miles. Two portions of the new 500-kV line (totaling 25.7 miles) would be double-circuited on new H-frame structures with the existing 138-kV lines within the SRBOP. This would require removal of an existing transmission line along a total of 25.6 miles. Approximately 83.3 miles of this alternative would be within the SRBOP.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9. Alternative 2 has a combined length of 291.9 miles, which is the shortest length among the seven alternatives. It would require removal of an existing transmission line along 1.1 miles of the route. Approximately 35.1 miles of this alternative would be within the SRBOP.

Alternative 3 – Revised Proposed 8 and Route 9K. Alternative 3 has a combined length of 304.3 miles and would require removal of an existing transmission line along 1.1 miles of the route. Approximately 31.3 miles of this alternative would be within the SRBOP.

Alternative 4 – Route 8G and FEIS Proposed 9. Alternative 4 has a combined length of 309.1 miles. It would require removal of an existing transmission line along 1.9 miles of the route. Approximately 23.5 miles of this alternative would be within the SRBOP.

Alternative 5 – Route 8G and Route 9K. Alternative 5 has a combined length of 321.5 miles, which is the highest total length among the seven alternatives. However, the majority of the alignment would consist of two lines located 250 feet apart, rather than two separate lines affecting different areas. It would require removal of an existing transmission line along 1.9 miles of the route. The two routes would follow the same alignment within the SRBOP for approximately 9.9 miles each regardless of land ownership (approximately 8.8 miles on lands administered by the BLM), for a combined total of approximately 19.7 miles of new transmission line in the SRBOP.

Two variations are considered for this alternative. The Alternative 5 Helicopter-Assisted Construction Variation would be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). The Alternative 5 WWE Corridor Variation would also be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. Under this variation, the 9K and 8G routes would follow FEIS Proposed 9 to the Hemingway Substation beginning approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). FEIS Proposed 9 generally follows the WWE Corridor, leaving it briefly near Murphy to avoid impacting a pivot irrigation system.

Alternative 6 – Route 8H Route and FEIS Proposed 9. Alternative 6 has a combined length of 299.7 miles, and would require removal of an existing 138-kV transmission line along 25.7 miles of the route as well as a 1.9-mile rebuild of an existing 500-kV line. Approximately 74.7 miles of this alternative would be within the SRBOP. Two portions of the new 500-kV line (totaling 25.7 miles) would be double-circuited on new H-frame structures with the existing 138-kV lines within the SRBOP.

Alternative 7 – Route 8H and Route 9K. Alternative 7 has a combined length of 312.1 miles. It would require removal of an existing 138-kV transmission line along 25.7 miles of the route as well as a 1.9-mile rebuild of an existing 500-kV line. Approximately 70.9 miles of this alternative would be within the SRBOP. Two portions of the new 500-kV line (totaling 25.7 miles) would be double-circuited on new H-frame structures with the existing 138-kV lines within the SRBOP.

Each of the seven action alternatives is analyzed with and without the Toana Road Variation 1 and Toana Road Variation 1-A.

PREFERRED ALTERNATIVE

The BLM has identified Alternative 5, with the inclusion of the Toana Road Variation 1 as a modification, as the Preferred Alternative for the Project. This alignment minimizes crossing of the SRBOP on BLM-managed land to a total of 17.5 miles (approximately 8.8 miles for Route 8G and 8.7 miles for Route 9K in parallel), separated by 250 feet at minimum. The alternative avoids all greater sage-grouse Priority Habitat Management Areas, the Hagerman Fossil Beds National Monument, the historic Toana Freight Road, and Balanced Rock natural landmark in Twin Falls County. The distance separating the segments (250 feet at minimum) meets the Western Electricity Coordinating Council

planning criteria, while minimizing the Project footprint by reducing the need to construct new access roads to build and service the lines. The alignments in this alternative also avoid primary agricultural lands in Owyhee County and, in general, impact the least amount of private lands of any alternative analyzed in detail in the SEIS. Residential areas of Kuna and Melba are also avoided.

The BLM's Preferred Alternative only applies to federal lands. While the BLM's Preferred Alternative could affect private lands adjacent to or between federal areas, decisions on siting and construction requirements for non-federal lands are under the authority of state and local governments (see Table 1.5-1 for permits that would be required and Section 3.17.1.3 for a description of the regulatory requirements).

Environmentally Preferable Alternative

The environmentally preferred alternative is the alternative that, on balance, appears to have the lowest overall impact on the natural, human, and cultural environment, including resource uses. For Gateway West, the environmentally preferred alternative is the No Action Alternative. As described earlier, the No Action Alternative analyzed in the EIS, as well as in this SEIS, is the predicted result of the denial of the Proponents' applications. Under the No Action Alternative, Gateway West would not be constructed across federal lands. The RMPs or MFPs amendments discussed in the SEIS would not be approved if the No Action Alternative is selected. No Project-related impacts to vegetation, soils and wildlife species and other resources would occur. There would be no impacts to the resources and values of the SRBOP. 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. There would also be no Project-related impacts to agriculture, transportation, scenery, or other aspects of the human environment. Other transmission line projects may be proposed to meet regional energy needs if the Gateway West lines are not built.

SUMMARY OF EFFECTS

This section summarizes the effects analysis documented in Chapter 3 of this FSEIS.

Tables ES-2 and ES-3 present the comparison of effects for the Segments 8 and 9 Revised Proposed Routes, respectively; FEIS Proposed 9; Routes 8G, 8H, and 9K; and the four variations. Table ES-4 presents this same information, but for the seven BLM action alternatives. A full explanation of the evaluation criteria and the environmental consequences of choosing each route or alternative is found by resource in Chapter 3. All impact analysis was conducted based on a Project description that includes the Proponents' EPMs contained in Appendix Z to the August 2013 POD (which is in Appendix B to the 2013 ROD). These measures are also included as Appendix M to this document. The EPMs would apply to all routes and action alternatives as discussed in Section 2.6.1. Although the BLM can only require mitigation measures on federal lands, the Proponents have agreed to apply these measures to all lands in Idaho unless the landowner directs otherwise (see Appendix M).

Table ES-2. Comparison of Effects for Segment 8[1/]

Comparison Features	Unit	SEIS Revised Proposed Route Segment 8 [2/]	SEIS Route 8G	SEIS Route 8H
General				
Total Length	miles[3/]	129.7	146.9	137.5
Construction Disturbance Area	acres[4/]	2,271 [298]	2,752 [180]	2,525 [1,006]
Operations Disturbance Area	acres	243 [28]	332 [28]	256 [88]
Land Ownership and Use				
BLM	miles	78.4 [17.6]	114.5 [8.8]	103.0 [52.4]
Other Federal	miles	3.9	0.1	0.5
State	miles	11.1	13.5	14.3
Private	miles	35.8	18.9	19.7
Indian Reservation	miles	–	–	–
WWE Corridor[5/]	miles	33.8 [2.3]	49.8 [6.7]	46.2 [7.8]
Within or Adjacent to Existing Transmission Corridor	miles	117.1 [17.6]	38.9	71.9 [25.7]
Resource Summaries				
National Historic Trails				
Adverse impacts	number	7	3	11
Visual				
VRM I or II crossed	miles	9.7	0.3	15.4
Cultural				
Potentially affected pre-historic cultural resources	number	117	91	110
Potentially affected historic cultural resources	number	151	100	130
Wildlife				
Designated big game winter range affected (construction)	acres	1,237	733 [9]	388 [38]
Raptor nests within 1 mile	number	489 [144]	228 [12]	908 [584]
Sage-grouse PPH Habitat affected (construction)	acres	129	103 [5]	–
Vegetation				
Total Natural vegetation removed (construction)	acres	666 [13]	1,049 [27]	343 [152]
Juniper Woodland vegetation removed (construction)	acres	–	26	2 [2]
Wetland/Riparian disturbance (construction)	acres	7.6	2.5 [0.3]	2.7 [0.7]
Water/Fish				
Waterbodies crossed	number	204	149	115
Temperature- or Sediment-impaired stream crossings	number	18	31	21
Soils/Minerals				
High K factor impacted (i.e., highly erodible soils) (construction)	acres	1,621 [276]	1,141 [10]	1,296 [620]
Low T factor impacted (i.e., sensitive soils) (construction)	acres	1,809 [205]	1,612 [30]	941 [352]
Land Use/Recreation				
BLM Plan Amendment would be required	Yes/No	Yes	Yes	Yes
Residences within 300 feet of centerline	number	5	1	4
Residences within 1,000 feet of centerline	number	37	40	37

Table ES-2. Comparison of Effects for Segment 8[1/] (continued)

Comparison Features	Unit	SEIS Revised Proposed Route Segment 8 [2/]	SEIS Route 8G	SEIS Route 8H
Agriculture				
Prime Farmland (operations)	acres	50 [8]	86 [61]	116 [72]
Dryland farming impacted (operations)	acres	–	–	<1
Irrigated agriculture impacted (operations)	acres	15	12	14

Note: The numbers in square brackets "[ ]" correspond to values/impacts that occur on BLM-managed lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever route is selected.
2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.
3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.
4/ Acreages rounded to the nearest acre; rows may not sum exactly.
5/ WWE = West-wide Energy

Table ES-3. Comparison of Effects for Segment 9[1/]

Comparison Features	Unit[3/4/]	SEIS Revised Proposed Route Segment 9[2/]	FEIS Proposed 9	SEIS Route 9K	SEIS Toana Variation 1	SEIS Toana Variation 1-A	Alternative 5 Helicopter-Assisted Construction Variation[6/]	Alternative 5 WWE Corridor Variation[6/]
General								
Total Length	miles	165.3	162.2	174.6	8.5	8.9	66.1	62.1
Construction Disturbance Area	acres	3,149 [996]	3,294 [269]	3,383 [172]	168	163	1,027 [17]	1,112 [184]
Operations Disturbance Area	acres	350 [87]	360 [28]	425 [27]	16	11	69 [5]	86 [16]
Land Ownership and Use								
BLM	miles	142.6 [52.4]	129.4 [11.1]	156.2 [8.7]	8.2	7.8	58.4	50.2 [7.0]
Other Federal	miles	0.4	–	–	–	–	–	-
State	miles	7.5	4.6	4.6	0.3	1	2.5	2.4
Private	miles	14.7	28.3	13.8	–	–	5.2	9.6
Indian Reservation	miles	–	–	–	–	–	–	–
WWE Corridor[5/]	miles	27.4	67.8 [9.5]	30.8	–	–	6.9	31.9
Within or Adjacent to Existing Transmission Corridor	miles	55.1	8.2	18.2	–	–	2.1	2.1
Resource Summaries								
National Historic Trails								
Adverse impact	number	10	0	0	–	–	-	-
Visual								
VRM I or II crossed	miles	15.5	0.3	0.5	–	–	0.7	0.4

Table ES-3. Comparison of Effects for Segment 9[1/] (continued)

Comparison Features	Unit[3/4/]	SEIS Revised Proposed Route Segment 9 [2/]	FEIS Proposed 9	SEIS Route 9K	SEIS Toana Variation 1	SEIS Toana Variation 1-A	Alternative 5 Helicopter-Assisted Construction Variation[6/]	Alternative 5 WWE Corridor Variation[6/]
Cultural								
Potentially affected pre-historic cultural resources	number	146	149	148	46	46	10	11
Potentially affected historic cultural resources	number	111	113	96	36	36	12	13
Wildlife								
Designated big game winter range affected (construction)	acres	657 [38]	571 [61]	657 [8]	–	–	699 [9]	659 [103]
Raptor nests within 1 mile	number	963 [584]	306 [14]	284 [12]	10	10	6	71 [2]
Sage-Grouse PPH Habitat affected (construction)	acres	282	292	386 [4]	126	129	146 [4]	1 [1]
Vegetation								
Total Natural vegetation removed (construction)	acres	643 [145]	1,084 [88]	1,339 [25]	54	57	733 [6]	879 [118]
Juniper Woodland vegetation removed (construction)	acres	3 [2]	1	26	–	–	-	-
Wetland/Riparian disturbance (construction)	acres	3.2 [0.9]	6.0 [0.7]	3.5 [0.3]	–	–	2.6	0.3
Water/Fish								
Waterbody crossings	number	172	319	237	15	10	63	58
Temperature- or sediment-impaired stream crossings	number	25	14	52	–	–	3	1
Soils/Minerals								
High K factor impacted (i.e., highly erodible soils) (construction)	acres	1,924 [621]	1,510 [85]	1,767 [8]	165	161	740 [17]	815 [184]
Low T factor impacted (i.e., sensitive soils) (construction)	acres	1,592 [353]	2,131 [108]	2,260 [29]	168	163	926 [17]	1,031 [184]
Land Use/Recreation								
BLM Plan Amendment would be required	Yes/ No	Yes	Yes	Yes	No	No	No	Yes
Residences within 300 feet of the centerline	number	2	8	2	–	–	2	5
Residences within 1,000 feet of centerline	number	10	28	11	–	–	25	37

Table ES-3. Comparison of Effects for Segment 9[1/] (continued)

Comparison Features	Unit[3/4/]	SEIS Revised Proposed Route Segment 9 [2/]	FEIS Proposed 9	SEIS Route 9K	SEIS Toana Variation 1	SEIS Toana Variation 1-A	Alternative 5 Helicopter-Assisted Construction Variation[6/]	Alternative 5 WWE Corridor Variation[6/]
Agriculture								
Prime Farmland (operations)	acres	140 [111]	999 [21]	110 [61]	–	–	309	383
Dryland farming impacted (operations)	acres	<1	<1	–	–	–	–	–
Irrigated agriculture impacted (operations)	acres	9	34	8	–	–	12	15

Note: The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-administered lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever route is selected.
2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.
3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.
4/ Acreages rounded to the nearest acre; rows may not sum exactly.
5/ WWE = West-wide Energy
6/ Total length of 8G and 9K lines, placed 250 feet apart.

Table ES-4. Comparison of Effects for the Seven BLM Action Alternatives[1/]

Comparison Features	Unit[3/,4/]	Alternative[2/]						
		1	2	3	4	5	6	7
General								
Total Length	miles	294.9	291.9	304.3	309.1	321.5	299.7	312.1
Construction Disturbance Area	acres	5,420 [1,294]	5,565 [567]	5,654 [470]	6,046 [449]	6,135 [352]	5,819 [1,275]	5,908 [1,178]
Operations Disturbance Area	acres	593 [115]	603 [56]	668 [55]	692 [56]	757 [55]	616 [116]	681 [115]
Land Ownership and Use								
BLM	miles	221.0 [70.0]	207.8 [28.7]	234.6 [26.3]	243.9 [19.9]	270.7 [17.5]	232.4 [63.5]	259.2 [61.1]
Other Federal	miles	4.3	3.9	3.9	0.1	0.1	0.5	0.5
State	miles	18.6	15.7	15.7	18.1	18.1	18.9	18.9
Private	miles	50.5	64.1	49.6	47.2	32.7	48.0	33.5
Indian Reservation	miles	–	–	–	–	–	–	–
WWE Corridor[5/]	miles	61.2	101.6	64.6	117.6	80.6	114.0	77.0
Within or Adjacent to Existing Transmission Corridor	miles	172.2	125.3	135.3	47.1	57.1	80.1	90.1
Resource Summaries								
National Historic Trails								
Adverse impacts	number	17 [9]	7 [0]	7 [0]	3 [0]	3 [0]	11 [6]	11 [6]
Visual								
VRM I or II crossed	miles	25.2	10.0	10.2	0.6	0.8	15.7	15.9
Cultural								
Potentially affected pre-historic cultural resources	number	263 [52]	266 [26]	265 [26]	240 [3]	239 [3]	259 [29]	258 [29]
Potentially affected historic cultural resources	number	262 [65]	264 [48]	247 [22]	213 [14]	196 [10]	243 [42]	226 [25]
Wildlife								
Designated big game winter range affected (construction)	acres	1,894 [38]	1,808 [61]	1,894 [8]	1,304 [70]	1,390 [17]	959 [99]	1,045 [46]
Raptor nests within 1 mile	number	1,447 [728]	790 [158]	1,768 [156]	390 [14]	334 [12]	1,073 [587]	1,054 [586]
Sage-Grouse PPH Habitat affected (construction)	acres	411	421	515 [4]	395 [5]	489 [9]	292	386 [4]
Vegetation								
Total Natural vegetation removed (construction)	acres	1,309 [158]	1,750 [101]	2,005 [38]	2,133 [115]	2,388 [52]	1,427 [240]	1,682 [177]
Juniper Woodland vegetation removed (construction)	acres	3 [2]	1	26	27	52	3 [2]	28 [2]
Wetland/Riparian disturbance (construction)	acres	10.8 [0.9]	13.6 [0.7]	11.1 [0.3]	8.5 [1.0]	6.0 [0.6]	8.7 [1.4]	6.2 [1.0]

Table ES-4. Comparison of Effects for the Seven BLM Action Alternatives[1/] (continued)

Comparison Features	Unit[3/,4/]	Alternative[2/]						
		1	2	3	4	5	6	7
Water/Fish								
Waterbody crossings	number	376	523	441	468	386	434	352
Temperature- or sediment-impaired stream crossings	number	43	32	70	45	83	35	73
Soils/Minerals								
Highly erodible soils impacted (High K factor, construction)	acres	3,545 [897]	3,131 [361]	3,388 [284]	2,651 [95]	2,908 [18]	2,806 [705]	3,063 [628]
Mineral area (construction)	acres	3,401 [558]	3,940 [313]	4,069 [234]	3,743 [138]	3,872 [59]	3,072 [460]	3,201 [381]
Land Use/Recreation								
BLM Plan Amendment would be required	Yes/ No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residences within 300 feet of the centerline	number	7	13	7	9	3	12	6
Residences within 1,000 feet of centerline	number	47	65	48	68	51	65	48
Agriculture								
Prime Farmland (operations)	acres	190 [119]	1,049 [29]	160 [69]	1,085 [82]	196 [122]	1,115 [93]	226 [133]
Dryland farming impacted (operations)	acres	<1	<1	–	<1	–	<1	<1
Irrigated agriculture impacted (operations)	acres	24	49	23	46	20	48	22

Note: The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever alternative is selected.
2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.
3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.
4/ Acreages rounded to the nearest acre; rows may not sum exactly.
5/ WWE = West-wide Energy

CUMULATIVE EFFECTS SUMMARY

PROPOSED PROJECT

The effects of the proposed Project, when taken together with past, present, and reasonably foreseeable future actions, constitute the cumulative effects of the Project and are fully analyzed in Chapter 4. This analysis assumes the Project would be constructed but examines both the Proponents' Segments 8 and 9 Revised Proposed Routes, other routes, and route variations considered in the SEIS where appropriate. Chapter 4 also discusses the cumulative effects of land use plan amendments needed to allow for the Segments 8 and 9 Revised Proposed Routes when the amendment would change one or more land classifications. For many resources, the effects of

Segments 8 and 9 Revised Proposed Routes, when combined with the effects of other known projects, would not be cumulatively substantial. In other cases, although the effects of Segments 8 and 9 Revised Proposed Routes would be minor, when taken together with effects of other past, present, and proposed future actions, many of which collectively already present a substantial cumulative effect, the cumulative impact may be considerable. Finally, there are some effects of the Segments 8 and 9 Revised Proposed Routes that would by themselves be large and, when considered with other effects, also be cumulatively substantial.

Resources for which the Segments 8 and 9 Revised Proposed Routes effects would be minor and, even when considered together with other projects, would remain less than cumulatively substantial include socioeconomics, environmental justice, invasive plant species, wetlands and riparian areas, federally listed invertebrate species, yellow-billed cuckoo, bald eagle, minerals, paleontological resources, geologic hazards, transportation, air quality, electrical environment, public safety, and noise. Additional details are found in Chapter 4.

Gateway West, by itself, would have minor effects on vegetation, soils, and waterbodies where crossed by access roads and therefore on habitat for most wildlife and fish species, including specifically sagebrush-obligate species (pygmy rabbits, greater sage-grouse, and burrowing owl), riparian-obligate species (Columbia spotted frog and northern leopard frog), and others (e.g., northern goshawk; see Section 3.11 for a comprehensive list). However, even without Gateway West's effects, the loss of habitat and fragmentation from past and present events alone would be considerable. When the Gateway West effects are taken together with historic and present events and projects as well as with multiple future projects, the level of soil and habitat loss and fragmentation continues to be considerable. The Proponents have offered off-site compensatory mitigation for sage-grouse habitat and for wetlands to offset the contribution that Gateway West may make to that loss. Due to the Revised Proposed Routes across the SRBOP and efforts to comply with the SRBOP's enabling statute (P.L. 103-64), the Proponents have also developed an MEP to mitigate effects within the SRBOP (included in Appendix C). These mitigation plans are outlined in Chapter 3.

Gateway West would not have a measurable adverse effect on non-special status migratory bird populations or significant bird conservation sites, though it would impact some individuals. It would also have an adverse effect on migratory bird habitats and ecological conditions through vegetation removal, fragmentation of native habitats, and possible increases in predation pressure due to adding perching substrate for avian predators and adding service roads sometimes used by predators. When taken together with the extensive habitat loss caused by past, present, and reasonably foreseeable actions, the cumulative impact on migratory bird habitat and ecological conditions would be substantial. The BLM will continue to discuss mitigation with the Proponents as part of the National Environmental Policy Act process.

Gateway West, by itself, would have minor adverse effects to private land uses or to agriculture. When taken together with many of the factors that constrain and limit agriculture, including availability of irrigation water and development pressure on property values, additional land withdrawals for utility uses can be very important to individual farmers and to agricultural communities. On federal lands, the Revised

Proposed Routes, other routes, and Route Variations would require changes in existing land use plans. In particular, visual resource or scenic management objectives would not be met if some of the routes were chosen, and existing specifications for allowable levels of visual contrast would have to be altered. Also, several land management plans would require amendments to allow the Project. In some cases, large areas of public lands would be reclassified, possibly allowing for additional projects without additional plan amendments. These impacts to land use planning goals would be considerable, particularly when taken together with other transmission lines requesting similar consideration, which if granted along the same route would create a large utility corridor.

Gateway West, by itself, would have significant adverse effects on some cultural resources, particularly on historic properties for which visual setting is important like historic trails. When considered together with other past, present, and foreseeable future projects, including additional transmission lines, the cumulative effect would also be significant. Similarly, the visual impact of the Gateway West set of lattice towers in some areas would be a substantial negative effect, and when taken together with the several proposed transmission lines and other developments, would form a cumulatively considerable adverse impact.

NO ACTION

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents for Segments 8 and 9 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. Other projects would continue, including other transmission line projects, wind farms, solar projects, extraction of saleable minerals and industrial, commercial and residential development. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If Segments 8 and 9 are not permitted, the demand for transmission services identified by the Proponents would not be met through this Project and the area would have to turn to other proposals to meet the transmission demand.

CONFORMANCE WITH FEDERAL MANAGEMENT PLANS

Table ES-5 lists the amendments for Resource Management Plans and Management Framework Plans associated with the alternatives being considered in this FSEIS. The proposed amendments associated with the BLM's Preferred Alternative, Alternative 5, are highlighted in gray.

Table ES-5. BLM Land Use Plan Amendments by Alternative

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
Twin Falls MFP	L-4.1 Allow future major power transmission lines (line of at least 46-138 kV which originate and terminate outside of the MFP area) to be constructed within the recommended corridors. Also allow construction of transmission lines between the corridors. Do not permit power lines to the west or the east of the two corridors. Exempt service lines from restriction.	Allow a 500-kV transmission line ROW outside of existing corridors. (SEIS-1)	x	x	x	x	x	x	x
	VRM I – VRM 1.1 Manage Salmon Falls Canyon between the Salmon Falls Dam and Lilly Grade for natural ecological change in accordance with a VRM Class I designation. This designation would include only the area from rim to rim. Manage the canyon from Lilly Grade to Balanced Rock under a VRM Class II designation. 2. The ACEC is subject to the following resource restrictions….(2) avoid utility rights-of-way….management of the Salmon Falls ACEC in the Twin Falls Resource Area will be the same as in the Jarbidge Resource Area.	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	MUA-3 Utility avoidance/restricted area – three paleontological areas (Sugar Bowl, Glenn's Ferry, & McGinnis Ranch) and Oregon Trail ruts (7,200 acres/22.5 miles) to overhead and surface disturbance and underground utilities.	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				

Table ES-5. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
1987 Jarbidge RMP (cont'd)	Cultural Resources – 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 through which these routes pass.	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				
	Visual Resource Management – The visual or scenic values of the public lands will be considered whenever any physical actions are proposed on BLM lands. The degree of alterations to the natural landscape will be guided by the criteria established for the four Visual Resource Management Classes as outlined in BLM 8400. VRM Classes will be managed as shown on Map 9.	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	Utility and Communication Corridors – Restrict major utility developments to the two utility corridors identified (Lands Map 3).	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. (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. (SEIS-7)		x		x		x	

Table ES-5. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
SRBOP RMP (cont'd)	Utility and Communication Corridors – Restrict major utility developments to the two utility corridors identified (Lands Map 3). (cont'd)	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow additional major transmission line ROWs as applicable with laws and values for which the SRBOP NCA was designated. Allow two additional 500 kV transmission line ROWs to leave the WWE corridor and exits the SRBOP NCA due south of Bruneau Dunes State Park. (SEIS-13)[1/]					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. (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. (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. (SEIS-22)				x			
	Sensitive Plant Habitat Include in all BLM authorizations permitting surface disturbing activities (non-grazing), requirements that (1) affected areas be reseeded with a perennial vegetative cover, and (2) surface disturbing activities be located at least 1/2 mile from occupied sensitive plant habitat.	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)[2/]	x	x	x	x	x	x	x

Table ES-5. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
SRBOP RMP (cont'd)	VRM II Protect the Oregon Trail and management areas along the Snake River Canyon as a Visual Resource Management (VRM) Class II area, the Army National Guard Orchard Training Area (OTA) as Class IV and remaining areas as Class III. [Visual Resource Management (VRM Map)]	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
		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
	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. (2.14 Recreation 2-20).	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 (2.14 Recreation 2-20).	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)	x					x	x
	2.16 Transportation – Close the following areas to motorized vehicles: … Cove – 1,600 acres (Transportation Map A-145).	The area is closed to motorized vehicle use, subject to authorized use. (SEIS-19)	x					x	x
Bennett Hills/ Timmerman Hills MFP	REC 4.1 – No management activity should be allowed to cause any evident changes in the form, line, color, or texture that is characteristic of the landscape within this Class II area.	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				

Table ES-5. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
Bennett Hills/ Timmerman Hills MFP (cont'd)	REC 14.6 – Prohibit all land disturbing developments and uses on archeological sites.	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.	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			x	x
Bruneau MFP	VRM-1.2: Designate 136,000 acres as VRM Class II where activities are designed and located to blend into the natural landscape and not visually apparent to the casual visitor	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

Notes:
Gray shading indicates the amendments associated with the BLM's Preferred Alternative.

1/ SEIS-13 would also apply to the Alternative 5 WWE Corridor Variation.
2/ SEIS-8 would also apply to the Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations.

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

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Acronyms and Abbreviations

AC	alternating current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACSR	aluminum conductor steel reinforced
ADA	Americans with Disabilities Act
Agencies	BLM and the cooperating agencies
AGL	above ground level
AIRFA	American Indian Religious Freedom Act
ANVIS	Aviator's Night Vision Imaging System
APAI	Area of Potential Adverse Impact
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
AOI	Area of Inconsistency
ARPA	Archaeological Resources Protection Act
ATR	auto tour route
ATV	all-terrain vehicle
AU	Analysis Unit
B2H	Boardman to Hemingway transmission line project
BA	Biological Assessment
BLM	Bureau of Land Management
BMP	best management practice
BO	Biological Opinion
BP	Before Present
BPA	Bonneville Power Administration
BSC	biological soil crust community
CAFE	Corona and Field Effects
CAFO	concentrated animal feeding operation
CCS	Center for Climate Strategies
CDC	Conservation Data Center
CDNST	Continental Divide National Scenic Trail
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations

CGP	Construction General Permit
CH_4	methane
CIAA	Cumulative Impact Analysis Area
CIC	Construction Inspection Contractor
CMUP	Comprehensive Management and Use Plan
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CRP	Conservation Reserve Program
CUP	conditional use permit
CWA	Clean Water Act
CWCS	Comprehensive Wildlife Conservation Strategies
dB	decibel
dBA	decibel, A-weighted
DC	direct current
DEIS	Draft Environmental Impact Statement
DFC	desired future condition
DICIAA	Direct Impact Cumulative Impact Analysis Area
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DPS	Distinct Population Segment
Eagle Act	Bald and Golden Eagle Protection Act
EDRR	Early Detection and Rapid Response
EGS	Energy Gateway South
EHS	extra high strength
EIRR	Eastern Idaho Railroad
EIS	environmental impact statement
ELF	extremely low frequency
EMF	electric and magnetic fields
EO	Executive Order
EPC	Engineering, Procurement, and Construction
EPM	environmental protection measure
ERMA	extensive recreation management area
ERS	Economic Research Service
ESA	Endangered Species Act
ESD	Ecological Site Description
ESRI	Environmental Systems Research Institute
ESRP	Eastern Snake River Plain
ETL	Electrical Testing Laboratories

ETVEP	Eastern Treasure Valley Electrical Plan
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FM	frequency modulation
Forest Plan	Land and Resource Management Plan
Forest Service	U.S. Department of Agriculture, Forest Service
FSA	USDA Farm Service Agency
FSH	Forest Service Handbook
FSM	Forest Service Manual
FTE	full-time equivalent
FY	Fiscal Year
G	Gauss
GAP	Gap Analysis Program
Gateway West	Gateway West Transmission Line Project
GHG	greenhouse gas
GHMA	General Habitat Management Areas
GIS	Geographic Information System
GMP	General Management Plan
GPS	Global Positioning System
GRP	Grassland Reserve Program
GW	gigawatt
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
HEA	Habitat Equivalency Analysis
HMA	Herd Management Area
HPHS	high potential historic site
HPRSEG	high potential route segment
HPTP	Historic Properties Treatment Plan
HUC	Hydrologic Unit Code
Hz	hertz
I	Interstate
IBC	International Building Code
IDARNG	Idaho Army National Guard

IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
IDT	Interdisciplinary Team
IEEE	Institute of Electrical and Electronic Engineers
IFWIS	Idaho Fish and Wildlife Information System
IHMA	Important Habitat Management Areas
IM	Instruction Memorandum
INFISH	Inland Fish Strategy
IOP	Interagency Operating Procedure
IOP	Inventory Observation Point
IPUC	Idaho Public Utilities Commission
IRP	integrated resource plan
ISDA	Idaho State Department of Agriculture
ITA	Indian Trust Asset
IV	Impact Value
IVN	integrated vegetation management
kcmil	one thousand circular mils
kHz	kilohertz
KOP	Key Observation Point
kV	kilovolt
kV/m	kilovolt per meter
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LED	light-emitting diode
LWD	large woody debris
µV/m	microvolt per meter
mA	milliampere
MA	Management Area
MBF	thousand board feet
MBTA	Migratory Bird Treaty Act
MBTA Plan	Final Migratory Bird Habitat Conservation Plan
MD LR 12	Management Decision Lands and Realty 12
MEP	Mitigation and Enhancement Portfolio
MFP	management framework plan
mG	milligauss
MHz	megahertz
MIS	Management Indicator Species
mm	millimeter

MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MP	milepost
mpg	mile per gallon
mph	mile per hour
MW	megawatt
MWh	megawatt-hours
MZ	Management Zone
N_2O	nitrous oxides
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Conservation Area
NEPA	National Environmental Policy Act
NERC	North American Electrical Reliability Corporation
NESC	National Electrical Safety Code
NFS	National Forest System
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NLCS	National Landscape Conservation System
NOAA	National Ocean and Atmospheric Administration
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NRT	National Recreation Trail
NRCS	Natural Resources Conservation Service
NRHD	National Register Historic District
NSA	noise sensitive area
NSO	no surface occupancy
NST	National Scenic Trail
NTSA	National Trails System Act
NTTG	Northern Tier Transmission Group
NVCS	National Vegetation Classification System
NVG	night vision goggle
NWI	National Wetland Inventory
NWR	National Wildlife Refuge
OATT	Open Access Transmission Tariff
OCTA	Oregon-California Trails Association

OCTC	Orchard Combat Training Center
OER	Office of Energy Resources
OHV	off-highway vehicle
OPGW	fiber optic shield ground wire
ORV	outstandingly remarkable value
PA	Programmatic Agreement
PEIS	programmatic environmental impact statement
PFYC	Potential Fossil Yield Classification
PGH	Preliminary General Habitats
PHMA	Priority Habitat Management Areas
P.L.	Public Law
$PM_{2.5}$	particulate matter with diameter of less than 2.5 microns
PM_{10}	particulate matter with diameter of less than 10 microns
POD	Plan of Development
PPH	Preliminary Priority Habitats
Project	Gateway West Transmission Line Project
Proponents	Rocky Mountain Power and Idaho Power
PSD	Prevention of Significant Deterioration
R	Restoration
RAC	Resource Advisory Council
RCRA	Resource Conservation and Recovery Act of 1976
RHA	Rivers and Harbors Act
RM	river mile
RMA	Recreation Management Area
RMP	resource management plan
ROD	Record of Decision
ROW	right-of-way
RTO	Runway Turnoff
RV	recreational vehicle
Sage-Grouse Plan	Off-Site Compensatory Mitigation to Offset Project Impacts to Greater Sage-Grouse
SEIS	Supplemental Environmental Impact Statement
SFA	Sagebrush Focal Areas
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective
SMA	Special Management Area
SMS	Scenery Management System
SO_x	sulfur oxides

SPCC	Spill Prevention, Containment, and Countermeasures
SR	State Route
SRBOP	Morley Nelson Snake River Birds of Prey National Conservation Area
SRMA	Special Recreation Management Area
STATSGO	State Soil Geographic
SWPPP	Stormwater Pollution Prevention Plan
T/A/Y	tons per acre per year
TCP	traditional cultural property
TES	threatened, endangered, and sensitive
THPO	Tribal Historic Preservation Officer
TMDL	total maximum daily load
UPRR	Union Pacific Railroad
US	U.S. Highway
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VAC	Visual Absorption Capability
VCR	visual contrast rating
VMS	Visual Management System
VOC	volatile organic compound
VQO	Visual Quality Objective
VR	Visual Route
VRI	visual resource inventory
VRM	Visual Resource Management
WAFWA	Western Association of Fish and Wildlife Agencies
WECC	Western Electricity Coordinating Council
WRP	Wetlands Reserve Program
WSA	wilderness study area
WSR	Wild and Scenic River
WWE	West-wide Energy

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

On May 7, 2007, Idaho Power Company and PacifiCorp (doing business as Rocky Mountain Power), collectively known as the Proponents, applied to the Bureau of Land Management (BLM) for a right-of-way (ROW) grant to use the National System of Public Lands for portions of the Gateway West Transmission Line Project (Gateway West or Project). The original application was revised in October 2007, August 2008, May 2009, and January 2010 to reflect changes and refinements in the proposed Project and in response to public feedback regarding routing alternatives. The Plan of Development (POD) has been revised several times in response to Project changes and recommendations from the BLM, other reviewing agencies, and public comment.

The original Project as proposed would extend from the Windstar Substation (located near the Dave Johnston Power Plant in Glenrock, Wyoming) to the Hemingway Substation (located near Melba, Idaho; approximately 20 miles southwest of Boise, Idaho). The original Project proposed rebuilding one 230-kilovolt (kV) line and constructing two new 230-kV lines between Windstar and Aeolus; a 345-kV line to connect the new Anticline Substation to the existing Jim Bridger Substation; and a 500-kV system from Windstar to Hemingway, comprising 10 transmission line segments with a total length of approximately 1,103 miles. The eastern route 230-kV line and the 500-kV line between Windstar and Aeolus were dropped prior to the Draft Environmental Impact Statement (DEIS), resulting in a Project with a total length of approximately 1,000 miles.

The BLM published the Final Environmental Impact Statement (FEIS) for this Project on April 26, 2013 (BLM 2013a) and a Record of Decision (ROD) on November 14, 2013 (BLM 2013b). In that ROD, the BLM deferred a decision for 2 of the 10 segments (i.e., Segments 8 and 9) to allow additional time for federal, state, and local permitting agencies to examine additional routing options, as well as mitigation and enhancement measures for these segments.

In November 2013, the BLM requested the Boise Resource Advisory Council (RAC) to consider issues surrounding siting Segments 8 and 9 of the Project. The RAC formed a subcommittee to examine options for Segments 8 and 9. The RAC Subcommittee examined a number of routing options, many of which were similar to routes evaluated in the FEIS. They also examined design features not previously studied in detail in the FEIS, including early drafts of the Proponents' Mitigation and Enhancement Portfolio (MEP), which is discussed in greater detail in Section 1.2.4 below. The RAC Subcommittee presented two reports to the full RAC, which subsequently forwarded them as presented to the BLM. The RAC Subcommittee reports are included as information gathered during scoping for the Supplemental Environmental Impact Statement (SEIS; see Section 1.2.6).

The Proponents submitted a revised Project application for Segments 8 and 9 in August 2014, which has been assigned the case file number of IDI-35849-01. Segments 8 and 9, as currently proposed by the Proponents, would require amendment of one or more BLM land use plans, including the Twin Falls Management Framework Plan (MFP), the

1987 Jarbidge Resource Management Plan (RMP)[1], the Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP) RMP, the Bennett Hills/Timmerman Hills MFP, and the Kuna MFP. The Proponents also submitted a portfolio of proposed mitigation measures and other measures focused on enhancing resources and values in the SRBOP, known as the MEP (see Appendix C).

This SEIS incorporates by reference the analysis related to Segments 8 and 9 included in the Gateway West 2013 FEIS. The SEIS will supplement the analysis found in that FEIS by assessing the new information that has become available since the FEIS and ROD were published.

This SEIS identifies a Revised Proposed Action and new alternatives for Segments 8 and 9, which include design features and mitigation measures, developed in consideration of new information that became available after the FEIS and ROD were published. The SEIS supplements the analysis found in the FEIS with analysis of these new alternatives. The new information did not warrant reanalysis of the alternatives previously described in the FEIS.

Chapter 2 of this SEIS includes a comparison of effects for all routes and alternatives considered in detail in both this document and the FEIS.

The SEIS identifies opportunities to mitigate the impacts of siting and building Segments 8 and 9, if a ROW is granted, by incorporating avoidance, minimization, and compensation measures with consideration of local and regional conditions. In addition, opportunities for enhancement of resources and values within the SRBOP are evaluated, in accordance with Public Law (P.L.) 103–64, the statute which established the SRBOP. Mitigation measures will be evaluated in the context of the magnitude of the potential effects of the Project.

Figures 1.1-1a and 1.1-1b illustrate the routes along Segments 8 and 9, respectively. The maps found in Appendix A show each segment in greater detail.

The BLM is the lead federal agency under the National Environmental Policy Act (NEPA) and will coordinate preparation of the environmental analysis. Cooperating agencies include the U.S. Fish and Wildlife Service (USFWS); National Park Service (NPS); U.S. Army Corps of Engineers (USACE); Idaho State Historic Preservation Office (SHPO); Idaho Department of Fish and Game (IDFG); the Idaho Governor's Office of Energy Resources (OER); the City of Kuna, Idaho; and Twin Falls County, Idaho. The role of cooperating agencies is derived from the NEPA requirement for federal, state, and local governments to cooperate with the goal of achieving "productive harmony" between humans and their environment. The Council on Environmental Quality's (CEQ) regulations implementing NEPA allow the lead agency to invite any other federal, state, tribal, or local agency that has jurisdiction by law or special expertise with respect to any environmental issue which will be addressed by the NEPA analysis, to serve as cooperating agencies in the preparation of EISs (40 Code of Federal Regulations [CFR] Part 1501.6). Additionally, in accordance with the Federal Land Policy and Management Act (FLPMA), in the development and revision of land use plans, the BLM has an independent responsibility to coordinate with other units of government (43 United States

[1] Portions of the area managed under the 1987 RMP are not included in the 2015 Jarbidge RMP; therefore, the 1987 RMP still applies to these areas. Refer to Appendix F for details.

Code [U.S.C.] 1712(c)(9)). Current BLM planning regulations (43 CFR 1610) emphasize the importance of working with federal and state agencies and local and tribal governments during land use planning, in addition to and alongside cooperating agency involvement required in CEQ and U.S. Department of the Interior (DOI)regulations (43 CFR 46).

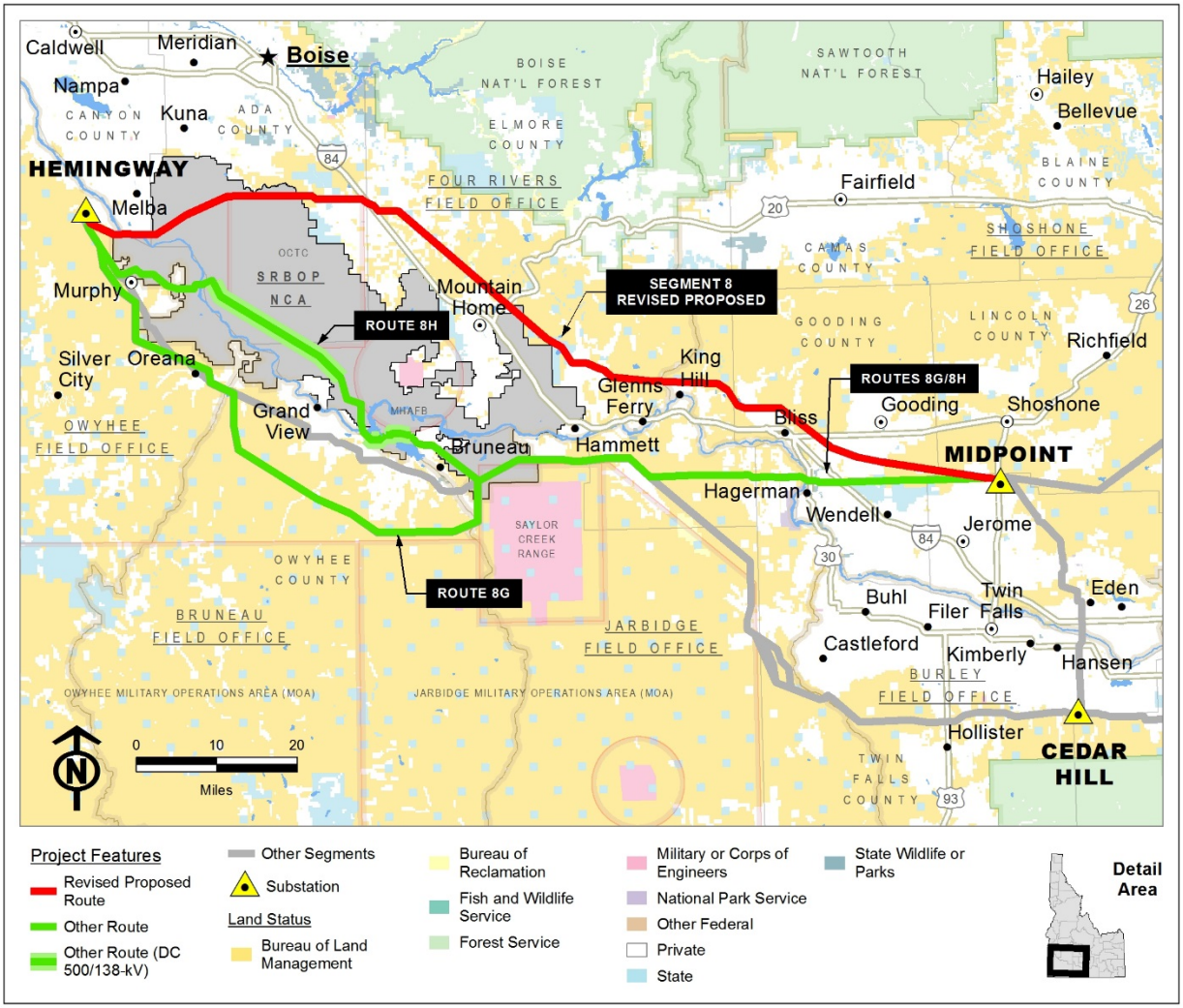


Figure 1.1-1a. Project Overview for Segment 8

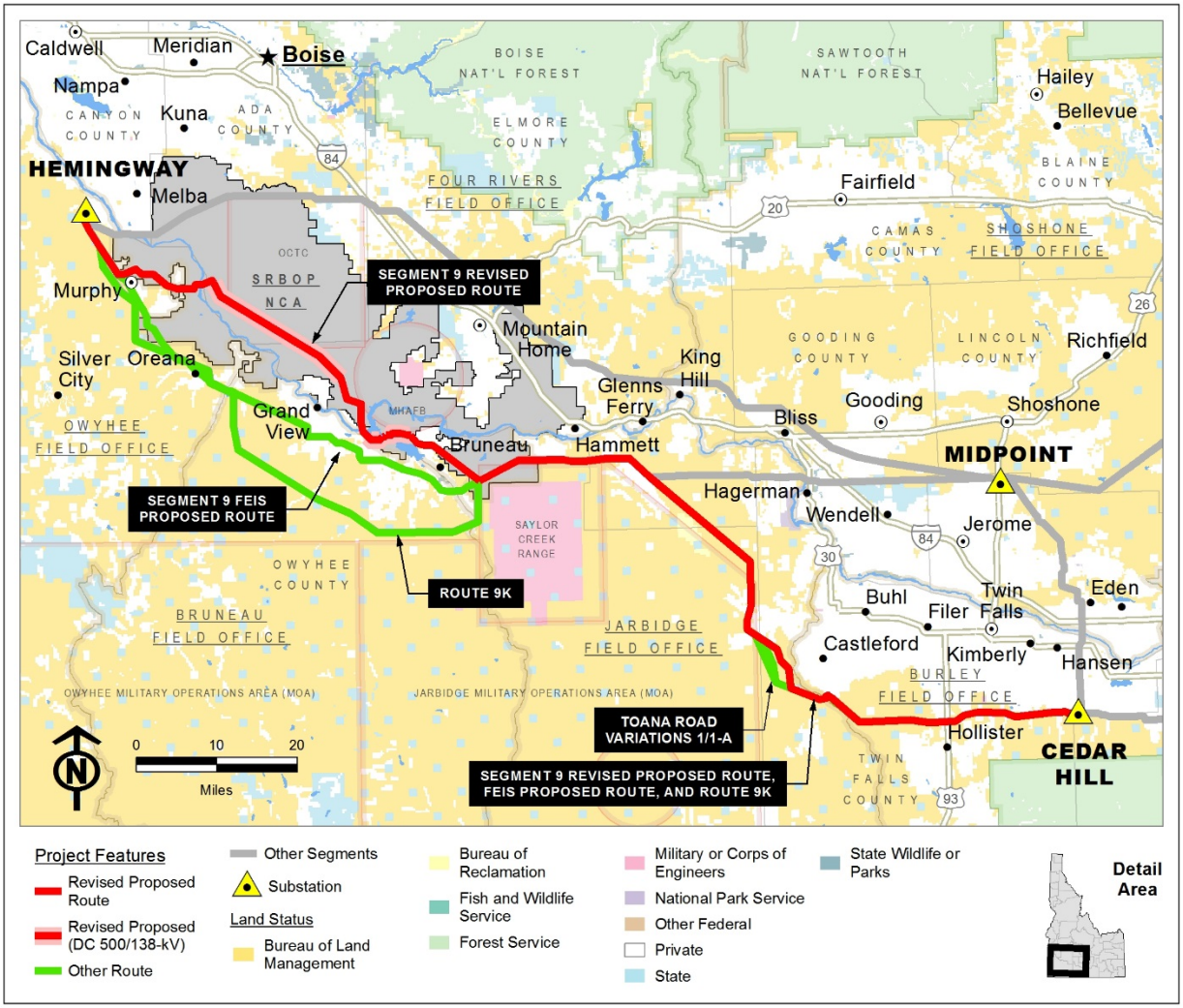


Figure 1.1-1b. Project Overview for Segment 9

1.1.1 Changes between Draft SEIS and Final SEIS

Numerous minor edits to the document were made between the Draft SEIS (DSEIS) and Final SEIS (FSEIS), many in response to comments by agencies and the public. These include corrections to the text, figures, and tables, as well as typographical errors. Changes to the document include:

- The Environmentally Preferred Alternative is identified in Chapter 2.
- The BLM's Preferred Alternative is identified in Chapter 2.
- The Mitigation Framework for the SRBOP was further developed (see Appendix K).
- Both RAC reports are included in Appendix H.
- Comments on the DSEIS and BLM's response to those comments are presented in Appendix L.
- A section on the SRBOP has been added to Chapter 3 of the FSEIS.

- Section 3.7 was updated to reflect that the USFWS reinstated threatened status for slickspot peppergrass under the Endangered Species Act (ESA) on August 17, 2016.
- The environmental protection measures (EPMs) approved in the 2013 ROD for the Gateway West Project have been included as Appendix M. References to Table 2.7-1 in the FEIS have been changed to refer to Appendix M in this FSEIS.
- Two new variations to Alternative 5 are analyzed: the Alternative 5 Helicopter-Assisted Construction Variation and the Alternative 5 West-wide Energy Corridor Variation (see Section 2.3.2.3). Both variations follow routes analyzed in the DSEIS and employ helicopter construction as discussed in the 2013 FEIS. Appendix B-2 provides information on helicopter-assisted construction methods.[2]
- Additional visual resource surveys and analysis were completed for the Hagerman area at the request of the Hagerman Fossil Beds National Monument staff (see Section 3.2 and Appendix E).
- Information on road construction and road improvement for the alternatives has been updated (see Section 3.19).
- Some EPMs state "on federal lands"; however, the Proponents have agreed to apply these measures to all lands in Idaho unless the landowner provides different direction (see Appendix M). This information has been added to the FSEIS to indicate that these EPMs are not limited to federally managed lands.

1.2 NEW INFORMATION DEVELOPED BETWEEN THE FEIS AND THE DSEIS

New information that became available between publication of the FEIS for this Project in April 2013 and the DSEIS in March 2016 includes the following:

- The Boise District RAC reviewed available information and local concerns and identified route options and design features for Segments 8 and 9.
- The Proponents submitted a revised application that adopted RAC-identified options as revised Proposed Routes for Segments 8 and 9.
- New routes and route variations have been developed, and the BLM has identified seven action alternatives based on the routes analyzed in this SEIS.
- The BLM has identified two Co-Preferred Alternatives for the Project.
- The Proponents submitted an MEP that offers mitigation and enhancement for resources and values found in the SRBOP.
- The Proponents revised the Proposed Action within the SRBOP in response to the new Western Electricity Coordinating Council (WECC) guidelines for spacing of transmission lines and route options evaluated by the RAC.

[2] NEPA Handbook Section 5.3.2 (BLM 2008c) states (emphasis added), "If a new alternative is added after the circulation of a draft EIS, **supplementation is not necessary if the new alternative lies within the spectrum of alternatives analyzed in the draft EIS or is a minor variation of an alternative analyzed in the draft EIS.** In such circumstances, the new alternative may be added in the final EIS."

- Public and agency comments on the Revised Proposed Action were received during the public scoping period
- BLM Manual 6280 direction for evaluating project impacts on National Historic Trails (NHT) was incorporated into the analysis.
- The BLM issued guidance on mitigation in a Regional Mitigation Manual (BLM 2013c) to implement Secretarial Order 3330 (October 31, 2013), Improving Mitigation Policies and Practices of the Department of the Interior.
- In October 2015, the DOI released Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015), which also implements landscape-scale mitigation for impacts from projects.
- On November 3, 2015, the BLM received the *Presidential Memorandum: Mitigating Impacts on Natural Development and Encouraging Related Private Investment* (80[215] *Federal Register* 68743).
- The BLM has developed a framework for identifying compensatory mitigation for unavoidable impacts to the resources and values in the SRBOP. The purpose of the BLM's compensatory mitigation framework for the SRBOP is to achieve a result that enhances resources and values identified in the SRBOP statute.
- The BLM issued a Revised RMP for the area managed under the Jarbidge Field Office.
- The BLM issued a ROD for Approving RMP Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, Utah.

1.2.1 Route Options from the Boise District Resource Advisory Council

In November 2013, the BLM requested the Boise District RAC to consider issues surrounding siting Segments 8 and 9 of Gateway West. The RAC, a citizen-based council chartered under Section 309 of FLPMA and the Federal Advisory Committee Act, advises and makes recommendations to the BLM on resource and public land management issues in southwestern Idaho. The RAC formed a subcommittee to examine options for resolving remaining issues associated with siting Segments 8 and 9. On June 5, 2014, the RAC submitted two reports to the BLM, one describing route options in the vicinity of the SRBOP and another evaluating resource considerations in the SRBOP and surrounding areas (see Appendix H).

1.2.2 Revised Proposal Routes for Segments 8 and 9

The Proponents submitted a revised Project Application for Segments 8 and 9 on August 7, 2014, in which they adopted the routes for Segments 8 and 9 that were recommended by a majority of the RAC Subcommittee. These routes differed from the Proposed Routes considered in the FEIS. Following is a brief description of the revised proposal; however, refer to Chapter 2 for a detailed description of these routes.

The revised Proposed Route for Segment 8 begins at the existing Midpoint Substation and continues west past the community of Mountain Home. It diverges from the Proposed Route considered in the FEIS near milepost (MP) 97.7, northwest of Mountain Home. The revised Proposed Route then parallels the existing 500-kV transmission line at a distance of 250 feet for the remaining distance (30 miles) into the Hemingway

Substation. Approximately 22.9 miles of the revised Proposed Route for Segment 8 would be within the SRBOP. Segment 8 of the Proposed Route considered in the FEIS was within the SRBOP for approximately 29.8 miles and, where it was adjacent to an existing line, separated by 1,500 feet.

The Revised Proposed Route for Segment 9 begins at the proposed Cedar Hill Substation and passes south of the communities of Twin Falls, Castleford, and Hammett. It diverges from the Proposed Route considered in the FEIS near MP 95.6, just east of the town of Bruneau. The revised route then follows the Route 9G alignment studied in detail in the FEIS to the Sinker Butte area, with the difference that the line would be placed on new structures along with the existing 138-kV line rather than 200 feet from that line as originally proposed. The line would turn west near Sinker Butte and continue into the Hemingway Substation. Approximately 53.8 miles of the Revised Proposed Route for Segment 9 would be within the SRBOP, whereas the Segment 9 Proposed Route considered in the FEIS was within the SRBOP for approximately 13.6 miles.

1.2.3 Summary of Routes, Variations, and Alternatives

As described in detail within Chapter 2, three routes not considered in the 2013 FEIS (i.e., 8G, 8H, and 9K) and two new route variations (i.e., Toana Road Variations 1 and 1-A) were considered within the DSEIS; in addition, the FEIS Proposed Route for Segment 9 (hereafter referred to as FEIS Proposed 9) was also considered in full within the DSEIS. In addition to these routes and variations, two new Alternative 5 Variations (the Helicopter-assisted Construction Variation and the West-wide Energy [WWE] Corridor Variation) are considered in this FSEIS.

Routes 8G, 8H, and 9K closely follow the versions of the Segment 8 and 9 routes that were analyzed in the FEIS, although in slightly different locations. Route 8G parallels the FEIS Route 8A before entering the Jarbidge Planning Area. At MP 36.6, it follows the FEIS Route 9B and then closely follows FEIS Route 9E to Birch Creek, after which it runs north toward Oreana and on to the Hemingway Substation. Route 9K generally follows the FEIS Preferred Route until approximately MP 96, at which point it follows FEIS Route 9E to Birch Creek and then runs north toward Oreana and on to the Hemingway Substation. Route 8H follows the same path as 8G until MP 44, where it then follows the Revised Proposed Route for Segment 9. Like the Revised Proposed Route, it would be double-circuited with the existing 138-kV line; therefore, both 8H and Revised Proposed 9 could not be selected together. The Toana Road Variations were recommended by the BLM Jarbidge Field Office to avoid paralleling the Toana Freight Wagon Road (a National Register historic site), and consist of a minor variation to the Segment 9 routes.

In addition to these three new routes, FEIS Proposed 9 is fully analyzed in the SEIS because this route is considered as part of three of the seven new BLM action alternatives discussed in Chapter 2 (and listed below). Note that the SEIS analysis of FEIS Proposed 9 takes into account new data and information that has become available since the publication of the FEIS (in order to utilize best available science); therefore, the quantitative impact values reported in the FEIS for this route may differ from those reported in this SEIS.

This SEIS identifies seven new action alternatives, each of which is a combination of one route from Segment 8 and one from Segment 9. In addition, the BLM has identified

one of the seven alternatives as the Preferred Alternative. The seven action alternatives, including the Preferred Alternative, are described in detail in Chapter 2. The rationale behind the identification of the BLM's Preferred Alternative is also provided in Chapter 2.

1.2.4 The Proponents' Draft Mitigation and Enhancement Portfolio

As required by the SRBOP enabling statute (P.L. 103-64), the "Secretary shall allow only such uses of lands in the conservation area as the Secretary determines will further the purposes for which the Conservation Area is established." The BLM must demonstrate that any proposed use within the SRBOP meets the purpose for which the SRBOP was established. Congress established the SRBOP in relevant part "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 3(a)(2) of P.L. 103-64 [1993]). The BLM, thus, must demonstrate that the proposed ROW for the transmission line that would use portions of the SRBOP would meet the established purposes, and enhance SRBOP resources and values.

The Proponents have developed an MEP (August 2014) aimed at offsetting impacts to resources and values and enhancing the resources and values found in the SRBOP (Appendix C). The Proponents' MEP includes both compensatory and enhancement components to address Project-related impacts on the SRBOP (note that the MEP is considered as a design feature of the proposal; see Chapter 2 for more details). The proposed compensatory measures are intended to address the effects that persist after standard avoidance, minimization, and mitigation measures have been implemented. The Proponents' intent for these measures is to return an impacted area to baseline conditions.

The Proponents' MEP includes enhancement measures such as 1) habitat restoration, 2) purchasing private inholdings within the SRBOP; 3) improved funding of law enforcement, 4) funding for visitor services, and 5) removal of existing powerlines within the SRBOP. In this SEIS, the BLM has reviewed this MEP for its compatibility with the purposes for establishing the SRBOP in the enabling statute (P.L. 103-64), its conformity with management objectives in the RMP, and to determine whether the proposed measures are sufficient to compensate for project-related impacts. An evaluation of the effects of these proposed measures is found in the applicable sections of Chapter 3.

1.2.5 WECC Policy for the Spacing of Electrical Lines

At the time the Project's DEIS was prepared (2011), the WECC guidelines required that high-voltage transmission lines be separated by at least "the longest span length of the two transmission circuits at the point of separation or 500 feet (whichever is greater) between the transmission circuits" (WECC 2008). The separation of transmission lines within a common corridor or lines serving the same load is measured between the center lines of the transmission lines. In the DEIS, the longest span length was assumed to be 1,500 feet, thereby dictating the minimum distance between existing and proposed transmission lines serving the same load.

In December 2011, the WECC and the WECC Board of Directors relaxed its regional transmission planning criterion to allow a minimum separation of 250 feet (or greater distance) from another transmission circuit. This change became effective in April 2012. "Adjacent transmission circuits" are defined as two transmission circuits with separation between their center lines less than 250 feet at the point of separation with no Bulk Electric System circuit between them, operating at 300 kV or higher and sharing a common ROW of 3 miles or farther (WECC 2013). Transmission circuits that cross, but are otherwise separated by 250 feet or more between their centerlines, are not considered Adjacent Transmission Circuits. The change in the NERC Reliability Standards and WECC System Performance Criteria allows the possibility of constructing two transmission circuits closer together than analyzed in the DEIS.

The Proponents reported to the RAC Subcommittee that, based on the changes in WECC guidelines described above, it was feasible to reduce separation of the proposed Segment 8 line where it would parallel an existing 500-kV line to a minimum 250 feet separation. In its final report, the RAC Subcommittee therefore recommended such a separation reduction wherever the Segments 8 and 9 routes would cross the SRBOP, and the Proponents have incorporated that recommendation into a 28.7-mile portion of the Revised Proposed Route for Segment 8.

The Proponents have also indicated that it would be feasible to "double circuit" portions of Segment 9 with existing 138-kV transmission lines (i.e., install the new 500-kV and existing 138-kV lines on the same tower structures, along Baja Road and in the C.J. Strike Reservoir, both in the SRBOP). Co-locating the 500-kV and 138-kV lines on the same structures (i.e., double circuiting) could reduce the physical and visual footprint of the new lines.

The current NERC Reliability Standards and WECC System Performance Criteria would allow for reduced separation between the proposed Segment 8 single-circuit 500-kV transmission line and the existing 500-kV Midpoint to Hemingway line, as well as the option of double circuiting portions of the lines along Baja Road and in the C.J. Strike Reservoir areas, are incorporated into this environmental analysis. Furthermore, the NERC standard and WECC criteria would allow the proposed transmission circuits for Segments 8 and 9 to be constructed in parallel with a reduced separation of 250 feet or greater distance apart, which is also incorporated into the environmental analysis.

1.2.6 Public Scoping

The purpose of public scoping is to determine relevant issues that will influence the scope of the environmental analysis. The BLM invited and provided for full public participation and comment on issues, potential impacts, mitigation measures, and alternatives associated with granting ROWs on public lands for Segments 8 and 9 that were not addressed in the original EIS. The scoping period began on September 19, 2014, and closed on October 24, 2014. During this period, four open house–style public meetings were held (in Boise on October 7, in Kuna on October 7, in Gooding on October 8, and in Murphy on October 9). Public input provided during the scoping process has been incorporated into this environmental analysis. See Section 1.9 for more details regarding public scoping.

1.2.7 BLM Manual 6280

BLM Manual 6280 provides policies for the management of National Scenic and Historic Trails. Specifically, this manual identifies requirements for the management of congressionally designated NHTs, trails undergoing a National Trail Feasibility Study; trails that are recommended as suitable for National Trail designation through the National Trail Feasibility Study; inventory, planning, management, and monitoring of designated National Scenic and Historic Trails; and data and records management requirements for National Scenic and Historic Trails. The manual also provides guidance on the application of NEPA to NHTs and Trails Under Study (BLM 2012a). See Section 1.5.2 for more details.

1.2.8 BLM Regional Mitigation Manual

The BLM recently issued guidance on mitigation in a Regional Mitigation Manual (BLM 2013c) to implement Secretarial Order 3330 (October 31, 2013). Information regarding the BLM's Regional Mitigation Manual is discussed in Section 1.5.3.

1.2.9 The BLM's Compensatory Mitigation Framework for Resources and Values in the SRBOP

The BLM developed the Compensatory Mitigation Framework (Appendix K) for determining the required compensatory mitigation for impacts to raptor populations and habitats and the natural and environmental resources and values associated therewith, and of the scientific, cultural, and educational resources and values in SRBOP. After avoidance and minimization are considered, this Framework would be used for any alternative selected for the Project to offset reasonably foreseeable remaining residual effects from the Project in SRBOP. The Framework is structured to ensure that raptor populations and habitats and the natural and environmental resources and values will be enhanced above baseline conditions and to ensure the scientific, cultural, and educational resources and values of the public lands in the conservation area are enhanced above baseline conditions to meet the requirements of P.L. 103-64.

1.2.10 Revised Jarbidge RMP

The BLM approved a new Jarbidge RMP in July 2015 (BLM 2015a). This new RMP revised the original 1987 Jarbidge RMP, but only applies to land within the current Jarbidge Field Office boundary. However, the planning area for the 1987 RMP included land within the adjacent Four Rivers Field Office. Therefore, the 1987 Jarbidge RMP (unrevised) still applies to these areas. Appendix F of this SEIS provides more detail regarding these and other applicable land use plans.

1.2.11 BLM ROD for RMP Amendments for the Great Basin Region

The BLM's ROD for the Great Basin Region RMP Amendments was finalized in 2015 (after the publication of the FEIS). This ROD affects, in part, habitat designations for the sage-grouse. More details regarding this new ROD, the new sage-grouse habitat designations, and how this affects the Gateway West SEIS are provided in Section 1.6.1. Although, this SEIS describes the various new sage-grouse habitat designations outlined in the Great Basin Region ROD, particularly as it applies to PHMAs and IHMAs, the Gateway West Transmission Project is exempted.

1.3 FEDERAL AGENCIES' PURPOSE AND NEED

The purpose and need of the federal action is to respond to the Proponents' ROW application to use federally managed lands for a portion of the Gateway West transmission line pursuant to FLPMA, 43 U.S.C. § 1701 *et seq.* In addition, per the requirements of the Clean Water Act[3] (CWA), the USACE must respond to an application for a permit to dredge or fill waters of the United States, including wetlands.

The purpose and need for major federal authorizing actions requested for the proposed Project to proceed are described in more detail below. Federal agencies use the Project's purpose and need to develop alternatives to the Proposed Action and make decisions. The information presented in Section 1.4 below describing the Proponents' objectives is provided for informational purposes only and does not frame the federal decision space.

1.3.1 BLM Purpose and Need

The BLM has received ROW applications from the Proponents and must determine whether to authorize the use of the National System of Public Lands for portions of Gateway West. In accordance with FLPMA and the BLM's ROW regulations, 43 CFR Part 2800, the BLM must manage public lands for multiple uses that take into account the long-term needs of future generations for renewable and non-renewable resources. The Secretary of the Interior is authorized to grant ROWs for "systems for generation, transmission, and distribution of electric energy over, upon, under, or through [public] lands" (43 U.S.C. § 1761(a)(5)). Taking into account the BLM's multiple use mandate, the BLM's purpose and need is to respond to an FLPMA ROW application submitted by Idaho Power Company and PacifiCorp to construct, operate, maintain, and decommission the Gateway West transmission line and associated infrastructure on public lands administered by the BLM in compliance with FLPMA, BLM ROW regulations, and other applicable federal laws and policies. In making its decision, the BLM must consider the environmental impact of granting a ROW across the National System of Public Lands.

The BLM must consider existing RMPs and MFPs in the decision to issue a ROW grant in accordance with 43 CFR 1610.0-5(b). RMPs and MFPs allocate public land resource use and establish management objectives. Applicable RMPs and MFPs are listed in Table 1.6-1. Portions of the proposed transmission line are not in conformance with several BLM land management plans, and therefore amendments to these plans are analyzed as part of this SEIS. In addition, the BLM must ensure that the authorized project would meet the requirements of the enabling statute for the SRBOP. The SEIS will use the SRBOP RMP as the framework for considering mitigation measures.

The BLM has prepared this SEIS to satisfy the requirements under NEPA, including facilitation of public participation. The BLM decisions to be made are to:

- decide whether to grant, grant with modifications, or deny all or part of the ROW application for the transmission line;
- decide if one or more BLM land use plans should be amended to allow the proposed transmission line;

[3] Clean Water Act of 1972, as amended, 33 U.S.C. § 1251

- determine the most appropriate location for the transmission line on the National System of Public Lands, considering multiple-use objectives; and
- determine the terms and conditions (stipulations) that should be applied to the construction, operation, and maintenance of the transmission line on the National System of Public Lands.

The BLM Idaho State Director is the agency official who will issue a decision on this application and, if necessary, any associated plan amendments.

The analysis in this SEIS addresses only the portions of the Project related to Segments 8 and 9. It incorporates by reference the analysis found in the 2013 FEIS regarding Project-wide impacts. The BLM is considering several factors, including the proposed construction schedule, other authorizing entities' potential routes, environmental effects of the analyzed routes, and opportunities to reach complementary siting decisions with other authorizing entities in deciding whether or not to authorize the Project on public land.

1.3.2 U.S. Army Corps of Engineers Decision

Authorization from the USACE is required for Project features that cross over, through, or under navigable waters as defined under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.). Navigable waters must be designated as such by the USACE Division Commander following procedures defined at 33 CFR Part 329. The Snake River is navigable up to river mile 445.5 near Noble Island. The Revised Proposed Route would cross the Snake River upstream of the navigable reach.

Authorization from the USACE is also required for any activity that results in discharges of dredged or fill material into waters of the United States as defined under Section 404 of the CWA (33 U.S.C. § 1344). The term "waters of the United States" has been broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce such as rivers, streams (including ephemeral streams), canals, reservoirs, lakes, and adjacent wetlands. The USACE Wetlands Delineation Manual dated January 1987 (USACE 1987) and its current supplements must be used to determine if an area has sufficient wetland characteristics to be a water of the United States.

Many activities with "minimal" impacts on waters of the United States can be authorized by general permits and the most common are nationwide permits. On February 21, 2012, the USACE published nationwide permits in the *Federal Register* (Vol. 77, No. 34). Nationwide permits provide authorization in accordance with Section 404(e) of the CWA. The permits are available for a period of 5 years, currently until March 18, 2017. Standard (Individual) permits are required for activities with more than minimal impacts on waters of the United States.

Individual permits authorize activities in accordance with Section 404(a) of the CWA. The permit evaluation must be conducted in accordance with Section 404(b)(1) of the CWA as specified in guidelines promulgated by the U.S. Environmental Protection Agency (USEPA; 40 CFR Part 230). No discharge shall be permitted if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant

adverse environmental consequences. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. In addition, where a discharge is proposed for a special aquatic site (wetland), all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

Reasonable alternatives as defined under NEPA and practicable alternatives as defined above are not necessarily synonymous because some reasonable alternatives may not be available to the Proponents. The BLM is the agency that must select the preferred alternative on federally managed lands. Executive Order (EO) 11990, promulgated in 1977 for the protection of wetlands, requires "each agency, to the extent permitted by law, [to] avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors (Section (2)(b)." Further, "[w]hen Federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way or disposal to non-Federal public or private parties, the Federal agency shall (a) reference in the conveyance those uses that are restricted under identified Federal, State or local wetlands regulations; and (b) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law; or (c) withhold such properties from disposal (Section 4)."

If the BLM's Preferred Alternative (see Chapter 2) is selected and approved in the ROD, it will reflect the agencies' full consideration of impacts to wetlands and all other resources. The ROD will then define the only alternative available to the Proponents for which a ROW could be granted on federally managed lands. The Proponents would be required to obtain a ROW on non-federal lands through negotiated easements or under eminent domain laws. Therefore, the ROW granted by the BLM, supplemented by acquisition of a congruent ROW that may be obtained by the Proponents, will define the only practicable alternative for the transmission line. However, it may be necessary for the USACE to evaluate alternatives for specific activities within the ROW such as tower locations and road alignments during the authorization process.

The USACE will determine whether authorization of proposed activities by nationwide permits is appropriate or whether certain activities require an individual permit evaluation. Evaluation of practicable alternatives is not applicable to nationwide permit authorizations as specified in 40 CFR Part 230.7(b)(1). However, mitigation measures in the form of avoidance, minimization, and compensation would be considered in all permit decisions. Verification by the USACE that activities are already authorized by nationwide permits is not a new federal action. The USACE would prepare a separate ROD for individual permit authorizations because issuance of a permit would be a new federal action.

1.4 PROPONENTS' OBJECTIVES FOR THE PROJECT

This section provides basic information about why the Proponents are proposing this Project and a description of the electrical transmission system needs that they believe would be met by the Project.

1.4.1 Proponents of the Project

1.4.1.1 PacifiCorp (Rocky Mountain Power)

PacifiCorp is an electric utility that transmits electricity via a grid of transmission lines located throughout a six-state region and a distribution system that serves more than 1.7 million retail customers. Rocky Mountain Power, a business unit of PacifiCorp, delivers electricity to approximately 1 million customers in Utah, Wyoming, and Idaho. As an essential service provider, Rocky Mountain Power is required to operate under the oversight and regulatory controls of the Public Service Commission of Utah, the Wyoming Public Service Commission, and the Idaho Public Utilities Commission (IPUC). As a public utility under the jurisdiction of the Federal Energy Regulatory Commission (FERC), PacifiCorp is obligated to expand its transmission system to provide requested firm transmission service and to construct and place in service sufficient capacity to reliably deliver resources to customers.

PacifiCorp's system peak-hour load is forecast to increase from 10,450 megawatts (MW) in 2011 to 12,609 MW in 2020, a 2.1 percent average annual growth rate. PacifiCorp's eastern system peak is expected to continue growing faster than its western system peak, with average annual growth rates of 2.4 percent and 1.4 percent respectively, over the forecast horizon. PacifiCorp's system-wide average customer load is also forecasted to grow at a 2.1 percent annual rate from 2011 to 2020, increasing from 63,131,000 megawatt-hours (MWh) in 2011 to 76,137,000 MWh in 2020. This average forecasted growth rate is moderately higher than the average growth rate experienced from 1995 to 2005 when the average increase per year was 1.6 percent. PacifiCorp's three highest state loads—Oregon, Utah, and Wyoming (included in the MWh loads above)—are forecasted to grow at a rate of 1.4 percent, 2.4 percent, and 2.9 percent, respectively, through the same 2011–2020 period (PacifiCorp 2011). The growth rate is reflective of all customer loads.

For additional details about PacifiCorp's service area and load projections, please see Section 1.3.1.2 of the FEIS. PacifiCorp's Attachment K of the Open Access Transmission Tariff (OATT) also requires planning for the expansion of the system to ensure that its transmission system meets industry, regulatory, and reliability standards.

1.4.1.2 Idaho Power

Idaho Power is a wholly owned subsidiary of IDACORP, a holding company. Idaho Power is responsible for providing electrical service to its service area, which includes most of southern Idaho and a portion of eastern Oregon. The number of customers in Idaho Power's service area is expected to increase from around 492,000 in 2010 to over 650,000 by 2030. Firm peak-hour load (the peak hourly electricity that the system must supply when demand is at its highest) has increased from 2,052 MW in 1990 to over 3,000 MW in 2006, 2007, 2008, and 2009. In June 2008, the peak-hour load reached 3,214 MW, which was a new system peak-hour record.

Average firm load (the average annual demand from customers) has increased from 10,500,000 MWh in 1990 to 15,800,000 MWh in 2008 (excluding Astaris/FMC) (IPC 2011a). While the economic downturn has affected customer demand for electricity in the near term, Idaho Power forecasts that on average their load will continue to grow at about 1.4 percent per year (an average of 29 MW annually) over the 20-year planning period. During the same 20-year planning period, the peak-hour load is expected to increase at 1.8 percent per year (69 MW annually) (IPC 2011a).

Idaho Power is a regulated public utility under the laws of the State of Idaho whose mission is to provide reliable, responsible, fair-priced energy. Idaho Power operates under the oversight and regulatory controls of the IPUC. Under Title 61 of the IPUC regulations, Idaho Power "shall furnish, provide and maintain such service, instrumentalities, equipment and facilities as shall promote the safety, health, comfort and convenience of its patrons, employees and the public, and shall be in all respects adequate, efficient, just and reasonable."

Idaho Power is also a public utility under the jurisdiction of the FERC. Idaho Power is obligated to expand its transmission system to provide requested firm transmission service, and to construct and place in service sufficient capacity to reliably deliver resources to network and native load customers as provided in their OATT under Sections 15.4 and 28.3 (FERC 2008). Idaho Power's OATT requires planning for the expansion of the transmission system to provide network integration transmission service that complies with regulatory reliability standards.

Idaho Power's 2011 Integrated Resource Plan (IRP) divides the 20-year planning horizon into two 10-year segments. The first 10-year period is analyzed first (2011-2020), followed by the second 10-year period (2021-2030). It is likely that Idaho Power customer needs would be largely met in the first 10-year period with the construction of the Boardman to Hemingway transmission line project (B2H) if that project is approved and constructed. For the second 10-year period, 10 resource portfolios were analyzed in the IRP, and some of these portfolios required Gateway West transmission capacity to deliver energy to major load centers in southern Idaho while others did not. The need for Gateway West capacity in each of these portfolios was driven by the assumed locations of the resources in each portfolio.

While the selected portfolio for the second 10-year period was marginally able to deliver energy to major load centers without additional transmission capacity across southern Idaho, many of the other portfolios analyzed did require additional transmission capacity. The selection of resources in the second 10-year period is largely an academic exercise, and is likely to change substantially every 2 years when the IRP is updated.

Idaho Power has reported (see Appendix B of the FEIS) that without adequate transmission capacity across southern Idaho, its ability to site future generation resources will be limited. The long lead time required to permit, design, and construct high-voltage transmission lines simply will not allow new transmission capacity to be built in conjunction with the construction schedule of a new generation resource. Therefore, Idaho Power believes it is prudent to continue to pursue additional transmission capacity across southern Idaho through Gateway West.

1.4.1.3 Team Constructional and Operational Responsibilities

Rocky Mountain Power and Idaho Power signed an agreement in 2007 to approach the permitting process for the Project as a team. That teaming agreement is still in place, though Rocky Mountain Power has taken the lead in the permitting effort since January 2012. Construction and operation of Segments 8 and 9 are still under discussion between the two Proponents as of December 2014.

1.4.2 Federal Oversight of Transmission Planning

The Proponents are subject to federal and state oversight and regulation for the planning, construction, operation, and maintenance of their energy transmission system. Under the FERC's authority, the Proponents are required to conduct transmission planning necessary to reliably serve their native load customers and conduct planning for third-party transmission service requests in compliance with their FERC-approved OATT. Procedures and processes for transmission planning for network customers and for third-party requests are documented in OATT Section III - Network Integration Transmission Service and subsections 28 through 33. Gateway West, as part of the larger Energy Gateway concept, has been developed, engineered, designed, and would be constructed (if approved) to reliably deliver designated network resources to network customer loads, both today and long term.

FERC Order 890 presently provides the transmission planning requirements for public utility transmission providers nationwide, including all public utility transmission providers within the WECC. Through Order 890, FERC requires that transmission providers participate in local planning processes as well as sub-regional and regional planning processes. PacifiCorp and Idaho Power both participate in the Northern Tier Transmission Group (NTTG), which is a sub-regional planning group comprising transmission providers and customers. PacifiCorp and Idaho Power are also active in WECC regional transmission planning committees and studies.

FERC issued Order 1000 in July 2011 with the requirement that public utility transmission providers make compliance filings on most of the issues by October 2012. NTTG members are in the process of identifying and modifying the existing compliance filings to address the requirements of Order 1000; however, it is believed that the transmission planning process under the Order 1000 requirements will remain largely unchanged from the Order 890 requirements within the NTTG footprint. NTTG's current planning process evaluates the reliability of the transmission system 10 years into the future. Each load serving entity provides 10-year projections for load and generation. The load and resource projections serve as the basis for analysis. The adequacy of the existing transmission system is evaluated for the future projections. The adequacy of the future transmission system is then evaluated for various seasonal demand and generation scenarios with proposed transmission improvements.

An Order 1000 modification of note, as differentiated from Order 890 requirements, is that the NTTG regional transmission plan must identify transmission facilities that "more efficiently or cost-effectively" meet the region's reliability, economic and Public Policy Requirements. In other words, a project's relative benefit and cost will now be analyzed as part of the transmission planning process, and the transmission plan (a single plan) will be a compilation of proposed projects that most "efficiently and cost-effectively" meet a region's needs.

Gateway West is one of the projects in the 2011 NTTG Biennial Transmission Plan included in the 2012-2013 NTTG regional planning process. The transmission planning process evaluates the efficiency and cost effectiveness of projects within the plan and consider any proposed alternatives that may address regional needs more efficiently or cost effectively than the projects proposed by the transmission providers in local transmission plans.

FERC granted the PacifiCorp incentive rate treatment and the Commission issued a 4-0 decision in which FERC stated:

> *…we find that PacifiCorp has adequately demonstrated that the Project (with the exception of segment A) will ensure reliability and reduce transmission congestion… We find that segments B through H of the Project[4] would establish for the first time a backbone of 500 kV transmission lines in PacifiCorp's Wyoming, Idaho and Utah regions. This would provide a platform for integrating and coordinating future regional and sub-regional electric transmission projects being considered in the Pacific Northwest and the Intermountain West, connection existing and potential generation to loads in an efficient manner, thus reducing the cost of delivered power. Also, the Petition cites the 2006 DOE National Electric Transmission Congestion Study and the 2004 Rocky Mountain Area Transmission Study in stating that that proposed Project will reduce congestion or maintain reliability in the Western Interconnection. Additionally, the project would establish a direct link between PacifiCorp's east and west control areas, providing numerous benefits including increasing transfer capability, reducing the need for curtailments, and reducing transmission congestion.*

The WECC 10-Year Regional Transmission Plan was approved by the WECC Board of Directors September 22, 2011, and a Plan Summary can be found at: *http://www.wecc.biz/library/StudyReport/Documents/Plan_Summary.pdf*. Energy Gateway, including Gateway West, is an integral part of the Foundational Transmission Project identified for the Regional Plan as shown in Section 3.2.3, Transmission. Independent stakeholders involved in data input, development, and review of the plan are identified in Section 6, Organizations Involved in Development of the Plan.

1.4.2.1 WECC Path Rating Review Process

The WECC has a three-phase process for rating proposed transmission projects. The rating process enables project sponsors to attain a WECC "Accepted Rating" and demonstrate how their projects will meet North American Electrical Reliability Corporation (NERC) and WECC planning standards. The rating process addresses planned new facility additions and upgrades and the re-rating of existing facilities. It includes coordination through a review group made up of the project sponsors and representatives of other systems that may be affected by the project.

Phase 1 begins when the project sponsor submits a progress report to the WECC or when WECC's Planning Coordination Committee and Technical Studies Subcommittee receive a formal letter of notification. It is the project sponsor's responsibility during Phase 1 to conduct sufficient studies to demonstrate the proposed non-simultaneous rating of the project. The project sponsor must also prepare a "Comprehensive Progress Report" that documents study results and describes project details. This report must also identify known simultaneous relationships between the proposed

[4] Segment D in the FERC decision refers to Gateway West Segments 1 to 4 and Segment E refers to Gateway West Segments 5 to10.

project and existing facilities. When the WECC accepts the project sponsor's comprehensive progress report, the project is granted a "Planned Rating."

In Phase 2 of the Rating Process, interested WECC members form a "Project Review Group" to evaluate the project's plan of service. When the appropriate committee or subcommittee of the WECC accepts the Project Review Group Phase 2 Rating report, Phase 2 is complete and the project is granted an "Accepted Rating." An accepted rating affords the project sponsor some protection against erosion of established capacity for its rated facilities as further expansion of the interconnection occurs or new limitations are discovered.

Phase 3 is the last part of the Rating Process. During Phase 3, WECC members and staff monitor the project and evaluate major changes in assumptions and conditions to enable the project to maintain its Accepted Rating. Phase 3 is complete when the project is placed into service.

The WECC path rating review is the foundation for determining Total Transmission Capability for transmission facilities in the Western Interconnection. WECC's approach for rating facilities, determining Total Transmission Capability, and calculating Available Transfer Capability are all intended to fully comply with applicable NERC, WECC, and FERC rules.

1.4.3 State Regulation of Transmission

Idaho has approved regulatory processes in place to review and determine the prudence and usefulness of any investment made on behalf of the Proponents' customers. Approval of investments occurs in the following two steps.

1. Each company files for a Certificate of Public Convenience and Necessity in the states physically impacted by the investment. This process determines that an investment proposed by the Proponents is in the public interest and is necessary to provide safe, adequate, and reliable electric service. The Proponents will initiate this process when the BLM publishes the Final SEIS.

2. The Proponents file for cost recovery of an investment through a rate case. This step occurs after the investment is made and the respective project is constructed and placed in service. This review focuses on prudence of project alternative selection, cost control, customer benefits, and usefulness of the facilities resulting from the investment. Funds expended in advance of this prudency review and rate change approval by Idaho are "at risk" as transmission projects are rarely "preapproved" by the states before they are initiated.

In support of this two-step process, the Proponents engage in a series of regional activities to inform commissions and stakeholders about its projects, their objectives, and investment requirements. The IRPs are examples of this informational process. As regulated utilities, both Idaho Power and Rocky Mountain Power are required to produce and periodically update an IRP for each state in which they operate. The Public Utilities Commissions of the states where these utilities operate review and acknowledge these IRPs and their updates.

The Project will also need to comply with Title 67, Chapter 65 of the Idaho Code (i.e., the Land Use Planning Act), which gives the State and counties siting authority on non-federal lands.

1.4.4 Demand-Side Management

Part of the planning process that results in the IRPs and their updates includes addressing conservation and other means of reducing or controlling the growth of the demand for electricity among the utilities' customers. When the Public Utilities Commission for a given state acknowledges the IRP, it is agreeing that the balance of demand-side measures and development of additional generation resources, including associated transmission, is appropriate to meet the needs of the customers of its state while complying with the various laws and regulations on renewable energy requirements, carbon emissions, and other energy-related issues.

The Proponents have detailed their demand-side management in their respective IRPs, which have been acknowledged by the Public Utilities Commissions for which they were written (PacifiCorp 2011; IPC 2011a).

1.4.5 Existing Transmission System Reliability Constraints

Transmission systems in the United States must be planned, operated, and maintained under the NERC[5] reliability performance standards. These mandatory national standards govern the level of performance and reliability of the Bulk Electric System operated within the United States. Additionally, the Proponents state that they are governed by the WECC[6] policy procedures, criteria, and standards that may be more stringent than those required by the NERC. In compliance with the above standards, transmission systems must be planned, designed, built, and continually operated with sufficient levels of redundancy to enable the transmission system to reliably operate in the event of the loss of any single element (i.e., generation unit, transmission line segment or substation equipment) or loss of multiple elements, thereby providing adequate service to customers and to other interconnected utilities. Adding new transmission facilities to a network provides not only new transmission capacity but also levels of backup to each other during outage conditions when elements of the system are taken out of service during both planned and unplanned events.

Transmission paths consist of single lines or combinations of lines operated together as a single transmission unit to maximize capacity of the system and to maintain reliability.

In siting new transmission facilities, the Proponents state that they are obliged to be prudent and site and install facilities to avoid a potential "common mode failure" (i.e., lines

[5] The NERC's mission is to improve the reliability and security of the bulk power system in North America. To achieve that, NERC develops and enforces reliability standards; monitors the bulk power system; assesses future adequacy; audits owners, operators, and users for preparedness; and educates and trains industry personnel. NERC is a self-regulatory organization that relies on the diverse and collective expertise of industry participants. As the Electric Reliability Organization, NERC is subject to audit by the FERC and governmental authorities in Canada (NERC 2012).

[6] The WECC and the nine other regional reliability councils were formed due to national concern regarding the reliability of the interconnected bulk power systems, the ability to operate these systems without widespread failures in electric service, and the need to foster the preservation of reliability through a formal organization. The Western Interconnection encompasses a vast area of nearly 1.8 million square miles. It is the largest and most diverse of the eight regional councils of the NERC. WECC's territory extends from Canada to Mexico. It includes the provinces of Alberta and British Columbia, the northern portion of Baja California, Mexico, and all or portions of the 14 western states in between (WECC 2011).

adjacent to each other on a common transmission tower or two parallel transmission lines in close proximity to each other failing together). Common mode failures include, but are not limited to, a snagged shield wire from one line being dragged into the adjacent line, an aircraft flying into more than one line, smoke from a fire across the ROW shorting out more than one line, lightning strikes affecting more than one line, high winds, dust storms, ice storms, blizzards, landslides, earthquakes, vandalism, and equipment failure.

As a minimum requirement, the NERC/WECC reliability performance standards require that a multiple contingency analysis (an analysis of the simultaneous failure of two lines) must be performed to evaluate the impact resulting from the loss of multiple transmission lines to the remaining transmission system. The power flowing on the two transmission lines removed from service must now flow across the remaining transmission system and may subsequently overload portions of the remaining system. In this event, the useable system capacity limit is reduced to protect the remaining system from this overload or unstable condition.

When transmission lines are separated from each other, common mode failures pose a significantly reduced risk and the NERC/WECC reliability standards only require evaluation of one line out of service at a time. Constructing transmission lines physically separated from each other allows the Proponents to operate their interconnected electric system at a higher electrical capacity than would otherwise be possible. The Proponents state that the net result of line separation is that fewer transmission lines are needed overall to adequately serve customers' energy needs. Due to the high transfer capacity requirements necessary for Gateway West, high-capacity lines must be located on separate corridors to increase reliability and to provide the highest capacity possible.

Due to questions that have surfaced concerning common mode failure of transmission lines constructed adjacent to other transmission lines, the WECC Board of Directors approved a regional transmission planning criterion (TPL [001-004]-WECC-1-CR), on April 18, 2008. This planning criterion specifies that utilities must plan for two lines to be out of service at the same time if they are located adjacent to each other unless those lines are separated by at least "the longest span length of the two transmission circuits at the point of separation or 500 feet, whichever is greater, between the transmission circuits" (WECC 2008).[7] This criterion has subsequently been revised, but the initial siting study for Gateway West was based on this criterion.

The Proponents report that the recent WECC revision of this criterion affects only one of many criteria that need to be considered when planning transmission projects. Specifically, WECC has relaxed its definition of a common corridor from the greatest span or 500 feet from an existing line to a minimum of 250 feet from an existing line. The remaining criteria still obligate a transmission provider to take into consideration the potential impacts to reliability. As a result, the RAC Subcommittee recommended a separation reduction across the SRBOP, and the Proponents have reduced the separation of the Project from existing lines to approximately 250 feet along 28.7-mile portion of the proposed route for Segment 8.

[7] A transmission "circuit" is a set of wires energized at transmission voltages extending beyond a substation which has its own protection zone and set of breakers for isolation, and the "span length" is the distance between two transmission line support structures. See also Glossary (Chapter 6 of this FSEIS).

Even though the WECC separation criterion has been revised, the WECC/NERC requirements to provide reliable electricity have remained the same. Acts of nature such as fires or micro bursts or other acts such as vandalism or required fire suppression management may impact the reliability of the bulk transmission system if lines are sited in close proximity. Common corridor outages, in particular outages caused by smoke and fire, are prevalent through the open areas along the Project. During the drier parts of the year, fires can ignite and move extremely fast. When heavy smoke rises to the level of the conductors, the air between the conductors loses some of its insulation properties, and the conductor will begin to conduct electricity to ground, or "fault"; protective instrumentation will disconnect the transmission line from the electrical system. If the Gateway West transmission lines are constructed close to other transmission lines and the two lines disconnect in rapid succession, the Proponents state that major problems may result for the electrical grid, potentially leading to wide-spread outages (area blackouts).

There have been numerous occurrences of fire, wind, geological, and other related corridor outages. If a major event did occur, preparation for a future similar outage would likely be mandated. The first step toward preparing for a similar occurrence would be to reduce the rating and capacity of the facilities, resulting in a project that is vastly inferior to the purpose and need. For example, following the WECC west-wide disturbance in 1996, PacifiCorp was required to make a significant reduction in transmission system capacity ratings on its WECC rated Path C between southeast Idaho and northern Utah. A significant system capacity reduction, from 1,000 MW to 600 MW, was a direct result of the disturbance investigation by WECC, to reduce the stress on the system and gain more reliability. As a result, PacifiCorp constructed the Populus to Terminal transmission line to restore reliability. The Proponents believe the first step to avoid a common corridor outage is to locate the lines as far apart as feasibly possible, without creating additional undue impact to the environment and surrounding areas. The Proponents state that forcing Gateway West into close proximity to other lines undermines the overall purpose and need of the Project.

The Proponents report several instances where outages on their systems and others have led to serious consequences. In 2007, a fire burned through the Jim Bridger transmission line ROW resulting in an outage of all three 345-kV lines and three of the four Jim Bridger generating units (Gerrard 2010). Also in 2007, a fire caused the Mona – Huntington and Mona – Bonanza 345-kV lines in Central Utah to de-energize (Gerrard 2010). In California, two adjacent 500-kV line transmission structures failed in 2005, leaving an estimated 5.2 million customers in California, Nevada, Oregon, and Texas without power (California ISO Corporation 2005).

1.4.6 Purpose of the Gateway West Proposed Action

The Bonneville Power Administration (BPA) supplies wholesale power to six utilities (two towns and four rural cooperatives) in Southeast Idaho. Until recently, a portion of that power has come from PacifiCorp and a portion from BPA's hydroelectric facilities. PacifiCorp has given BPA a 5-year notice that it will no longer supply power under the old agreement. Therefore, by 2016, BPA must come up with another source of power for its six small utility clients in Southeast Idaho. As a part of future planning, BPA has entered into an agreement with PacifiCorp and Idaho Power to help fund the permitting of B2H and to consider the possibility of asset swaps in the future.

BPA is considering five alternatives to provide that power:

- Power purchase with OATT Service
- B2H with OATT service
- B2H with transmission asset swaps
- Two BPA construction scenarios from Montana to Southeast Idaho

The second alternative depends upon the capacity of Gateway West through Idaho as well as on the completion of B2H. The other options do not depend upon the completion of Gateway West. BPA conducted a public comment period on these options that closed August 27, 2012. In October 2012, the BPA announced that it had selected the "BPA with transmission asset swaps" as its top priority for pursuit (BPA 2012a). BPA must still conduct a NEPA analysis on its options to supply power to its Southeast Idaho customers (BPA 2012b).

Gateway West is independent of, and would be built regardless of, any particular new generation project. The transmission grid of which it would become a part can be thought of in terms of hub and spokes, with a backbone connecting to the hubs. Each substation is a hub and receives or sends electricity along the spokes. For this system to work, a backbone of high-capacity transmission lines is needed to connect the hubs and transport the electricity from where it is or can be generated, to where it is needed.

Segments 8 and 9 would provide two separate paths connecting the Midpoint and Hemingway Substations. This link would improve the Proponents' ability to move power both east and west into their service areas in Idaho and Oregon.

1.4.6.1 Substations

The overall Project (including all 10 segments) would connect 12 substations, which are essential control points for the route. Three of these substations would be located along Segments 8 and 9, and are discussed in this SEIS. The purposes of these substations are listed in Table 1.4-1. Two of the substations along Segments 8 and 9 are in service now, while one is associated with the segments approved in the 2013 Gateway West ROD.

Table 1.4-1. Substations That Would Be Connected by Segments 8 and 9 of Gateway West

Substation	Description	Purpose
Midpoint	Existing: interconnection and load-driven	The substation expansion would allow interconnection of new transmission lines from Cedar Hill and Hemingway and allow for the existing 345-kV transmission line between Borah and Midpoint Substations to be energized at 500 kV, thereby creating a continuous 500-kV system expansion and reliability tie with the Cedar Hill Substation.
Cedar Hill	To be built for Gateway West Segments 7 and 10, load-driven	The substation would serve two purposes: 1) a reliability tie between the proposed Gateway West north and south transmission lines, and 2) a 500-kV to 230-kV transformation station for serving the Magic Valley load. This would complement the existing service from Midpoint to the north of the Magic Valley. The Magic Valley Electrical Plan is under development, with this station being considered as a future source to the valley.
Hemingway	Existing; interconnection and load-driven	The substation expansion would serve as an interconnection point for the Gateway West, Summer Lake, Boardman, and Captain Jack transmission lines. The station itself currently serves the Treasure Valley load. The station is the southwestern 500-kV to 230-kV transformation point in the Treasure Valley 500-kV loop, as defined in the Treasure Valley Electrical Plan. The Hemingway Substation is the western terminus of Gateway West because it is the major load point for generation resources brought in from the east, primarily Wyoming.

1.4.6.2 Gateway West Transmission Line Segment Purposes

Table 1.4-2 summarizes the purpose for Segments 8 and 9 of Gateway West. Each segment's Project description is presented in detail in Chapter 2.

Table 1.4-2. Gateway West Transmission Line Segments

Transmission Line Segment	Purpose
Segment 8—Midpoint to Hemingway, single-circuit 500-kV line	Transport existing and new energy resources to load demand centers throughout the system. Provide physical separation to meet reliability criteria between a northern route (Populus – Borah – Midpoint – Hemingway) and a southern route (Populus – Cedar Hill – Hemingway). Physical separation is needed due to existing transmission line congestion (multiple lines in the same area) and wildland fires resulting in outages.
Segment 9—Cedar Hill to Hemingway, single-circuit 500-kV line	Transport energy resources to serve load demand centers throughout the system. Provide physical separation to meet reliability criteria between a northern route (Midpoint – Hemingway) and a southern route (Cedar Hill – Hemingway). Physical separation is needed due to existing transmission line congestion (multiple lines in the same area) and wildland fires resulting in outages.

1.5 AUTHORIZING LAWS AND REGULATIONS

1.5.1 Overview

Table 1.5-1 lists the major federal, state, and local permits, approvals, and consultations identified for the construction and operations of the portion of the Gateway West Project along Segments 8 and 9. The Proponents would be responsible for obtaining all permits and approvals required to implement the proposed Project regardless of whether they appear in this table.

Table 1.5-1. Major Permits, Approvals, and Consultations for the Gateway West Transmission Line Project

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
Federal		
Advisory Council on Historic Preservation	Section 106 Consultation, National Historic Preservation Act (NHPA)	Has the opportunity to comment if the Project may affect cultural resources that are either listed on or eligible for listing on the National Register of Historic Places (NRHP).
U.S. Department of Defense, Army Corps of Engineers (USACE), Omaha District, Walla Walla District	Section 10, Rivers and Harbors Act Permit	Consider issuance of a Section 10 permit for construction across the Snake River.
	Section 404, Clean Water Act Permit	Consider issuance of a Section 404 permit for the placement of dredge or fill material into all waters of the United States, including wetlands.
U.S. Department of the Interior, Bureau of Land Management (BLM)	Antiquities and Cultural Resource Use Permit	Consider issuance of antiquities and cultural resources use permit to conduct surveys and to excavate or remove cultural resources on federal lands.
	Various Resource Management Plans	Consider amending the plans.
	ROW Grant	Consider issuing long-term ROW grant for operations and maintenance of those portions of the Project that would encroach on the National System of Public Lands, including easements across federally owned waterways.

Table 1.5-1. Major Permits, Approvals, and Consultations for the Gateway West Transmission Line Project (continued)

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
BLM (continued)	Short-Term ROW Grant	Consider issuance of a short-term ROW grant for temporary activities in the construction ROW, on lands leading into the ROW, and associated areas such as staging areas that are within the National System of Public Lands.
	Plan of Development (POD)	Consider approval of detailed POD.
	Notice to Proceed	Following issuance of a ROW grant and approval of a POD, consider issuance of a Notice to Proceed with Project development and mitigation activities.
	Public Law 103-64, Snake River Birds of Prey National Conservation Area Act, Sections 3(a)(2) and 4(a)(2)	Determine that any use authorization in the SRBOP furthers the purposes for which it was established, including "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."
U.S. Department of Transportation, Federal Highway Administration	Encroachment Permit	Consider issuance of permit for transmission line crossing of federally funded highways (typically delegated to the state department of transportation).
U.S. Environmental Protection Agency, Region 10	Section 401, Clean Water Act (CWA) Water Quality Certification	In conjunction with states, consider issuance of water use and crossing permits.
	Section 402, CWA, National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity for Idaho	Review and issue NPDES permit for discharge of stormwater in Idaho.
	Section 404, CWA	Review CWA, Section 404 applications for dredge-and-fill applications for the USACE with 404(c) veto power for permits issued by the USACE.
U.S. Fish and Wildlife Service (USFWS), Region 1	Section 7 Consultation, Biological Opinion (Endangered Species Act)	Consider lead agency finding of impact on federally listed or proposed species. Provide Biological Opinion if the Project is likely to adversely affect federally listed or candidate species or their habitats.
	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to fish and wildlife resources.
	Migratory Bird Treaty Act	Provide comments for the protection of migratory birds.
	Bald and Golden Eagle Protection Act	Provide comments for the protection of eagles.

Table 1.5-1. Major Permits, Approvals, and Consultations for the Gateway West Transmission Line Project (continued)

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
USFWS (Refuge Division)	Compatibility Determination	Provide concurrence for the BLM to issue a ROW grant covering USFWS fee lands within National Wildlife Refuges (no fee lands presently crossed by proposed or alternative routes as of July 2011).
State		
Idaho Department of Environmental Quality	Fugitive Dust Control Plan	Consider measures to control fugitive dust emissions at each construction site.
	Section 401, CWA, Water Quality Certification	Consider certification of a 404 permit issued by the USACE as consistent with state law and Section 401.
Idaho Department of Transportation	Encroachment Permit	Consider issuance of permit to cross or bore under state highways or be within a state highway ROW.
Idaho Public Utilities Commission	Certificate of Public Convenience and Necessity	Consider issuance of a certificate to allow construction of a public utility, including transmission lines
Idaho State Historic Preservation Office	Section 106 Consultation, NHPA	Consult with the BLM, the Proponents, other land management agencies, and others regarding activities potentially affecting cultural resources.
Idaho Department of Lands	Lease on Endowment Trust Lands	Consider issuance of easements across state lands.
Idaho Department of Fish and Game	Potential Project Impacts to Fish and Wildlife Species and Their Habitat	Coordinate with the BLM and USFWS on wildlife issues/impacts associated with the Project.
Idaho Department of Water Resources	Stream Channel Alteration Permit and Wetland Removal Fill Permit (IC Title 42 Chapter 38)	Consider alteration of any stream channel or wetland.
Various (may also require federal and local approvals)	Explosives Permit	Consider issuance of a license to store and use explosives.
Local and County		
County Commissioners	Conditional Use Permits	Consider issuance of conditional use permits for construction of transmission line and substations (varies by county).
Planning Department	Temporary Use Permit, Grading Permit	Consider issuance of a building permit or a Temporary Use Permit for material and contractor yards and a grading permit for noxious weed control coordination.
Public Works Department	Encroachment Permit	Consider issuance of an encroachment permit for new access roads where they intersect with existing county roads.
	Road Crossing Permit, Road Maintenance Agreement	Consider issuance of road crossing permit and road maintenance agreement for overhead transmission line.
City of Kuna, Idaho	Variance and special use permits	Consider issuance of a variety of exceptions to existing land use plans, zones, etc.

1.5.2 Regulatory Framework

Chapter 3 of the FEIS addressed the regulatory framework of the Project, by resource, in the Affected Environment subsection of each environmental resource section. The following subsections address new regulations that have been implemented or changed

since the publication of the FEIS, or regulations that were not described in detail in the FEIS. All other regulations that have been unchanged or whose changes did not affect the Gateway West Project are included in this document by reference to the FEIS. Additional details regarding federal policies, plans, and programs are discussed in Section 1.6.

1.5.2.1 National Trails System Act

The National Trails Systems Act (NTSA) of 1968, as amended, established a network of scenic, 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. According to the NTSA of 1968, the Secretary charged with administration of the NHT may permit other uses along the trail provided that they do not "substantially interfere with the nature and purpose of the trail" (16 U.S.C. § 1246). In this regard, "reasonable efforts shall be made to provide sufficient access opportunities to such trails and, to the extent practicable, efforts shall be made to avoid activities incompatible with the purposes for which such trails were established" (16 U.S.C. § 1246). Easements or ROWs granted by the Secretary of the Interior or Secretary of Agriculture must comply with laws applicable to the national park system and national forest system, and conditions established in the easements or ROWs must reflect the policy and purposes of the NTSA (16 U.S.C. § 1248).

The Project may directly or indirectly impact segments of the Oregon NHT, NHT-associated resources, and the North Alternate Study Trail present within the Analysis Area (see Section 3.1.5.2 for impacts analysis). NHTs, which are authorized and designated only by an act of Congress, commemorate historically significant routes (i.e., historic routes of exploration, migration, trade, communication, and military action) whose location is known sufficiently to permit public recreation and historical interest (NPS 2013). To be designated by Congress, NHTs must follow as closely as possible the actual route of historic use, be of national significance, and have significant potential for public recreation and/or interpretation opportunities (16 U.S.C. § 1242).

1.5.2.2 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 300101 *et seq.*) requires that the federal agency permitting the undertaking "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register" and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Effect is defined in the implementing regulations for Section 106 (36 CFR 800.16(i)) as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register."

As a historic property listed on the National Register of Historic Places (NRHP), the Oregon NHT requires evaluation of effect under Section 106. Segments and sites associated with the trail located in the direct and indirect area of potential effects established for the Project will be assessed through a cultural resources inventory associated with the Section 106 process, and effects will be determined in consultation with tribes and parties to the Project Programmatic Agreement (PA). A PA for the

Gateway West Project was executed in conjunction with the 2013 ROD. The PA applies to all segments of the Project, including Segments 8 and 9.

This section draws upon the NRHP eligibility assessments of segments through previous documentation; fieldwork performed in conjunction with the inventory and analysis did not reevaluate the NRHP eligibility of previously documented trail segments and sites. BLM Manual 6280 requires the BLM to consider how the proposed action would affect designated NHT properties, including "remnants and artifacts from the associated period of use that may be eligible or listed on the National Register" (BLM 2012a). The BLM, therefore, is required to coordinate the analysis of cultural resources associated with the Oregon NHT and North Alternate Study Trail with the Manual 6280 Inventory and Impacts Analysis. While the Manual 6280 Inventory and Impacts Analysis covers Project impacts to segments of the Oregon NHT and North Alternate Study Trail on BLM-managed land, 36 CFR Part 800 requires the BLM to consider a more comprehensive assessment of Project impacts to NRHP-eligible segments of these two trails on both federal and non-federal lands.

1.5.2.3 Federal Land Policy and Management Act

FLPMA (P.L. 94-579, Section 102(a)) states that it is the policy of the United States that: "(7) …management be on the basis of multiple use and sustained yield unless otherwise specified by law; [and] (8) the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." FLPMA in Section 302(b) states that in "managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."

The SRBOP was established in 1993 "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 public lands in the conservation area" (P.L. 103-94, Section 3(a)(2)).

1.5.2.4 Manual 6220—National Monuments, National Conservation Areas, and Similar Designations

Manual 6220 provides guidance on managing BLM-managed public lands that are components of the BLM's National Landscape Conservation System (NLCS) and that have been designated by Congress or the President as National Monuments, NCAs, and similar designations. This designation includes the SRBOP. National program policies that are generally applicable to BLM-managed public lands apply to NLCS components to the extent that they are consistent with the designating proclamation or legislation, other applicable law, and BLM policy.

The BLM's objectives in implementing this policy are to:

- Comply with designating Acts of Congress and presidential proclamations by conserving, protecting, and restoring the objects and values for which Monuments and NCAs were designated for the benefit of present and future generations.

- Effectively manage valid existing rights and compatible uses within Monuments and NCAs.
- Manage discretionary uses within Monuments and NCAs to ensure the protection of the objects and values for which the Monuments and NCAs were designated.
- Utilize science, local knowledge, partnerships, and volunteers to effectively manage Monuments and NCAs.
- Provide appropriate recreational opportunities, education, interpretation, and visitor services to enhance the public's understanding and enjoyment of the Monuments and NCAs.

1.5.2.5 BLM Manual 6280

As required by BLM Manual 6280, for any implementation-level action proposed or that may potentially affect NHTs, the BLM is required to do the following as part of the NEPA analysis:

- For each alternative, describe and analyze the potential impacts to the nature and purposes of the National Trail; the National Trail resources, qualities, values, and associated settings; and the primary use or uses of the trail.
- Describe the impacts to the national significance of National Trails, based on NHPA criteria and other NTSA criteria, as well as impacts to the significance of properties that are eligible or listed on the National Register, as applicable.
- Ensure adequate public involvement in the BLM's management activities through NEPA, land use planning, and/or other applicable processes.
- To the greatest extent possible, consider opportunities for mitigation to a level commensurate with the adverse impact to the nature and purposes; resources, qualities, values, and associated settings; and the primary use or uses of the National Trail.

For trails under feasibility study, the NEPA analysis for the proposed action is required to consider existing data, including data from the completed National Trail Feasibility Study (if available) or additional data collected as necessary for alternative formulation and analysis of the proposed action (i.e., Gateway West Transmission Line Project). In evaluating whether to approve the proposed action, the BLM's NEPA analysis is required to:

- describe the values, characteristics, and settings of trails under study and trails recommended as suitable in the affected environment section of the NEPA document;
- analyze and describe any impacts of the proposed action on the values, characteristics, and settings of trails under study or trails recommended as suitable; and
- consider an alternative that would avoid adverse impacts to the values, characteristics, and settings of the trail under study or recommended as suitable and/or incorporate and consider applying design features to avoid adverse impacts.

To analyze the potential for Project impacts, the manual stipulates that the inventory include an interdisciplinary assessment of NHT-related recreation, historic/cultural, and natural resources, qualities, and values and settings (BLM 2012a).

1.5.2.6 BLM Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management.

Manual 6400 states:

> *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… For BLM-identified eligible and suitable rivers, the BLM should consider exercising its discretion to deny applications for right-of-way grants if the BLM determines through appropriate environmental analysis that the right-of-way proposal is not compatible with the river's classification and the protection and enhancement of river values. Where the right-of-way proposal is found to be compatible, additional or new facilities should be located, to the greatest extent possible, to share, parallel, or adjoin an existing right-of-way.*

1.5.2.7 Elmore County Plans

The Elmore County Comprehensive Plan was adopted in 2004, amended in 2007 and 2011, and updated in 2014 (Elmore County 2014). The 2014 Elmore County Comprehensive Plan (which was published after the release of the Gateway West FEIS) lists seven goals for electrical power, including three most relevant to this Project:

- *Recognize the need for long-range planning and build out of electrical infrastructure as detailed in the Eastern Treasure Valley Electrical Plan (ETVEP), developed by a local Community Advisory Committee. See Map #11 in the map appendix* [of the Elmore County Comprehensive Plan] *for the conceptual locations of future electrical infrastructure;*
- *Recognize that the ETVEP is a conceptual plan and is the first step in planning for new and upgraded transmission lines and substations. Each project will still require jurisdictional approval and will be subject to the public siting process; and*
- *Recognize other types and sources of energy beyond the existing electrical infrastructure have a role to play in the future of the Gem Community (e.g., solar, wind, gas).*

1.5.3 Federal Mitigation Policies

On November 3, 2015, the BLM received the *Presidential Memorandum: Mitigating Impacts on Natural Development and Encouraging Related Private Investment* (80[215] *Federal Register* 68743). The memorandum directs agencies to implement landscape-scale mitigation for project development impacts. The Presidential Memorandum states that mitigation "occurs through policies that direct the planning necessary to address the harmful impacts on natural resources by avoiding and minimizing impacts, then compensating for impacts that do occur." In addition, the memorandum states that "Agencies' mitigation policies should establish a net benefit goal or, at a minimum, a no net loss goal for natural resources the agency manages that are important, scarce, or

sensitive, or wherever doing so is consistent with agency mission and established natural resource objectives."

In October 2015, the DOI released Manual 600 DM 6, *Implementing Mitigation at the Landscape-scale* (DOI 2015), which also implements landscape-scale mitigation for impacts from projects. The mitigation guidance states that "compensatory mitigation means to compensate for *remaining* unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied, by replacing or providing substitute resources, or environments."

The BLM Interim Mitigation Policy (2013-WO-IM-142) provides interim guidance that states the BLM will identify, analyze, and require compensatory mitigation, as appropriate, to address reasonably foreseeable residual effects to resources, values, and functions from land use activities.

The Presidential Memorandum instructs agencies to consider the extent to which the beneficial environmental outcomes that will be achieved are demonstrably new and would not have occurred in the absence of mitigation (i.e., additionally). It also calls for mitigation to provide for improvement of mitigation sites and be durable, transparent, monitored, and adaptively managed. The DOI manual (600 DM 6) and BLM's interim policy on mitigation (IM 2013-142) also direct the agency to implement similar mitigation standards, which are among the considerations for the Gateway West Project.

1.5.4 Major Federal Consultations

Before the BLM can decide whether to grant the ROW, consultation with several tribal as well as federal and state agencies is required, including concurrence from the USFWS in the form of a concurrence letter or Biological Opinion (BO) and concurrence from the Idaho SHPO concerning the treatment of historic properties.

1.5.4.1 Government-to-Government Consultation

The BLM is responsible for compliance with a host of laws, EOs and Memoranda, treaties, departmental policies, and other mandates regarding their legal relationships with and responsibilities to Native Americans. The government-to-government relationship that the United States has with federally recognized Indian Tribes started with the Commerce Clause of the U.S. Constitution, where Tribes were recognized as sovereign nations, and has continued in federal laws and policies including but not limited to the NHPA[8], NEPA, Archaeological Resources Protection Act (ARPA), American Indian Religious Freedom Act (AIRFA), Native American Graves Protection and Repatriation Act (NAGPRA), and EOs 12875, 12898, 13007, 13084, and 13175. Compliance with this body of law requires consultation with Tribes on the effects of proposed actions. Specific guidance includes, but is not limited to, formal government-to-government consultation, treatment of discoveries of burials and Native American objects, and treatment of traditional cultural properties (TCPs) and sacred sites and landscapes.

A list of Tribes that have been contacted to date and invited to government-to-government consultation is found in Chapter 5. Tribes were also invited to participate

[8] 54 U.S.C. § 300101, et seq. (as recodified in 2014)

as concurring parties in a PA developed for this Project under Section 106 of the NHPA (see Appendix N of the FEIS).[9]

1.5.4.2 U.S. Fish and Wildlife Service

Consultation with the USFWS is required to comply with Section 7 of the ESA, as amended (16 U.S.C. § 1536(a)(2) [1988]), for species listed as threatened or endangered. As lead federal agency, the BLM must analyze the effects of the proposed Project on the species and on their designated critical habitat, if present. The Biological Assessment (BA) prepared for this Project identifies the nature and extent of impacts and addresses avoidance, minimization, and mitigation measures to reduce potential impacts. The USFWS published their final BO for the Project, as well as their Conference Opinion for slickspot peppergrass, on September 12, 2013.

The BLM will continue to consult with the USFWS regarding the Project's compliance with both the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

1.5.4.3 Advisory Council on Historic Preservation

Federal agencies are required by Section 106 of the NHPA to consider the effects on historic properties (listed or eligible for listing on the NRHP). The BLM, as the lead federal agency, must provide the ACHP an opportunity to comment on adverse effects on properties listed on or eligible for the NRHP. The ACHP formally requested to participate in the development of a PA for the Project. A PA was developed for the Project (found in Appendix N of the FEIS) through a collaborative process with the invited participation of all interested parties. It specified phased survey and reporting and provided the framework and direction for a project-wide Historic Properties Treatment Plan (HPTP; the Proponents' draft can be found in Appendix C-1 of the FEIS) and for site-specific segment HPTP development. The executed PA addresses the entire Project, including Segments 8 and 9.

1.5.4.4 State Historic Preservation Office

The Idaho SHPO is a signatory to the 2013 PA. The BLM will continue to consult with the SHPO regarding adverse effects from the Project and to request concurrence on the BLM's determination of eligibility for the NRHP of historic properties that may be adversely affected by the Project. If historic properties would be subjected to adverse effects that cannot be avoided, the BLM will consult with the Idaho SHPO and the ACHP to determine eligibility and effect. See Section 3.3.2.6 in Chapter 3 for additional information.

1.6 RELATIONSHIP TO FEDERAL LAND MANAGEMENT POLICIES, PLANS, AND PROGRAMS

Land use plans, in various forms, are written by agencies to guide the management of resources and uses on lands within their jurisdictions. The BLM has RMPs or MFPs in place for all BLM-managed lands affected by this Project. Table 1.6-1 lists the various federal land use plans (including the year of publication) that provide direction and management standards for activities within their jurisdiction that are applicable to

[9] Congress recodified the NHPA on December 19, 2014. The agency review provision of the NHPA, formally Section 106 of the NHPA, is now 54 U.S.C. § 306108. While the citation has changed, the BLM will refer to the review process in this SEIS as "Section 106," "Section 106 process," or "Section 106 of the NHPA."

Segments 8 and 9 of the Project. These land use management plans were recently amended by the Great Basin Region ROD (BLM 2015b).

Table 1.6-1. BLM Land Use Plan Status along Gateway West Segments 8 and 9

Segment	Administrative Unit	Applicable Plan Name	Plan Year
8	Shoshone Field Office	Monument RMP	1986
8	Shoshone Field Office	Bennett Hills/Timmerman Hills MFP	1980
9	Burley Field Office	Cassia RMP	1985
9	Burley Field Office	Twin Falls MFP	1982
8	Jarbidge Field Office	Jarbidge RMP	2015
8 and 9	Four Rivers Field Office	Jarbidge RMP	1987
8	Four Rivers Field Office	Kuna MFP	1983
8 and 9	Four Rivers Field Office	Morley Nelson Snake River Birds of Prey National Conservation Area RMP	2008
8 and 9	Bruneau Field Office	Bruneau MFP	1983
8 and 9	Owyhee Field Office	Owyhee RMP	1999

MFP – Management Framework Plan; RMP – Resource Management Plan

1.6.1 Idaho and Southwestern Montana Greater Sage-Grouse Approved RMP Amendment

The BLM's ROD for the Great Basin Region (BLM 2015b), which was published after the FEIS was written, amended BLM Idaho's land use plans to establish greater sage-grouse management areas and to provide management direction for species.[10] The ROD established four sage-grouse habitat designations. 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:

- PHMAs are BLM-administered lands identified as having the highest habitat value for maintaining suitable sage-grouse populations. The boundaries and management strategies for these areas are derived from and generally follow the PPH boundaries.
- GHMAs 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.
- IHMAs are BLM-administered lands located in Idaho that provide a management buffer around or connect patches of PHMAs. IHMAs encompass areas of generally moderate to high habitat value, but which have been determined by the BLM to not be as important as PHMAs.
- SFAs are a subset of PHMAs, 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).

[10] The Great Basin ROD states the following: "Management Decisions, Lands & Realty #12: PHMA (Idaho and Montana) and IHMA (Idaho), and GHMA (Montana only) are designated as avoidance areas for high voltage transmission line and large pipeline ROWs, except for Gateway West and Boardman to Hemingway Transmission Projects."

These new sage-grouse habitat designations are now included in the suite of tools used by the federal agencies to manage sage-grouse populations and their habitats.

1.6.2 Plan Amendments

In some cases, the Project would not conform to the management objectives provided in the applicable BLM land use plans. Where possible, the proposed Project has already been modified to conform to the plans; however, portions of the Project would still not conform to one or more of the plans. In these cases, the BLM can deny the Project, require modifications to the Project so that it is in conformance, or amend the applicable plan. As part of the ROD, the BLM will decide whether to implement a plan amendment for a corresponding route or alternative if the BLM decides to grant a ROW. Table 2.3-1 of this SEIS identifies amendments that would be needed for the routes considered in this document. Chapter 3 resource sections discuss plan amendment consequences. Chapter 4 discusses the cumulative effects of potential plan amendments. Appendix F of this SEIS contains the specific plan amendment language, and Appendix G contains the rationale and analyses for consideration of amending Visual Resource Management (VRM) classifications. Documentation on the need to amend plans is located in the administrative record. Except for those land use plan decisions listed Table 2.3-1 in Chapter 2, the Revised Proposed Action and the alternatives comply with all applicable decisions for the plans listed in Table 1.6-1.

1.6.3 West-Wide Energy Corridors

In response to Section 368 of the Energy Policy Act of 2005, the BLM participated in a programmatic EIS (PEIS) for the designation of energy corridors on federal land in the 11 western states (DOE/EIS-0386 [DOE and BLM 2008]), commonly known as West-Wide Energy corridors or WWE corridors, in which the DOE and the BLM were the lead federal agencies, while the U.S. Department of Agriculture Forest Service (Forest Service) and other agencies were cooperators.

A Final PEIS was published on November 28, 2008 (DOE and BLM 2008). A ROD on the PEIS signed January 14, 2009, designates energy corridors and provides guidance, best management practices, and mitigation measures to be used where linear facilities are proposed across BLM-managed lands.

Where the PEIS identifies new corridors for the managing agencies, the ROD also amended relevant land management plans to include the new corridor. Designation of corridors does not require their use nor does such designation exempt the federal agencies from conducting an environmental review on each project. While the PEIS amended the relevant land management plans to add a corridor, it did not necessarily amend underlying land allocations, including visual resource management designations, to allow for overhead transmission lines.

The Final ROD for the PEIS is available online at *http://corridoreis.anl.gov/index.cfm*. The Gateway West SEIS takes into consideration the WWE corridors and tiers to the Final PEIS for these corridors. Further discussion regarding the use of the WWE corridors for the Project is found in Section 2.5.5. The Final ROD contains Interagency Operating Procedures, which were developed under the Section 368 Corridor program. These procedures establish minimum requirements that would be incorporated as appropriate into projects such as Gateway West. Appendix H of the FEIS describes the consideration given to Final ROD Interagency Operating Procedures for Gateway West.

On July 7, 2009, a consortium of environmental groups (Plaintiffs) filed a Complaint in the *Wilderness Society, et al. v. United States Department of the Interior, et al.*, challenging various aspects of decisions associated with the energy corridor designations. In July 2012, the federal agencies reached a settlement agreement with the Plaintiffs. The United States District Court for the Northern District of California dismissed the case on July 11, 2012. Under the settlement agreement, the federal agencies agreed to review and update training for corridor planning, designation, and use, and invite Plaintiff representatives to participate in that training; review and update agency guidance; develop a corridor study plan by July 11, 2013, and complete that study by July 11, 2014; and create an interagency Memorandum of Understanding that will outline procedures to periodically review designated corridors to assess the need for corridor revisions, deletions, or additions.

In the Complaint, the Plaintiffs identified 45 Corridors of Concern in 11 states. The BLM issued agency guidance addressing the siting of proposed projects within the WWE corridors and in the Corridors of Concern. See BLM Instruction Memorandum No. 2014-080 (April 7, 2014). Segments 8 and 9 of the Gateway West Project would not use any of the Corridors of Concern identified by the Plaintiffs.

1.7 RIGHT-OF-WAY EASEMENT ACQUISITION PROCESS FOR NON-FEDERAL OWNERS

The Proponents would negotiate details regarding required land acquisition across privately owned lands, either in fee or as an easement, for the transmission line and associated facilities (substations, etc.) with each landowner. In exchange for the right to operate the transmission line and facilities, the Proponents would compensate the landowner for the use of the land. The negotiations between the Proponents and the individual landowner could include compensation for the loss of use during construction, loss of nonrenewable or other resources on the land, and the restoration of unavoidable damage to the property that may occur during construction. The BLM does not have the legal authority to enforce stipulations on private lands but has the obligation to recommend stipulations to reduce impacts as part of the NEPA process. Private landowners may negotiate stipulations as part of their agreements.

If a fee ownership or an easement cannot be negotiated with a landowner, the Proponents may acquire the rights needed under eminent domain laws prevailing in Idaho. State statutes have been enacted that define the acquisition process on private and non-federal public lands for utilities.

1.8 SCOPE OF THE ANALYSIS

1.8.1 Geographic Scope

The geographic scope of this analysis varies by resource. In Chapter 3, each resource section begins by defining the geographic area of analysis relevant to that resource. In addition to larger geographic areas specifically defined for individual resource analyses, two areas are defined here and used consistently throughout this EIS.

Right-of-Way – ROW refers to the area, generally centered on the transmission line centerline, requested by the Proponents, the BLM, and/or other landowners and managers, for the construction, operations, and maintenance of the transmission line. For the most part, the ROW would be 250 feet wide for the 500-kV portion of the Project;

however, the agreed ROW width on non-federal lands may vary based on local agency permits or landowner negotiations. Additional lands outside the ROW would be required for associated facilities such as substations and access roads. Access roads may be within the ROW but can also occur outside of the ROW. Estimated acres of land required for construction and operations, including ROW and associated facilities by landowner, are summarized in Table 1.8-1 and detailed in Chapter 2 and Appendix B.

Table 1.8-1. Land Ownership Distribution in the Gateway West Revised Proposed Action ROW for Segments 8 and 9

Land Owner/ Land Manager	Construction		Operations	
	Acres 1/, 2/	Percent 2/	Acres 2/	Percent 2/
Bureau of Land Management	8,505	75	6,926	75
Bureau of Reclamation	153	1	128	1
Military Reservations/ U.S. Army Corps of Engineers	7	<1	2	<1
National Forest	0	0	0	0
Private	1,955	17	1,603	17
State	714	6	578	6
State Fish and Game	3	<1	1	<1
Other State Lands	8	<1	8	<1
Water	15	<1	12	<1
Total	**11,359**	**100**	**9,259**	**100**

1/ Construction right-of-way (ROW) acres are greater than operations ROW acres due to additional areas needed for staging areas, fly yards, and wiring pulling/splicing sites; however, not all of the ROW would actually be disturbed.
2/ Numbers are rounded to the nearest acre/percent; therefore, columns may not sum exactly.

Right-of-Way for Geotechnical Assessment – The Proponents conducted geotechnical surveys on federal lands under a short-term ROW granted by the BLM. These surveys were needed in order to collect geotechnical soil property information for the design of tower foundations and support structures. An Environmental Assessment was completed in June 2010 to analyze the application for the ROW along the Wyoming portion of the Project; the Environmental Assessment is incorporated by reference into this SEIS (BLM 2010a). Additional geotechnical assessments may need to be conducted for the portion of the Project considered in this SEIS.

1.8.2 Temporal Scope

The analysis will address the effects of the Revised Proposed Action and the No Action Alternative, including construction (short term), operations and maintenance (long-term), and decommissioning and abandonment (long term). The Proponents estimate that construction would occur between 2019 and 2024 (PacifiCorp 2016), depending on permitting; therefore, short-term effects occur within that time frame. The BLM ROW grant will usually be issued for a 30-year term; however, typically transmission lines of this size are designed for a working life of 50 years (although in practice the useful life is often much longer). Therefore, 50 years is considered long term.

1.8.3 Actions Not Connected

Connected actions (those that are closely related and therefore should be discussed in the same impact statement) are defined by the CEQ (40 CFR Part 1508.25) as actions that automatically trigger other actions that may require an EIS. Connected actions cannot or will not proceed unless other actions are taken previously or simultaneously,

or are interdependent parts of a larger action and depend on the larger action for their justification. For this Project, interdependent parts of the Project considered as part of the overall Project include construction and operations of the Project's segments, the associated substation expansions or constructions, the fiber optic communication system and its regeneration stations, access roads, and all temporary staging areas and fly yards used during construction. Potentially related energy considerations and development actions discussed below were reviewed to determine if they were connected to the Revised Proposed Action. No actions currently proposed were determined to be connected actions.

1.8.3.1 Generation

Given the CEQ's definition, electrical generating sources that might use the Gateway West Project to transmit their power are not connected actions. Therefore, electrical generating sources are not analyzed in the direct and indirect effects analysis, but are included in the consideration of cumulative impacts. The requests for generation interconnection, whether they be fossil or renewable, to which the Proponents must respond under FERC regulations, are made to multiple carriers, including other utilities. If they are unable to respond to an interconnection request due to a denial of a ROW grant from the BLM, other carriers may respond. Therefore, the new generation requests do not qualify as connected actions under the "automatically trigger" criterion.

The Gateway West Project can proceed without any one generation project. Multiple generators have made interconnection requests. The overall demand, rather than any one project, provides part of the impetus for the Project. Therefore, no particular generation project is necessarily tied to Gateway West.

Independent producers are building new wind farms. Some of these projects would be constructed, sending power into the grid before Gateway West is permitted. Therefore, their wind farms are not driving the Project and are not "connected actions" under the "part of a larger action" criterion.

There are other proposals to carry new generation to various markets, including markets farther south in Nevada, California, and Arizona. If Gateway West is not built, the generation project would likely still be built and other projects could reasonably be expected to carry the additional electricity to market. Therefore, the generation projects do not induce or automatically trigger the Project.

1.8.3.2 Load Growth (Demand)

Load growth, whether industrial, commercial, or residential, puts a strain on the existing grid to supply additional electricity. While the existing grid can, and does, supply the demand, as the load on each of the transmission lines grows, the opportunity for spreading that load on remaining transmission lines, should one fail, drops until the loss of a single transmission line can cause a cascading blackout scenario reminiscent of the Northeast disaster of August 14, 2003. While Gateway West would alleviate the strain on the grid, it is not "automatically triggered" by load growth. There are other transmission lines that use other routes from other generation sources that could also help to supply and support the load, such that the Project is not required simply because of load growth.

Another connected action question is whether Gateway West "automatically triggers" load growth. Because the public utilities commissions of Idaho must allow the utilities to pass on the capital costs of system improvements, including but not limited to Gateway West, those commissions prohibit "speculative" construction and only permit capital improvements that show a clear demand ahead of construction. While this does include predictive models that estimate future growth, they are subject to review and approval by the commissions. Therefore, a project like Gateway West is in response to, rather than in anticipation of, load growth.

There is some concern that the mere presence of a competent grid that can manage current and future loads would incur further or greater growth than would occur without the grid in place. A large industrial facility, for example, if sited in the service area of either utility, could bring its own load growth and also bring direct and indirect employment that might increase local populations and therefore further increase load growth. In the absence of reassurances from the utilities that electrical supplies in the volumes needed by the industry would be available, the industry would locate elsewhere. While that is true for the grid as a whole, no individual project is responsible for the presence or absence of growth, because there are multiple paths along which such load demand could be satisfied. Gateway West, in and of itself, is not required to meet such growth nor would it, by itself, trigger such growth.

Load growth is a cumulative term assigned to a variety of smaller events, including population increases and new commercial and industrial projects that provide jobs to that population. None of those events is directly linked to Gateway West, and Gateway West would proceed independent of any one of those events. They do not qualify as a "larger action" because they are not, individually or collectively, part of any federal action, and are not an organized "action" in any permitting venue.

1.8.3.3 Other Electric Transmission Lines in the Region

Rocky Mountain Power's Web page[11] includes the Project as part of its larger system planning for an "Energy Gateway" for its service area. Idaho Power's Web page[12] includes the Project as part of its larger vision for improved grid efficiency, which includes other transmission lines. The WECC[13] and the NTTG[14] Web sites all show Gateway West as one of several new projects needed to complete an efficient Northwest electrical service grid.

The other lines are either planned to be in service before Gateway West, planned well after the in-service dates of Gateway West, or serve different components of the service area. The construction of one of these components of the grid does not automatically trigger another because each can and will be built and operated independently. Each responds to a set of generation requests and demand growth projections for different parts of the overall service area. Some parts of the projected new grid have not yet been formally proposed and therefore would not be considered "connected" actions in any case.

[11] http://www.rockymountainpower.net/ed/tp/eg.html
[12] http://www.idahopower.com/AboutUs/PlanningForFuture/ProjectNews/GatewayWest/default.cfm
[13] https://www.wecc.biz/TransmissionExpansionPlanning/Lists/Project%20Portal/AllItemsCorrected.aspx
[14] http://www.nttg.biz/site/

While other proposed new transmission lines must be considered as part of the cumulative impacts analysis for Gateway West, they are not "connected" actions as they fail all three tests for connectivity:

1. No new transmission line would "automatically trigger" the construction of the Gateway West and the Project would not "automatically trigger" the construction of other transmission lines. Each of these lines serves a particular purpose in strengthening the overall grid. Though the grid will be more robust when several additional transmission lines are built, each is designed to function as a single addition to the grid, and must calculate how the grid would carry its increased load if for some reason the new transmission line fails. The grid only allows the construction of a new line if the old grid can still carry its additional load. Therefore, new transmission lines do not "automatically trigger" one another.
2. Gateway West has sufficient justification to be built in the absence of the other proposed transmission lines. It does not require the construction of another transmission line to be put into service. Therefore, it can and would proceed without other actions taken previously or simultaneously, failing the second test for connected action.
3. The electrical grid that supplies energy to North America, including Canada, is a complex and interconnected system. Any new transmission line proposed will be part of the interconnected whole. Therefore, Gateway West, along with any other new or existing transmission line, is part of an electric system. However, the mere existence of an interconnected electric grid is not an "action" in and of itself. Instead, it is an existing system with requirements for new participants, which Gateway West must meet to interconnect. Further, the justification for the Project is expressed in terms of a required response to new generation and an equally required response to increased load demand, rather than in terms of meeting the needs of "the grid." Therefore, it fails the third test because it is not part of a larger action or dependent on the larger action for its justification.

1.9 SCOPING AND PUBLIC INVOLVEMENT

1.9.1 Scoping and Public Involvement Conducted for the Draft SEIS

The BLM published a Notice of Availability for the DSEIS in the *Federal Register* on March 11, 2016. The Notice of Availability announced the release of the BLM's DSEIS and the BLM's intent to conduct public meetings and collect public comments on the document during the 90-day comment period. The BLM sent 4,670 mailers and 2,816 emails announcing the release of the DSEIS to a combination of BLM, Forest Service, and Proponent mailing list contacts in the areas of Segments 8 and 9.

The BLM prepared and distributed two press releases regarding the DSEIS. The first press release was distributed on March 11, 2016, to announce the release of the Draft SEIS, the start of the 90-day comment period, and the public open house dates. A second press release was distributed on March 30, 2016, to announce the addition of a fifth public meeting in Hagerman, Idaho.

The BLM Project website was updated to announce the release of the DSEIS. The updates included the public meeting and comment period schedule, details about where to find information related to particular resources in the document, and a link to an

updated version of the Project interactive map. An electronic version of the document was made available to the public for viewing and download. CD copies of the DSEIS were mailed upon request. In addition, an online open house website was developed for the Project. The online open house was available from April 4, 2016, through June 9, 2016. It included all displays, materials, and information provided at in-person open houses, including the updated Project interactive map. Public comments were accepted at public meetings, by mail, email, or electronically through the online open house.

The BLM hosted five public meetings in April 2016 to provide information on the document and encourage public comments on the DSEIS. Dates and locations of these meetings follow in Table 1.9-1. The public meeting in Hagerman, Idaho, on April 18 was added following the release of the DSEIS. The BLM announced the additional meeting in a press release, an email to the Project mailing list, and on BLM social media accounts.

Table 1.9-1. Dates and Locations of Draft SEIS Public Meetings

Meeting Date	Meeting Location
April 18, 2016	Hagerman, Idaho
April 19, 2016	Boise, Idaho
April 19, 2016	Kuna, Idaho
April 20, 2016	Twin Falls, Idaho
April 21, 2016	Murphy, Idaho

There were 147 individual letters submitted to the BLM during the DSEIS comment period, and included in those letters were 711 individual comments. These letters and comments were reviewed by a team of analysts and logged into a database that was used to track and sort comments for response in the Final SEIS. Appendix L of this FSEIS contains the DSEIS period comments and responses to them. Section 1.1.1, above, details the changes between the publication of the DSEIS and FSEIS documents.

Chapter 5 of this FSEIS, Consultation and Coordination, describes the outreach and comment period related to the DSEIS and provides details regarding the protest and comment periods that will follow the publication of this FSEIS.

1.9.2 Scoping and Public Involvement Conducted for the SEIS

The agency initiated public scoping with publication of a Notice of Intent (NOI) to prepare an SEIS in the *Federal Register* on September 19, 2014 (79 *Federal Register* 56399). The NOI was followed by a series of four public meetings in 2014:

- Tuesday, October 7, 2014, in Boise, Idaho;
- Tuesday, October 7, 2014, in Kuna, Idaho;
- Wednesday, October 8, 2014, in Gooding, Idaho; and
- Thursday, October 9, 2014, in Murphy, Idaho.

Information about the Project was provided at the public meetings and via a BLM-hosted Internet Web site. Public comments were taken at the public meetings (oral and written), through the Web site (*http://www.blm.gov/id/st/en/prog/nepa_register/gateway-west.html*), and via e-mail and regular postal service.

The public scoping period lasted 35 days and closed on October 24, 2014. All the comments were collected and read, and substantive comments were sorted by subject. Issues were identified that could be used to develop alternatives or identify resource effects and sources of information. The Scoping Report is posted on the BLM project Web site (*http://www.blm.gov/id/st/en/prog/nepa_register/gateway-west/Documents.html*)

1.9.3 Scoping and Public Involvement Conducted for the FEIS in 2008

Scoping was also conducted for the original FEIS in 2008. The agencies initiated public scoping with publication of a NOI to prepare an EIS for the original proposal in the *Federal Register* on May 16, 2008 (73 *Federal Register* 28425). The NOI was followed by a series of nine public meetings in 2008:

- Tuesday, June 3, 2008, in Twin Falls, Idaho;
- Tuesday, June 3, 2008, in Murphy, Idaho;
- Wednesday, June 4, 2008, in Pocatello, Idaho;
- Wednesday, June 4, 2008, in Boise, Idaho;
- Thursday, June 5, 2008, in Montpelier, Idaho;
- Monday, June 9, 2008, in Casper, Wyoming;
- Tuesday, June 10, 2008, in Rawlins, Wyoming;
- Wednesday, June 11, 2008, in Rock Springs, Wyoming; and
- Thursday, June 12, 2008, in Kemmerer, Wyoming.

The public scoping period for the original FEIS lasted 45 days and closed on July 3, 2008. Due to the Independence Day holiday on July 4, any comments received by July 11, 2008, were included in the scoping comment analysis. Comments were collected and sorted using a process similar to the one described in Section 1.9.1.

After the formal public scoping period and during an internal review by the BLM and cooperating agencies, non-federal cooperating agencies requested an extended period of time to develop additional alternatives. The BLM responded by incorporating all comments received by September 4, 2009, into a revised scoping report. More information on details of the original scoping comment analysis process and outcome can be found in the Gateway West Transmission Line Project Scoping Summary Report (Tetra Tech 2009) and online on the BLM project Web site (*http://www.blm.gov/id/st/en/prog/nepa_register/gateway-west/Documents.html*).

In addition, the Proponents conducted multiple meetings to which landowners within a 2-mile-wide corridor were invited in 2008 and 2009. The comments received from these meetings or provided in writing thereafter were documented and submitted to the BLM and were incorporated, if received by September 4, 2009, in the revised scoping report.

1.10 ISSUES TO BE ANALYZED

This SEIS focuses on new data and information that have become available since the publication of the FEIS and ROD. However, the alternatives considered in this document are analyzed based on all the issues included in the FEIS (refer to Section

1.10 of the FEIS), as well as new issues, direction in agency handbooks, and requirements of federal and state laws and regulations. The following describes the issues that were identified from public scoping conducted for the SEIS.

1.10.1 Air Quality and Greenhouse Gas

- How would the Project affect air quality and climate change?

1.10.2 Agriculture

- Would routing the Project through agricultural areas adversely affect farming practices?
- Would the transmission line prevent future developments of pivot agriculture?
- Would the electric and magnetic field (EMF) created by the transmission lines adversely affect sensitive farm and dairy equipment, and cattle health and production?
- How would dairy operations, including milk quality, milk production, dairy cow behavior, feeding, and conception rates, be affected?
- Would sensitive milk barn equipment be affected from the transmission lines?

1.10.3 Cultural Resources and Historic Trails

- How would impacts to the Oregon Trail be avoided?
- How would the Project affect visual resources associated with historic resources, including historic trails?
- Would appropriate mitigation be applied to compensate for impacts to trails and cultural resources if impacts could not be otherwise avoided?
- How would Native American sites along Owyhee Front in the Oreana area be impacted by the Project?
- How would the requirements of the enabling statute for the SRBOP (P.L. 103-64), including the requirement to maintain cultural resources and values of the area, be implemented?
- How would the BLM protect the visitor experience at the Oregon National Historic Trail?

1.10.4 Cumulative Effects

- How would the cumulative impacts of multiple power lines, energy developments, and other disturbances on native vegetation and greater sage-grouse (hereafter referred to as “sage-grouse”) migration and movement be addressed?

1.10.5 Effects on the State and Counties

- How would the Project affect State Endowment Lands and Public Trust Lands (including navigable lakes and streams)?
- Would the purchase of private lands to mitigate impacts to cultural resources be contrary to county goals of keeping current acreage in private ownership (citing effects to the tax base)?

1.10.6 Fire

- Would the Project increase fire danger, particularly from new roads and increased access to the area?

1.10.7 Geologic Hazards, Safety, and Electrical Environment

- How would the health and safety of people living close to high-voltage transmission lines be affected, particularly in areas where transmission lines already exist?
- How would noise affect people living close to the transmission lines?

1.10.8 Historic Trails

- What are the impacts to NRHP-eligible historic resources?
- What would be the visual and recreational impacts be 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 potential mitigation to be commensurate with the Project's impacts on NHTs?

1.10.9 Land Use

- Is there a need to build new transmission lines on private land?
- How would the Project affect the SRBOP?
- How would State Endowment Lands and Public Trust Lands, which include the beds of navigable lakes and streams, be affected?
- Would there be conflicts with existing management plans?

1.10.10 Plants

- How will new biological information that has become available since the publication of the FEIS be assessed?
- Would increased access increase noxious weeds infestations?

1.10.11 Plants: Threatened, Endangered, Proposed, and Candidate Species

- How will new biological information that has become available since the publication of the FEIS be assessed?
- How would the alternatives affect slickspot peppergrass?

1.10.12 Purposed Action

- Is there a need to construct two new lines rather than one?

- Can the new lines be placed on existing towers?

1.10.13 Recreation

- Would the Project result in adverse impacts on recreation activities that were not previously analyzed during the FEIS process?
- How would all recreational opportunities, including night sky viewing, be affected by alternatives routed near the Bruneau Dunes State Park?
- How would Celebration Park and Guffey Bridge be affected?
- Would a transmission line interrupt recreation opportunities on BLM-managed land south of Kuna, such as hiking, cross country running, biking, or four-wheeling?
- How would the visitor experience at Oregon National Historic Trail remnants be protected, particularly in the Monument, in the vicinity of Three Island Crossing State Park and other public and private lands?
- Would increased public access resulting from new roads associated with the transmission line degrade areas that were not previously as accessible?
- Would vandalism, weed spread, litter, and recreational shooting increase?
- Would the BLM close the area to recreational shooting or study of the effects of recreational shooting, including lead, on raptor and prey populations?

1.10.14 Scenery and Visual Resources

- How would the Project affect visual values the SRBOP?
- How would the Project affect views from private land and how would this affect land values?
- Would the Project affect the pristine character of the Owyhee Front?
- How would the Project affect public parks, specifically the Bruneau Sand Dunes (night sky viewing), Celebration Park, and Hagerman Fossil Beds? Would these viewsheds change to an industrial landscape?
- Would the Hagerman Fossil Beds National Monument be affected by the Project?
- Would the Project impact scenery, land values, agricultural production land, and land development?

1.10.15 Socioeconomic Issues

- How would the Project affect economic growth in the area?
- Would increased access to reliable power have a positive effect on economic development?
- Would the Project adversely affect adjacent property values?
- Would the purchase of private lands to mitigate impacts to cultural resources be contrary to county goals of keeping current acreage in private ownership (citing effects to the tax base)?

1.10.16 Transportation

- Would new road building associated with the transmission lines in the SRBOP affect the spread of weeds, vandalism, litter, and recreational use?
- Would the new transmission lines affect airport construction?

1.10.17 Water and Riparian Resources

- The USEPA requested that the EIS disclose the structure and management of the In-Lieu-Fee program as well as why an In-Lieu-Fee program would be appropriate mitigation for these impacts.
- Would the unavoidable aquatic impacts on State Endowment Lands and Public Trust Lands, including navigable waters, be compensated?
- What are the potential impacts to water resources along Segment 8, from MP 126 to the Hemingway Substation?

1.10.18 Wild Horses and Burros

- How would the alternatives affect wild horses?

1.10.19 Wildlife and Wildlife Habitat

- How would the alternatives affect raptor species, pygmy rabbits, burrowing owls, mule deer, antelope, and mountain sheep?
- How will new biological information that has become available since the publication of the FEIS be assessed?
- Would the Project cause fragmentation of habitats; increased human access to previously inaccessible wildlife habitats; increased avian collision risks and subsequent mortality; increased predation of small animals by ravens and raptors; or noxious weeds infestations;
- Would the Project affect wildlife habitats by increasing wildfires, including fires caused by raptors being electrocuted and falling to the ground on fire?
- Would additional transmission lines benefit raptor populations, due to the increase in new perching structures resulting from the towers?
- Would the Project impact the South Hills Important Bird Area?
- What are the long-term effects of transmission lines on raptors?

1.10.20 Wildlife: Threatened, Endangered, Proposed, and Candidate Species

- How would the alternatives affect sage-grouse and their habitat?
- How will new biological information that has become available since the publication of the FEIS be assessed?

1.11 ORGANIZATION OF THIS SEIS

The analysis in this SEIS only addresses the portions of the Project related to Segments 8 and 9; this document incorporates by reference the analysis found in the original FEIS regarding Project-wide impacts. This SEIS supplements the analysis found in the 2013 FEIS by assessing new information that has been made available since the FEIS and original ROD were published. Per the guidance found in the BLM 1790 Manual (BLM

2013c), all elements of the Proponents' proposal will be identified as Project *design features*, while any additional measures required by the BLM will be identified as *mitigation*.

This document is organized into several chapters. Chapter 2 presents the Revised Proposed Action and a range of reasonable alternatives to that action. Chapter 3 presents the affected environment and environmental consequences, by resource and by segment, of the Project. Chapter 4 describes cumulative effects of the Project in combination with past, present, and other reasonably foreseeable projects overlapping in geography and time. Chapter 5 provides a record of consultation and coordination conducted during the NEPA process, including a summary of the public scoping process, and a list of preparers. Chapter 6 contains a glossary and index for this document. Chapter 7 contains the references for other chapters of the SEIS. Appendix A contains maps of the Project routes and alternatives. The Proponents' supplemental POD and information on the use of helicopter-assisted construction along Segments 8 and 9 are presented in Appendix B. The Proponents' MEP, along with other information concerning helicopter-assisted construction methods, is included as Appendix C. Appendix D contains oversized or lengthy tables referenced in the SEIS sections, and Appendix E contains oversized figures (including simulations) referenced in the SEIS sections. Appendix F provides plan amendments to the BLM RMPs and MFPs for the Project. Appendix G provides the visual resource analysis that supports the plan amendments provided in Appendix F. Appendix H contains the RAC Subcommittee reports. Appendix I presents the SEIS scoping report. Appendix J contains the *BLM Manual 6280 Inventory and Impacts Analysis for National Historic Trails and Study Trails* report. Appendix K contains the BLM's conceptual framework regarding mitigation on the SRBOP. The conceptual model is intended, in part, to ensure that offsetting impacts to the SRBOP will lead to a net benefit to resources and values, i.e., achieve the enhancements required by the SRBOP enabling statute. Appendix L contains public comments on the DSEIS and agency responses. Appendix M provides a table listing all of the Project EPMs (as originally presented in the 2013 ROD).

2.0 ALTERNATIVES

2.1 INTRODUCTION

This chapter includes information on how various routes and alternatives for Segments 8 and 9 were developed. It describes the routes that are evaluated in both the 2013 FEIS and in this SEIS, details system components common to all routes/alternatives, compares the key features and effects of the routes studied, and the routes that were not carried forward for detailed evaluation. It also describes conformance with BLM land use plans and identifies the BLM's Preferred Alternative. The BLM conducted detailed analysis, consistent with NEPA, on the initial proposed Project and various routes for Segments 8 and 9 in the 2013 FEIS.

Appendix A (Gateway West Transmission Line Project Maps) contains the figures referenced herein. The Proponents' August 2013 POD, which is Appendix B to the 2013 ROD (BLM 2013b), details the components common to all routes, including construction and operations.

2.2 OVERALL PROJECT

The BLM analyzed Project Segments 1 through 7 and Segment 10 in the 2013 FEIS and authorized these segments in the 2013 ROD. The 2013 ROD deferred the decision to grant ROWs on federal lands for Segments 8 and 9 for the following reasons:

> *…for some portions of the Project the authorizing entities have not been able to agree on an acceptable route. One of these areas involves Segments 8 and 9 and siting in or around the Morley Nelson Snake River Birds of Prey NCA. The EIS analyzes routes located in the NCA and routes that generally avoid the NCA. The principal siting issue involves a requirement in the enabling legislation (Public Law 103-64) that the NCA be managed "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" (Public Law 103-64, Section 3(2)). This requirement differs from state and local government objectives to avoid private lands and site the Project on public land in the NCA.*
>
> *The Proponents' proposal, including environmental protection measures, and BLM standard requirements for surface-disturbing activities for routes in the NCA would conserve and protect NCA resources. However, enhancement components were lacking for routes in the NCA that were analyzed in the Final EIS. As part of their Final EIS comments, the Proponents submitted an "Enhancement Portfolio" for routes located in the NCA. While the Portfolio has merit and the potential to meet the enhancement requirement in the enabling legislation, the BLM needs more time to evaluate and refine it to ensure that it is sufficient.*

As noted in the SRBOP RMP (BLM 2008a):

> *The SRBOP was established in 1993 by P.L. 103-64 and is located in southwestern Idaho, within a 30-minute drive of Boise and almost half of Idaho's population. It encompasses approximately 483,700 public land acres, extending 81 miles along the Snake River. Within the SRBOP boundary are approximately 41,200 State acres, 4,800 privately owned acres, 1,600 military acres, and 9,300 acres covered by water. Since 1979, over 300,000 acres of upland shrub habitat has been lost to fire.*

> *The SRBOP contains the greatest concentration of nesting raptors in North America. About 700 raptor pairs, representing 16 species, nest in the SRBOP each spring, including golden eagles, burrowing owls, and the greatest density of prairie falcons in the world. Eight other raptor species use the area during various seasons.*
>
> *…Prior to authorizing uses, 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 legislation was enacted are allowed to continue to the extent that they are compatible with the purposes for which the SRBOP was established.*

Segment 8 follows a more northerly route toward the Hemingway Substation from the Midpoint Substation, while Segment 9 follows a more southerly route from the Cedar Hill Substation to the Hemingway Substation (Appendix A, Figures A-2 and A-3). The Proponents have proposed this split because of the need to serve customers along each route and to increase system reliability.

2.2.1 Transmission Line and Substation Facilities

The proposed transmission line segments would cross federal, state, and private lands. Table 2.2-1 summarizes miles crossed by ownership for the various routes considered in the SEIS. The ROW width requested for the transmission line is 250 feet for both single-circuit 500-kV segments and double-circuit 500/138-kV segments.

Table 2.2-1. Summary of Miles and Percent Crossed by Project Route

Segment	Length in Miles					Percent of Total[1,2]			
	Total[3]	**BLM[4]**	**State**	**Private**	**Other[5]**	**BLM[3]**	**State**	**Private**	**Other**
Segment 8 Revised Proposed Route	**129.7**	78.4 [17.6]	11.1 [2.0]	35.8 [3.0]	3.9 2.5]	60.5% [13.5%]	8.5% [1.5%]	27.6% [2.3]	3.4% [2.0%]
Route 8G	**146.9**	114.5 [8.8]	13.5 [1.1]	18.9	0.1	77.9% [6.0%]	9.2% [0.8%]	12.9%	–
Route 8H	**137.5**	103.0 [52.4]	14.3 [5.2]	19.7 [3.0]	0.5 [0.2]	74.9% [38.1%]	10.4% [3.8%]	14.3% [2.2%]	0.4% [0.2%]
Segment 9 Revised Proposed Route	**165.3**	142.6 [52.4]	7.5 [5.2]	14.7 [3.0]	0.4 [0.2]	86.3% [31.7%]	4.5% [3.2%]	8.9% [1.8%]	0.2% [0.1%]
FEIS Proposed 9	**162.2**	129.4 [11.1]	4.6 [1.1]	28.3 [1.3]	–	79.8% [6.9%]	2.8% [0.7%]	17.4% [0.8%]	–
Route 9K	**174.6**	156.2 [8.7]	4.6 [1.1]	13.8	–	89.5% [5.0%]	2.6%	7.9%	–
Segment 9 Comparison portion for Toana Road Variations 1/1-A	**8.7**	8.7	–	–	–	100.0%	–	–	–
Toana Road Variation 1	**8.5**	8.2	0.3	–	–	96.5%	3.5%	–	–
Toana Road Variation 1-A	**8.9**	7.8	1.0	–	–	87.6%	11.2%	–	–
Comparison Portion of Alternative 5[6]	**66.1**	58.4	2.5	5.2	–	88.4	3.7	7.9	–
Alternative 5 Helicopter-Assisted Construction Variation[6]	**66.1**	58.4	2.5	5.2	–	88.4	3.7	7.9	–
Alternative 5 WWE Corridor Variation[6]	**62.2**	50.2 [7.0]	2.1	9.6 [2.7]	–	80.7 [11.2]	3.8	15.4 [4.3]	–

Note that values in "[ ]" indicates miles inside the SRBOP (regardless of landownership).

1/ Percentages provided in other chapters of the SEIS may vary slightly due to differences in the Analysis Area used for various resources.
2/ Totals may not equal 100 percent due to rounding.
3/ Mileages are rounded to tenths of a mile throughout table; therefore, rows may not sum exactly.
4/ BLM – Bureau of Land Management
5/ "Other" includes Bureau of Reclamation, U.S. Fish and Wildlife Service, etc.
6/ Distance represents the sum of the 8G and 9K lines placed 250 feet apart.

Project facilities include the following:

- Two transmission line segments, their associated access roads, multipurpose and helicopter fly yards, and other temporary construction ground disturbances;
- Proposed substation and expansions or modifications at two existing substations and at one substation approved under the 2013 ROD; removal of one small existing substation;
- Other associated facilities including communication systems and optical fiber regeneration stations; and
- Access roads and distribution supply lines where needed for proposed substations and optical fiber regeneration stations.

Project substations, structure design alternatives including a summary and comparison of tower types and structure finish and surface treatment alternatives, and components common to all action alternatives are described in Chapter 2 of the 2013 FEIS.

Details of construction and operation modifications and the August 2014 Draft MEP submitted by the Proponents as part of their POD Supplement are included in Appendix C of this FSEIS. Environmental protection plans are included as appendices to the August 2013 POD. All of these plans are considered part of the Project description for the proposed Project. Table 2.2-2 summarizes the proposed facilities.

Table 2.2-2. Summary of Project Facilities

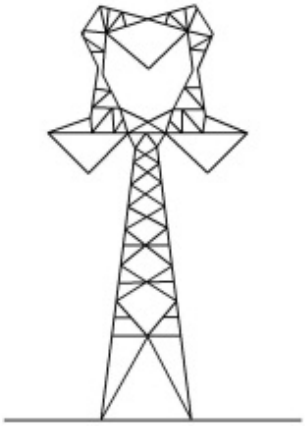
Project Facility	Description
Transmission Line Segments	
Transmission Line Features Common to 500-kV Segments 8 and 9 	• Three-phase 500-kilovolt (kV) construction for all tower designs, conductor spacing and clearances.[1/] • Conductors: Bundled 1949.6 kcmil 42/7 aluminum conductor steel reinforced (ACSR)/TWD “Athabaska/TW,” with three sub-conductors per phase. Non-specular (dull) finish rather than a shiny finish. • Estimated sub-conductor diameter: 1.504 inches. • Bundle spacing: Distance between sub-conductors is 18 inches and 25 inches. • Non-reflective, non-refractive insulators. • One optical ground wire (OPGW) containing 48 fibers and with diameter of 0.637 inch on one side of tower. • One extra high strength (EHS) steel overhead ground wire. • Steel overhead ground wire diameter: approximately 0.495 inch. • Minimum ground clearance: 35 feet. • Structure types: lattice steel single-circuit structures. Dulled galvanized steel finish. • Structure heights: Single-circuit structure varies between 145 and 180 feet. Average height of 156 feet. • Approximate distance between structures: 1,200 to 1,300 feet. • Right-of-way (ROW) width for one single-circuit: 250 feet. • The exact quantity, distance between, and placement of the structures would depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.

Table 2.2-2. Summary of Project Facilities (continued)

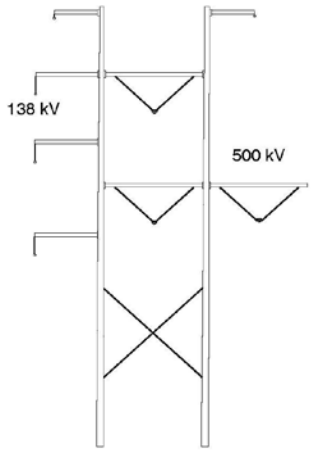
Project Facility	Description
Double-Circuit 500/138-kV portions of Segment 9 in the Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP)  	• Three-phase 138-kV construction for all structure designs, conductor spacing and clearances. • 500-kV Conductor: Bundled 1949.6 kcmil 42/7 ACSR/TWD "Athabaska/TW," with three sub-conductors per phase. Non-specular (dull) finish rather than a shiny finish. o Estimated sub-conductor diameter: 1.51 inches. o 500-kV Bundle spacing: Distance between sub-conductors is 18 inches and 25inches. • 138-kV Conductor: Single 715 kcmil 26/7 aluminum conductor steel reinforced • ACSR "Starling". Non-specular (dull) finish rather than a shiny finish. o Estimated conductor diameter: 1.05 inches • Non-reflective, non-refractive insulators. • One OPGW containing 48 fibers with diameter of 0.64 inch. • One EHS steel overhead ground wire with diameter of 0.50 inch. • Minimum ground clearance: o 138-kV: 24 feet o 500-kV: 35 feet • Structure types: double-circuit steel H-frame structures, dull galvanized or self-weathering steel. • Aboveground structure height: varies between 125 and 200 feet. • Approximate distance between structures: 900 to 1,200 feet. • ROW width: 250 feet • The exact quantity, distance between, and placement of the structures would depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.
Substation Facilities	
Midpoint Substation – Segment 8	• Expansion of existing substation (located on private lands). • Developed acreage: increase the fenced area by approximately 40 acres. • Existing access roads are paved and would not need extension. • 500-kV circuit breakers and related switching equipment, bus and support structures, 500-kV shunt reactor banks, 500-kV series capacitor bank, 500-kV shunt capacitor banks, potential and current transformers. • 500-kV line termination structures approximately 135 feet in height. • Control, protection, and communications equipment added to existing control building. • See Figure A-23 in FEIS Appendix A.

Table 2.2-2. Summary of Project Facilities (continued)

Project Facility	Description
Cedar Hill Substation – Segment 9	• Proposed substation associated with Segments 7 and 10 (located on private lands). • Developed acreage: approx. 54 acres fenced with access road. • Adjacent existing road is gravel and would not need extension. • 500-kV circuit breakers and related switching equipment, bus and support structures, 500-kV shunt reactor banks, 500-kV shunt capacitor banks, potential and current transformers. • 500-kV line termination structures approx. 135 feet in height. • Control, protection, and communications equipment. • Addition of new control building within the substation fenced area. • Up to 5 single circuit 500-kV structure relocations required on existing line from Borah Substation. • See Figure A-15 in FEIS Appendix A.
Hemingway Substation – Segments 8 and 9	• Expansion of existing substation (located on private lands). • Expansion of existing station to add a 500-kV line bay for termination of the Hemingway – Midpoint and the Hemingway – Cedar Hill transmission lines. • All construction would be inside the existing fence line. No additional area is required. • Existing access is adequate. • 500-kV circuit breakers and related switching equipment, bus and support structures, 500-kV shunt reactor banks, 500-kV series capacitor bank, 500-kV shunt capacitor banks, potential and current transformers. • 500-kV line termination structures approximately 135 feet in height. • Control, protection, and communications equipment added to the existing control building.
Ancillary Facilities	
Communications and Control Facilities – Optical Signal Regeneration Sites	• Regeneration sites are required to amplify the system control and monitoring signals carried over the fiber optic cable attached to the transmission structures. • A total of up to 13 regeneration sites would be needed for the Project. Segments requiring regeneration sites are noted in the transmission line section of this summary table. The locations for the regeneration sites are determined after the preferred route is identified and detailed design engineering is completed. • Regeneration sites would be located either within a substation or at another location along the route. • Regeneration sites are located within a 75- X 75-foot fenced area. • Typical building dimensions within the fenced area are 12 feet wide X 32 feet long X 9 feet tall. • The fiber within the OPGW cable supported on the transmission structures is routed in and out of the regeneration site building from the nearest transmission structure either underground or overhead along two independent diverse paths.

Table 2.2-2. Summary of Project Facilities (continued)

Project Facility	Description
	• Electronic equipment, required to support the fiber optic cable installation, is located inside the building. • At sites not within a substation, a liquid propane fueled emergency generator would be installed to provide backup power during an outage of the local electric distribution system supply. • Maximum regeneration site spacing is 55 miles or less depending on access and proximity to local electric distribution lines. • The primary siting criteria for a regeneration site are: adjacent to the Gateway West transmission line ROW, proximity to existing low-voltage electric distribution lines to provide power to the facility, and the ability to easily access the site by vehicle.

1/ Project design follows the Avian Power Line Interaction Committee recommendations. Details for tower construction and components such as conductor spacing are provided in the August 2013 POD (Appendix B of the 2013 ROD) and Appendix B of this FSEIS.

Preconstruction activities for Segments 8 and 9 would involve ground disturbance at laydown yards, at a minimum. The Proponents' 2013 POD assumed that ground disturbing activities would begin in 2017, and that construction would be completed by the Proponents' estimated in-service date of 2020; however, the Proponents have recently updated this estimate to range from 2019 to 2024 (PacifiCorp 2016).

2.2.2 Structure Lighting

Runway Turnoff (RTO) infrared obstruction lights that incorporate both red and infrared light-emitting diodes (LEDs) in a single unit would be installed on every other transmission structure of the Segment 8 Revised Proposed Route along the northern boundary of the Idaho Army National Guard (IDARNG) Orchard Combat Training Center (OCTC) and the Orchard Military Operations Area from MP 91.4 to MP 108.3. The areas on the Segment 9 Revised Proposed Route that would have structure lighting on every other transmission structure include the east side of the Jarbidge Military Operations Area between MP 46.5 through MP 54.4 and along the southwest side of the OCTC and the Orchard Military Operations Area from MP 136.9 to 138.1. Structure lighting would be on every transmission structure between MP 91.2 and MP 95.7 in the Saylor Creek Air Force Range along the Segment 9 Revised Proposed Route. Structure lighting is used to ensure visibility for aircraft pilots, both during normal flight and when aided by night vision systems. Night vision goggles (NVG) and Aviator's Night Vision Imaging System (ANVIS) often employ Class A, B, and C filters. These filters can reduce LED sources that emit light in the visible spectrum. The RTO lights overcome this obstacle by combining visible red LEDs and infrared LEDs in a single unit. This obstruction light system utilizes a unique optical, electrical, and mechanical design. The RTO is a universal, compact, and efficient obstruction light that has been Electrical Testing Laboratories (ETL) certified to Federal Aviation Administration (FAA) requirements. In order to ensure that the intensity of lighting is not so bright as to render the NVGs ineffective, the Proponents propose to use equipment with peak lighting intensities of 860 nanometers for the infrared lights and 30 to 50 candelas for red lighting.

2.3 ALTERNATIVE DEVELOPMENT

In developing the Proposed Route, the Proponents have reported that they considered a number of options, collected data, identified major features on the ground, coordinated with land management agencies and landowners, and tried to minimize issues and effects related to implementing the proposal. Additional details on the process are included in the 2013 FEIS.

The Proponents must meet the WECC minimum reliability criteria for transmission lines to prevent the loss of multiple circuits from a single event such as a wildland fire. This was a major constraint on what alternatives the Proponents proposed. The Proponents proposed locating the Segment 8 line north of the Snake River and the Segment 9 route south of the river to provide greater reliability. See Chapter 1, Section 1.4.2, for more details regarding reliability requirements of the regional and national electrical grid.

The Proponents' overall Project siting approach was to use the WWE corridor and other designated ROW corridors and existing utility corridors where feasible, unless there was a compelling reason not to. In many cases, the proposed routing closely follows the WWE corridor; however, the WWE corridor is only mapped for federal land, and much of the land crossed by the Project is privately owned. In some locations, the WWE corridor is too narrow to allow for the minimum separation requirement from existing transmission lines already in the corridor (see the discussion in Chapter 1, Section 1.3.5 of the FEIS), or no WWE corridor has been designated between required substation interconnections.

The Proponents submitted a Revised Proposed Action in August of 2014 (Appendix B). The Proponents' Revised Proposed Routes for Segments 8 and 9 are based on the routes recommended by the Boise RAC (refer to Section 1.1). Both of the Revised Proposed Routes cross substantial portions of the SRBOP. In addition, the BLM identified alternatives to the Revised Proposed Routes for full analysis in this SEIS, including the Proposed Route for Segment 9 considered in the 2013 FEIS.

As detailed below, seven routes were considered for Segment 8 and 11 routes for Segment 9. Routing options in and near the SRBOP include, among others, alignments to avoid to the greatest extent possible the SRBOP, non-motorized areas, crossings of the Snake River, sage-grouse habitat, historic trails, important archaeological areas, and populated areas. Routing also considered colocation within the WWE corridor. No feasible route was identified that would completely avoid the SRBOP. Any route south of the SRBOP in Idaho 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 the cities of Kuna or Boise. As such, both inside and outside the SRBOP, if a route is chosen, the mitigation hierarchy will be applied to address impacts. With respect to the SRBOP, please see Appendix K which provides a robust analysis of the implementation of the mitigation hierarchy to avoid, minimize, rectify, or reduce impacts over time, and last, to compensate for residual impacts.

2.3.1 Routes Developed by the Proponents

2.3.1.1 FEIS Proposed Routes for Segments 8 and 9

FEIS Proposed Route for Segment 8

The 131.5-mile-long FEIS Proposed Route for Segment 8 proceeds west-northwest, parallel to an existing 230-kV line, passing just north of the juncture of the Jerome, Lincoln, and Gooding County lines near MP 9. This route continues in the same direction, passing between Gooding and Wendell before crossing the Malad River (MP 19.3) and U.S. Highway (US) 26 (MP 23.9) approximately 4.5 miles east of the community of Bliss. Southwest of Pioneer Reservoir, the route angles northwest away from the existing 230-kV corridor at the Gooding County/Elmore County line for approximately 7 miles to avoid impacts to a residence in the Clover Creek area. At MP 42.0 the route rejoins the existing 230-kV corridor about 2.8 miles northeast of King Hill. Between MP 45.8 to MP 48.1 and MP 50.2 to MP 51.1, the FEIS Proposed Route for Segment 8 crosses VRM Class I in an area of multiple transmission lines, and enters the WWE corridor at MP 52.0, deviating up to 2 miles from the 230-kV corridor on private land to avoid wetland impacts in the Bennett Creek area. At MP 58, the route parallels south and west of the existing PacifiCorp 500-kV Summer Lake – Midpoint transmission line offset 1,500 feet for reliability reasons. The route crosses US 20 at MP 68.5 approximately 3.8 miles northeast of Mountain Home. At MP 86.2, the Proposed Route turns west, crossing I-84 at MP 90.2 and the Elmore County/Ada County line at MP 90.9. Continuing west, the FEIS Proposed Route for Segment 8 would be parallel to and approximately 1,500 feet south of the existing Summer Lake – Midpoint 500-kV transmission line for 24.5 miles through the SRBOP.

The route enters the SRBOP at MP 98.8 and continues to the west, then southwest through Ada County. West of Pleasant Valley Road (MP 104.1), the route crosses the Alpha Maneuver Sector for the IDARNG OCTC, which is located within the SRBOP, for 4.7 miles (the route would be within the OCTC low-level flight operations area between approximately MP 92 and MP 108). The IDARNG recommends that, if this route is selected, the transmission structures be equipped with special lights to prevent military aircraft from colliding with the structures during training (see Section 2.2.2 of the FEIS).

At MP 116, the route turns more to the south, away from the existing 500-kV line, crossing the Snake River, the Halverson and Wees Bar Non-Motorized Areas, and a National Register Historic District between MP 117 and MP 120. The Snake River in this area forms the Ada County/Owyhee County line. The route continues southwest another mile and then west around Guffey Butte before intercepting a WWE corridor at MP 124.2 and turning northwest approximately 3.5 miles north of Murphy. The route leaves the SRBOP at MP 126.7 before entering the existing Hemingway Substation. Of its 131.5-mile length, approximately 33 miles are Greenfield and 98.5 miles parallel existing transmission lines.

FEIS Proposed Route for Segment 9

The 162.2-mile-long FEIS Proposed Route for Segment 9 (hereafter referred to as FEIS Proposed 9) proceeds generally west through public and private rangeland along the WWE corridor or projected WWE corridor from the Cedar Hill Substation. Near MP 8,

the route deviates slightly north, and then west again, to minimize impacts to an existing concentrated animal feeding operation (CAFO) about one mile south of the Twin Falls Military Reservation. The route crosses US 93 at MP 17.7 and then continues west, turning northwest at MP 27.9, parallel to the east side of Salmon Falls Creek and adjacent to an existing 138-kV transmission line for about 5 miles. At MP 33, the FEIS Proposed 9 Route crosses 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 (WSA) and a VRM Class I designated viewshed approximately 6 miles south of the community of Castleford. The area crossed is part of an Area of Critical Environmental Concern (ACEC), a Recreation portion of an eligible Wild and Scenic River (WSR). The route was revised between the Draft and Final EIS to cross below the Wild portion of the eligible WSR. Several raptor nest buffers are crossed as the route continues northwest through the Bruneau Desert. At MP 46.6, the route enters Owyhee County and turns to the north between areas of irrigated agriculture along the Twin Falls County/Owyhee County line for about 10 miles before turning northwest at MP 56.5, then into Elmore County (MP 63.4). Between MPs 46.6 and 63.4, the Proposed Route would be just inside the east boundary of the general Jarbidge Military Operations Area. Within the Military Operations Area, 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 to the Gateway West Project and this minor encroachment is acceptable (Postema 2010). However, the Air Force recommends that the transmission structures be equipped with special lights to prevent collisions during training exercises (see Section 2.2.2).

At MP 79.0, the FEIS Proposed 9 Route joins the designated WWE corridor northwest of Deadman Flat, and would enter the SRBOP at MP 88.0. The FEIS Proposed Route parallels the northern boundary of the Saylor Creek Air Force Range for approximately 11.5 miles, passing through the restricted area in the northwest corner of the range between MPs 91.2 and 95.6, less than 0.25 mile south of Bruneau Dunes State Park. 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 FEIS Proposed Route within the restricted Military Operations Area and just to the south of Bruneau Dunes State Park is acceptable with micro-siting and mitigation. As with the Jarbidge Military Operations Area, the Air Force recommends that the transmission structures be equipped with special lights to prevent collisions during training exercises (see Section 2.2.2). The route crosses the Ducks Unlimited Bruneau wetlands conservation area between MPs 99.0 and 99.5. From this point, the FEIS Proposed Route continues generally southwest, leaving the WWE corridor and the projected WWE corridor between MPs 97.8 and 102.3 to cross wetlands and agricultural areas along the Bruneau River and the Bruneau Valley. These include an IP Wetland Conservation Area and the Ducks Unlimited Wetlands Conservation Area.

On the west side of the Bruneau Valley, the route turns northwest, crosses State Route (SR) 51 at MP 104.1, and then continues northwesterly on the southwest side of the Bruneau River, C.J. Strike Reservoir, and SR 78. Between MP 102.3 and the Hemingway Substation, the FEIS Proposed Route follows the WWE corridor on BLM-managed land

but frequently changes direction on private segments to minimize impacts to rural residences, the small communities of Murphy and Oreana, and, as much as possible, cultivated lands. The route re-enters the SRBOP between MPs 142.4 and 146.2 and again between MPs 151.5 and 152.6, mainly within the WWE corridor on BLM-managed land, and then continues north and west into the Hemingway Substation.

The FEIS Proposed 9 Route would not be in conformance with the management direction provided in the SRBOP RMP or the Twin Falls and Bruneau MFPs. The SRBOP RMP would need amendments to allow the Project outside identified utility corridors and to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat. The Twin Falls MFP would need amendments to allow the ROW outside of existing corridors and to allow the Project to cross the Salmon Falls ACEC, changing the VRM to Class III, consistent with the new Jarbidge RMP. The Bruneau MFP would require an amendment to reclassify a VRM Class II area to VRM Class III near Castle Creek. Table 2.3-1 describes the management direction and the associated amendments. Appendix F discusses the associated amendments, and Appendix G provides the analysis and rationale for visual resources amendments.

2.3.1.2 Revised Proposed Routes for Segments 8 and 9

In developing the Revised Proposed Routes for Segments 8 and 9, the Proponents reported that they considered the then ongoing cooperative work with the Boise RAC. The Proponents' revised ROW application and POD reference the RAC's reports on route locations and on mitigation and enhancement in the SRBOP. The RAC reports are located in Appendix H. Based on their review of the RAC work, the Proponents revised the Proposed Route, updated the MEP (August 2014), and revised the standard operating procedures. For each of these Segments, the first approximately 90 to 100 miles are unchanged from the routes shown in the 2013 FEIS (see Figures A-10 and A-11 in Appendix A to the FEIS). Table 2.2-2 above gives a summary of the Project facilities and features of Segment 8 and 9 Revised Proposed Routes.

<u>Segment 8 Revised Proposed Route</u>

General Description and Issues

One single-circuit 500-kV transmission line is proposed between the existing Midpoint Substation and the existing Hemingway Substation, located approximately 30 miles southwest of Boise, Idaho. The line would be constructed using steel lattice towers between 145 and 180 feet tall (Appendix B of this SEIS). Appendix A, Figure A-3 in this SEIS shows the Segment 8 Revised Proposed Route. The Revised Proposed Route is 129.7 miles long and therefore two optical signal regeneration sites would be needed along the route. Final locations for regeneration stations would be determined after detailed design engineering is completed. 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. It would also cross the Snake River north of Guffey Butte, instead of south as in the 2013 FEIS. The first 91.4 miles of the route is unchanged from the 2013 FEIS Proposed Route.

Based on changes in the WECC reliability criteria (see Section 2.3.1.4 for more details), the RAC Subcommittee recommended a separation reduction across the SRBOP, and the Proponents incorporated that change into a 28.7-mile portion of the Segment 8 Revised Proposed Route, making the 250-foot separation a design feature. Figure 2.3-1 shows the reduced line separation ROW design and location of reduced separation to the existing Midpoint to Hemingway line.

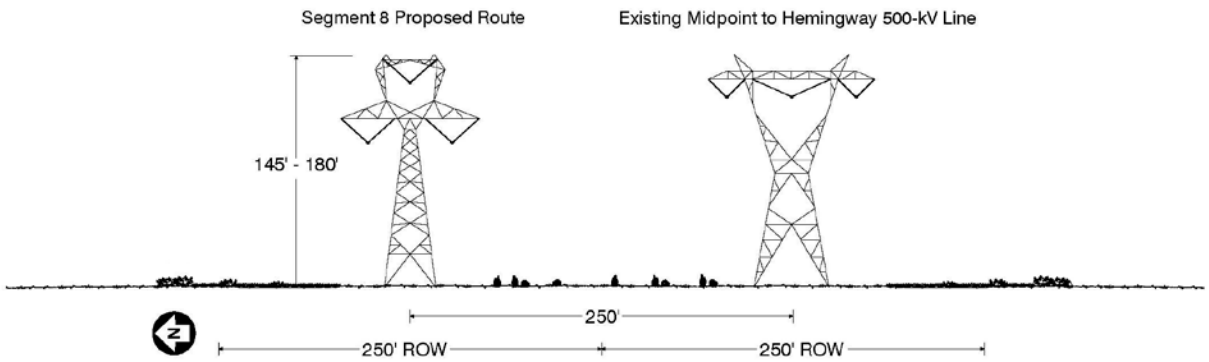


Figure 2.3-1. Proposed Reduced Line Separation ROW Design

The Proponents plan to use existing roads near and beneath the existing 500-kV transmission line to minimize the overall disturbance footprint of the new line. Rather than constructing a completely new access road network for the Segment 8 Revised Proposed Route, they would use short spur roads from existing roads to provide access to new towers.

Key factors considered in routing this segment included using the WWE corridor where possible, conflicts with agricultural lands, residential development, visual resources, the SRBOP, slickspot peppergrass, the Halverson Bar and Wees Bar Non-motorized areas, a National Register Historic District, and the IDARNG OCTC. Key factors considered since the 2013 FEIS included impacts to communities, agriculture, and private property in the Kuna and Melba areas of Ada, Canyon, and Owyhee Counties; critical habitat for slickspot peppergrass; and the OCTC Alpha Sector. The 129.7-mile-long Revised Proposed Route is within the WWE corridor for 33.8 miles and adjacent to existing transmission corridors for 117.1 miles.

Revised Proposed Route 8 Description

The 129.7-mile-long Revised Proposed Route proceeds west-northwest from the Midpoint Substation, parallel to an existing 230-kV line, passing just north of the juncture of the Jerome, Lincoln, and Gooding County lines near MP 9. The route continues in the same direction still adjacent to the existing 230-kV line, passing between the communities of Gooding and Wendell across irrigated agriculture, before crossing the Malad River (MP 19.3) and US 26 (MP 23.9) approximately 4.5 miles east of the community of Bliss. Southwest of Pioneer Reservoir, the route angles northwest away from the existing 230-kV corridor at the Gooding County/Elmore County line for approximately 7 miles to avoid impacts to a residence in the Clover Creek area. At MP 42.0, the route rejoins the existing 230-kV corridor about 2.8 miles northeast of King Hill.

Between MP 45.8 to MP 48.1 and MP 50.2 to MP 51.1, the Revised Proposed Route crosses Visual Resource Management (VRM) Class I in an area of multiple transmission lines, and enters the WWE corridor at MP 52, deviating up to 2 miles from the 230-kV corridor on private land to avoid wetland impacts in the Bennett Creek area. At MP 58, the route parallels south and west of the existing PacifiCorp 500-kV transmission line offset 1,500 feet. The route crosses US 20 at MP 68.5 approximately 3.8 miles northeast of Mountain Home. At MP 86.2, the Proposed Route turns west away from the existing 500-kV corridor to avoid a subdivision in the Mayfield area, before crossing Interstate (I) 84 at MP 90.2 and the Elmore County/Ada County line at MP 90.9.

Continuing west at MP 91.4, the Revised Proposed Route for Segment 8 again parallels approximately 1,500 feet south of the existing 500-kV transmission line, before turning northward at MP 97 and crossing the existing 500-kV line at MP 97.7. Beginning at MP 97.7, the Revised Proposed Route parallels 250 feet north of the existing 500-kV line the remaining 32 miles across the SRBOP and into the Hemingway substation. At MP 99.7, the alignment crosses into the SRBOP, and follows the existing 500-kV transmission line for approximately 8 miles, north of the boundary to the IDARNG OCTC. At MP 104.2, the alignment crosses Pleasant Valley Road, and continues west for another 3.5 miles. To avoid new agricultural impacts on private property, and to minimize impacts to the OCTC's tank maneuver "Alpha Sector," at MP 107.6 the alignment shifts south 250 feet and assumes the existing ROW of the 500-kV transmission line. A 1.1-mile section of the existing 500-kV line would be decommissioned and rebuilt 250 feet to the south. This rebuilt portion would be 250 feet inside of the OCTC Alpha Sector, crossing 0.5 mile. At MP 108.2, the two routes resume their previous alignments, with the Proposed Route 250 feet north of the existing 500-kV line. The route crosses Swan Falls Road at MP 113.7 and the existing Bowmont to Canyon Creek 138-kV transmission line at MP 114.4. At MP 118.4, the alignment turns west (still parallel to the existing line), leaving the SRBOP at MP 118.7, and crosses 2 miles of irrigated agriculture and in close proximity to several CAFOs along the Canyon and Ada County lines. The Revised Proposed Route re-enters the SRBOP at MP 120.7, north of Celebration County Park, before crossing the Snake River still adjacent to the existing 500-kV line between MP 122.4 and 122.8 at the southern end of Noble Island. The alignment then turns northwest leaving the SRBOP at MP 123.7, and parallels the existing line for approximately 5 miles (crossing Hemingway Butte near MP 126.6), before turning north through the existing China Gulch subdivision on land owned by Idaho Power and into the Hemingway Substation.

Several plan amendments would be needed to make the Revised Proposed Route conform to BLM land use plans in effect in the area: the Kuna MFP, SRBOP RMP, 1987 Jarbidge RMP, and the Bennett Hills/Timmerman Hills MFP. The Kuna MFP would need an amendment to allow the transmission line outside of existing corridors. The SRBOP RMP would need amendments to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat, and to allow a new utility corridor across the northern portion of the SRBOP between MP 99 and MP 124.5, as well as between MPs 65.7 and 67.7. While there is a corridor adjacent to the Revised Proposed Route between MPs 65.7 and 67.7, it is a narrower 1,000 feet in the SRBOP, as opposed to the 3,000 feet on either side; it

therefore does not include the alignment for the Revised Proposed Route and an amendment would be needed. In addition, the Revised Proposed Route would not be in conformance with the management direction provided in the Bennett Hills/Timmerman MFP, and an amendment would be needed to allow the route near archeological sites and to change VRM classes. The route would not be in conformance with the 1987 Jarbidge and would need amendments to change the VRM Classes, cross the Oregon Trail, and change a utility avoidance/restricted area designation. Table 2.3-1 provides a summary of existing management and proposed amendments for this route. Appendix F provides the associated amendments and documentation, and Appendix G provides the analysis and rationale for visual resources amendments.

Segment 9 Revised Proposed Route

General Description and Issues

One single-circuit 500-kV transmission line is proposed between the proposed Cedar Hill and the existing Hemingway Substations. The line would be constructed using 500-kV single-circuit lattice steel structures between 145 and 180 feet tall and H-frame 500/138-kV structures in the areas to be double-circuited (Appendix B to this FSEIS). Appendix A, Figure A-4 of this SEIS provides details on the transmission line route between the Cedar Hill and Hemingway Substations. The Segment 9 Revised Proposed Route is 165.3 miles long and therefore would require two optical signal regeneration sites along its route. Final locations for regeneration stations would be determined after detailed design engineering is completed. The 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/G 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/G between MP 141.2 to 154.7. The Revised Proposed Route crosses the Snake River south of Sinker Butte, whereas the 2013 FEIS Proposed Route did not cross the Snake River. From MP 154.7 to the Hemingway Substation, the route is the same as the 2013 FEIS Proposed Route.

As part of their evaluation, the RAC Subcommittee asked the Proponents about the feasibility of co-locating (which in this case refers to double-circuiting) 5.4 miles of the existing C.J. Strike – Bruneau Bridge and 20.2 miles of the Bowmont – Canyon Creek 138-kV transmission lines and on the same structures with the Segment 9 Revised Proposed Route's single-circuit 500-kV line. The Proponents reported that double circuiting would be feasible and have incorporated this change into the proposed Project, making double circuiting a design feature. The Bowmont – Canyon Creek 138-kV line is under the authority of the FERC; therefore, the Proponents would need to obtain FERC approval for reconstructing the line.

Table 2.2-2 above describes facility features portion of the Segment 9 Revised Proposed Route in the SRBOP that would be double circuited. Figure 2.3-2 shows a

sketch of the proposed double-circuit 500/138- kV structure, while Figure 2.3-3 shows the ROW design configuration for the double-circuit 500/138-kV structure compared to the existing 138-kV structure for the portion of the Segment 9 Revised Proposed Route within the SRBOP.

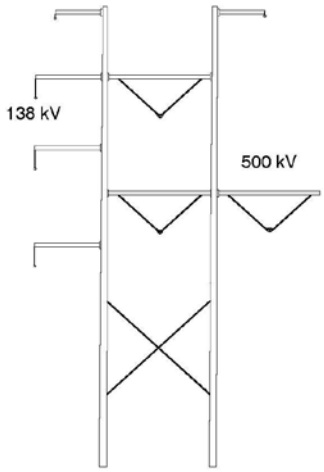


Figure 2.3-2. Proposed Double-Circuit 500/138-kV Structure

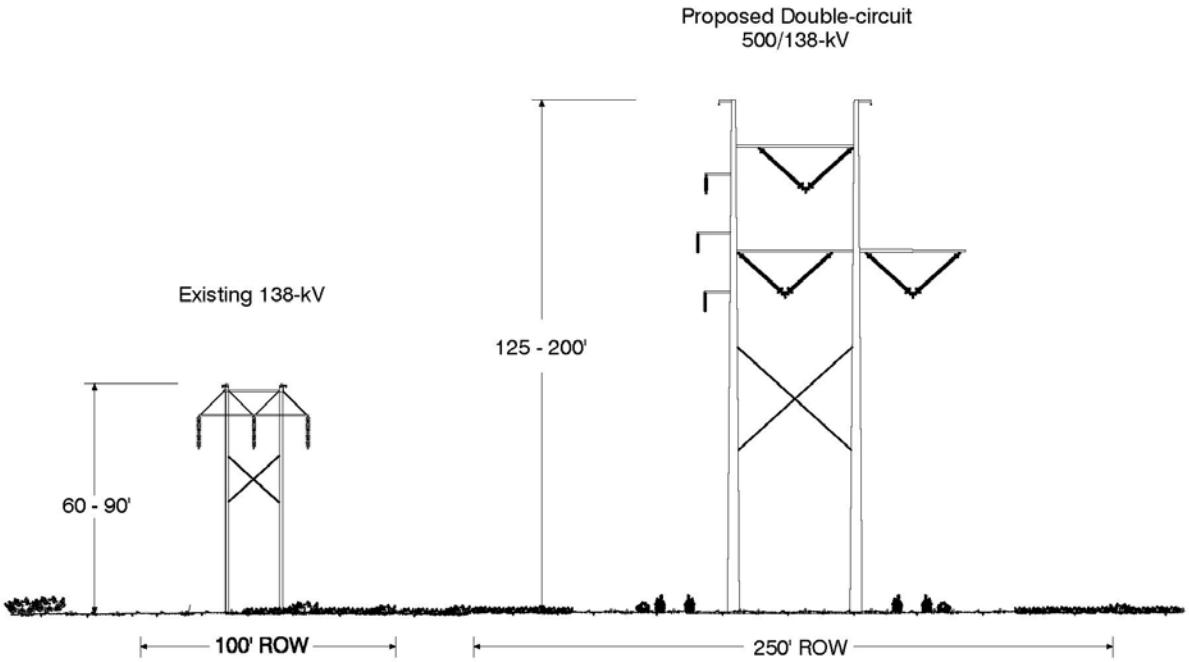


Figure 2.3-3. Proposed ROW Design Configuration for Double-Circuit 500/138-kV Structure Compared to Existing 138-kV Structure

Key factors considered in routing this segment were agricultural and residential development in Owyhee County, visual resources, the Jarbidge Military Operations Areas, Saylor Creek Air Force Range, Mountain Home Air Force Base (AFB), Balanced

Rock County Park, Bruneau Dunes State Park, the Cove Non-Motorized Area, greater sage-grouse leks and priority habitat, and the Salmon Falls Creek WSR, as described in the 2013 FEIS. Key factors considered since the 2013 FEIS included the amount of new road that would be constructed and maintained within the SRBOP and in unroaded areas in Owyhee County, and minimizing the construction of transmission towers and roads near sage-grouse leks, and within sage-grouse habitat.

Revised Proposed Route 9 Description

The 165.3-mile-long Revised Proposed Route was proposed as a modification of the action proposed and analyzed in the FEIS as Route 9D/9G.

This option would double circuit the new 500-kV line with existing 138-kV lines for most of the distance through the SRBOP. The new line would incorporate and replace existing FERC 138-kV lines near C.J. Strike Reservoir in Owyhee County and along Baja Road on public land in Ada and Elmore counties. The line would cross the Snake River in two locations: below C.J. Strike Dam (MP 113 to 113.3), and again above Swan Falls, near Sinker Butte (MP 143 to 143.5), where an existing 138-kV transmission line already crosses the Snake River. The new 500-kV line would traverse public land on Murphy Flat, avoiding historic Oregon Trail ruts. It would cross Highway 78 north of the Rabbit Creek Trailhead at MP 153.4, and continue north to the Hemingway Substation, outside of preliminary priority sage-grouse habitat.

The Revised Proposed Route for Segment 9 proceeds generally west through public and private rangeland along the WWE corridor or projected WWE corridor from the Cedar Hill Substation. Near MP 8, the route deviates slightly north, and then west again, to minimize impacts to an existing CAFO about 1 mile south of the Twin Falls Military Reservation. The route crosses US 93 at MP 17.7 and then continues west, turning northwest at MP 27.9, parallel to the east side of Salmon Falls Creek and adjacent to an existing 138-kV transmission line for about 5 miles. At MP 33, the Proposed Route crosses 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 and a VRM Class I designated viewshed approximately 6 miles south of the community of Castleford. The area crossed is part of an ACEC, which is a Recreation portion of an eligible WSR. The route was revised between the Draft and Final EIS to cross below the Wild portion of the eligible WSR. Several raptor nest buffers are crossed as the route continues northwest through the Bruneau Desert. At MP 46.6, the route enters Owyhee County and turns to the north between areas of irrigated agriculture along the Twin Falls County/Owyhee County line for about 10 miles before turning northwest at MP 56.5, then into Elmore County (MP 63.4). Between MP 46.6 and MP 63.4, the Revised Proposed Route would be just inside the east boundary of the general Jarbidge Military Operations Area. Within the Military Operations Area, 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 to the Gateway West Project and this minor encroachment is acceptable (Postema 2010). However, the Air Force recommends that the transmission structures be equipped with special lights to prevent collisions during training exercises (see Section 2.2.2).

At MP 79.0, the Revised Proposed Route joins the designated WWE corridor northwest of Deadman Flat, and would enter the SRBOP at MP 88.0. The alignment parallels the northern boundary of the Saylor Creek Air Force Range for approximately 11.5 miles, passing through the restricted area in the northwest corner of the range between MP 91.2 and MP 95.6, less than 0.25 mile south of Bruneau Dunes State Park.

Beginning south of Bruneau Dunes State Park, within the SRBOP, the route leaves the established utility corridor in a northwesterly direction, crossing SR 51 at MP 100.1, and leaving the SRBOP at MP 102.3. At MP 105.1, the route re-enters the SRBOP, double-circuiting with the existing C.J. Strike – Bruneau Bridge 138-kV transmission line in the current ROW at MP 106.2 for approximately 3.1 miles (the existing 138-kV structures would be removed). At MP 109.4, the two circuits separate to permit a more feasible crossing of the Narrows between C.J. Strike Reservoir and the Bruneau Arm. On the west side of the Bruneau River, the two lines again become a double circuit at MP 110 across the Cove non-motorized and recreation areas, and continue west approximately 2 miles to the C.J. Strike Dam, where the lines again separate at MP 112 and the existing 138-kV line enters a substation at the dam. The Revised Proposed Route parallels approximately 200 feet west of an existing double-circuit 138-kV line to the north for 3.5 miles, crossing the Snake River below the C.J. Strike Dam between MP 113 and 113.3. At MP 116.5, the alignment shifts west, and then north again, to avoid encroachment in the Mountain Home AFB controlled airspace, and to avoid new impacts to private agricultural lands. At MP 120.4, the alignment crosses the Grand View Highway (SR 167), and then joins the existing Bowmont to Canyon Creek 138-kV transmission line in a new double-circuit alignment along the south side of the Big Baja Road at MP 121. The new double-circuit alignment proceeds northwest, generally parallel to Big Baja Road for 18.5 miles and adjacent to the southern boundary of the OCTC between MP 127 and 138.1, for approximately 21 miles to a location southeast of Swan Falls and north of Tick Basin. The corresponding 21 miles of existing 138-kV line would be decommissioned and existing structures removed (existing structures with raptor nests and/or nest boxes may be left). At the location south of Swan Falls, the two circuits separate before crossing the Snake River canyon between MP 143 and 143.5 near the existing Sinker Creek to Tap 138-kV transmission line crossing south of Sinker Butte. On the west side of the canyon, the route turns briefly south, parallel to the existing 138-kV line, and then turns west adjacent to the existing Sinker Creek substation access road across Murphy Flat. At MP146.5, the route turns northwest along the east and west faces of several low hills to minimize impacts to irrigated agriculture and to the Oregon NHT. Near MP 151.6, the route descends off of Murphy Flat at the Murphy Rim and crosses the Con Shea Road north of Murphy. After crossing SR 78 at MP 153.4 north of the Rabbit Creek trailhead, the alignment continues in a northwesterly direction for approximately 9.5 miles, entering into the Hemingway Substation along the western edge of the China Ditch subdivision and adjacent to Reynolds Creek. Approximately 0.6 mile of the existing 500-kV line would be rebuilt in order to allow both the Gateway West and the existing 500-kV lines to enter the Hemingway Substation.

The Segment 9 Revised Proposed Route would not be in conformance with the management direction provided in the 1987 Jarbidge and SRBOP RMPs, nor the Twin

Falls MFP. The 1987 Jarbidge RMP would need an amendment for visual resources, changing VRM Class II to VRM Class III, for areas still managed under that plan. The SRBOP RMP would need amendments to allow the project in the Cove non-motorized area, to change VRM Class II areas to VRM Class III and allow a crossing of the Oregon Trail, to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat, to cross outside of existing utility corridors within the SRBOP, and to allow the Project within the C.J Strike and Snake River SRMAs. The Twin Falls MFP would need amendments to allow the ROW outside of existing corridors and to allow the Project to cross the Salmon Falls ACEC, changing the VRM to VRM Class III, consistent with the new Jarbidge RMP. Table 2.3-1 describes the management direction and the associated amendments. Appendix F provides the associated amendments, and Appendix G provides the analysis and rationale for the visual resource amendments.

2.3.1.3 Proponent-Proposed Mitigation and Enhancement Portfolio

To authorize a ROW under FLPMA through any portion of the SRBOP, the BLM must demonstrate that: 1) the use is compatible with the enabling statute of the SRBOP; 2) impacts to the SRBOP have been avoided or minimized to the greatest extent possible; and 3) enhancement will result in a net benefit to the SRBOP for the duration of the ROW permit (BLM 2008a).

The Proponents have developed a draft MEP (August 2014) aimed at offsetting impacts to resources and values and enhancing the resources and values found in the SRBOP (see Appendix C). The Proponents' Draft MEP includes both compensatory mitigation and enhancement components that collectively are design features of their proposal. The compensatory mitigation addresses the remaining impacts that persist after all other design features have been implemented. Remaining impacts are defined in Section 3.0. Specifically, the MEP includes:

- avoidance and minimization through routing and environmental protection measures (EPMs);
- mitigation that requires so-called "enhancement ratios" designed to rectify direct impacts beyond standard mitigation;
- restoration efforts consistent with SRBOP required mitigation goals and objectives;
- visitor enhancement activities;
- reclamation and project-wide compensatory mitigation;
- removal of existing power lines and substation within the SRBOP;
- purchase of high-priority private inholdings in the SRBOP; and
- improved funding of law enforcement.

2.3.1.4 Modification to WECC Criteria

At the time the routes were being developed for the original Gateway West EIS in 2008, the WECC recommended that high-voltage transmission lines be separated by at least "the longest span length of the two transmission circuits at the point of separation or 500

feet, whichever is greater, between the transmission circuits" (WECC 2008). For Gateway West, the longest span length was assumed to be 1,500 feet, thereby dictating the minimum distance between existing and proposed transmission lines serving the same load.

The regional transmission planning criteria and guidelines were derived from planning standards developed by the NERC and were designed to reduce the risk of the following:

- a tower falling into an adjacent line;
- a snagged shield wire dragged into adjacent line;
- an aircraft flying into more than one circuit;
- fire, smoke, or dust shorting more than one circuit; or
- lightning strikes affecting more than one line.

In December 2011, the WECC and the WECC Board of Directors relaxed the regional transmission planning criterion to a minimum of 250 feet from an existing line. This change became effective in April 2012. The separation of transmission lines within a common corridor or lines serving the same load is measured between the centerlines of the transmission lines.

All utilities participating in the WECC are still responsible for preventing outages and must use the best available planning and engineering to estimate the risk of outages regardless of separation. Under certain limited circumstances, the Proponents have considered reducing the separation between high-voltage lines for limited distances and under restricted circumstances. Restricted circumstances could include, but would not be limited to, steep topography, geologic hazards, avoiding cultural sites or existing developments, crossing other transmission lines, or when approaching a substation.

2.3.2 Other Routes Considered in the SEIS

2.3.2.1 Segment 8 Routes

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. 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 Revised Proposed Route.

From the Midpoint Substation, Route 8G proceeds due west parallel to and 250 feet north of the existing 500-kV transmission line. The route passes approximately 4 miles north of Wendell, 7.3 miles south of Gooding, and 1 mile north of Hagerman through residential and agricultural development. The route crosses I-84 (MP 20) approximately

4 miles east of Hagerman. At the Gooding/Twin Falls County line (MP 26.6), the route crosses the Snake River north of the existing 500-kV line, Lower Salmon Falls Dam, and multiple lower voltage transmission lines, approximately 1.0 to 1.25 miles north of Hagerman Fossil Beds National Monument. From there it continues west, remaining 250 feet north of and parallel to the existing 500-kV line, within the WWE corridor on public land, across areas of extensive wind energy development to the Twin Falls/Elmore County line (MP 31.2). At MP 26.6, approximately 1.9 miles of the existing 500-kV transmission line would be rebuilt 250 feet to the south to avoid existing agricultural and windfarm infrastructure on private land, and Route 8G would follow the current alignment for the existing 500-kV line.

At MP 31.8, the route leaves the existing 500-kV line and continues west for 4 miles, still within the WWE corridor. At MP 44, Route 8G turns northwest and parallels 250 feet north of Segment 9 Revised Proposed Route for approximately 22.5 miles, still within the WWE corridor on public land. At MP 67.1, the route proceeds due south and parallels 250 feet north of Route 9K through Owyhee County for 73 miles. At MP 105, the route turns north for approximately 7 miles, crossing Birch Creek near MP 107, before turning west and crossing areas of irrigated agricultural and residential development along Castle Creek between MP 112.2 to 114. At MP 115.4, the route turns north again, crossing additional areas of irrigated agricultural and residential development along Catherine Creek near MP 115.7. At MP 116.9, the route proceeds northwest, parallel to Highway 78 north of Oreana where it rejoins the WWE corridor at MP 119.5. At MP 122.3, the route leaves the WWE corridor and continues northwest to avoid crossing the SRBOP. Between MP 125 to 126, the route crosses Sinker Creek before continuing north along the western edge of the SRBOP. From MP 131.3 to 140, the route continues northwest approximately 2 miles west of Murphy where it rejoins and follows 250 feet north of the Segment 9 Revised Proposed Route for 3 miles. The route then turns north for 2 miles to the Hemingway Substation.

Plan amendments would be needed for the SRBOP RMP and the Bruneau MFP to make Route 8G conform with BLM land use plans in effect. The route would require an amendment to cross outside of existing utility corridors within the SRBOP, and to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat. An amendment would be needed to change a VRM Class II area near Castle Creek to VRM Class III in the Bruneau MFP planning area. Table 2.3-1 describes the management direction and the associated amendments. Appendix F provides the associated amendments and documentation, and Appendix G provides the analysis and rationale for the visual resource amendments.

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 follow the 8G alignment; the remainder of 8H follows the alignment of the Segment 9 Revised Proposed Route.

From the Midpoint Substation, 8H proceeds due west parallel to, and 250 feet north of, the existing 500-kV transmission line. The route passes approximately 4 miles north of Wendell, 7.3 miles south of Gooding, and 1 mile north of Hagerman through residential and agricultural areas. The route crosses I-84 (MP 20) approximately 4 miles east of Hagerman. At the Gooding/Twin Falls County line (MP 26.6), the route crosses the Snake River north of the existing 500-kV line, Lower Salmon Falls Dam, and multiple lower voltage transmission lines, approximately 1.0 to 1.25 miles north of Hagerman Fossil Beds National Monument. Also, beginning at MP 26.6, approximately 1.9 miles of the existing 500-kV transmission line would be rebuilt 250 feet to the south to avoid existing agricultural and windfarm infrastructure on private land, and 8H would follow the current alignment for the existing 500-kV line. The route continues west, remaining 250 feet north of and parallel to the existing 500-kV line, within the WWE corridor on public land, across areas of extensive wind energy development to the Twin Falls/Elmore County line (MP 31.2).

At MP 31.8, the route leaves the existing 500-kV line and continues west for 4 miles, still within the WWE corridor. At MP 44, 8H turns northwest and follows the Segment 9 Revised Proposed Route alignment for approximately 22.5 miles, still within the WWE corridor on public land. At MP 67.0, the route proceeds northwest along the Segment 9 Revised Proposed Route through Owyhee County to the Hemingway Substation. Beginning south of Bruneau Dunes State Park, within the SRBOP, the route leaves the established utility corridor in a northwesterly direction, crossing SR 51 at MP 72.4 and leaving the SRBOP at MP 73.6. At MP 76.4, the route re-enters the SRBOP, double circuiting with the existing C.J. Strike – Bruneau Bridge 138-kV transmission line in the current ROW at MP 77.5 for approximately 3.1 miles (the existing 138-kV structures would be removed). At MP 80.6, the two circuits separate to permit a more feasible crossing of the Narrows between C.J. Strike Reservoir and the Bruneau Arm. On the west side of the Bruneau River, the two lines again become a double circuit at MP 81.6 across the Cove non-motorized and recreation areas, and continue west approximately 2 miles to the C.J. Strike Dam, where the lines again separate at MP 83.6 and the existing 138-kV line enters a substation at the dam. Route 8H parallels approximately 200 feet west of an existing double-circuit 138-kV line to the north for 3.5 miles, crossing the Snake River below the C.J. Strike Dam between MPs 84.6 and 85. At MP 87.8, the alignment shifts west, and then north again, to avoid encroachment in the Mountain Home AFB–controlled airspace, and to avoid new impacts to private agricultural lands. At MP 91.7, the alignment crosses the Grand View Highway (SR 167), and then joins the existing Bowmont to Canyon Creek 138-kV transmission line in a new double-circuit alignment along the south side of the Big Baja Road at MP 92.7. The new double-circuit alignment proceeds northwest, generally parallel to Big Baja Road for 18.5 miles and adjacent to the southern boundary of the OCTC between MP 98.2 and 109.3, for approximately 21 miles to a location southeast of Swan Falls and north of Tick Basin. The corresponding 21 miles of existing 138-kV line would be decommissioned and existing structures removed (existing structures with raptor nests and/or nest boxes may be left). At the location south of Swan Falls, the two circuits separate before crossing the Snake River canyon between MPs 114.3 and 114.8 near the existing Sinker Creek – Tap 138-kV transmission line crossing south of Sinker Butte. On the west side of the canyon, the route turns briefly south, parallel to the existing 138-kV line, and then turns

west adjacent to the existing Sinker Creek Substation access road across Murphy Flat. At MP 117.7, the route turns northwest along the east and west faces of several low hills to minimize impacts to irrigated agriculture and to the Oregon NHT. Near MP 123, the route descends off of Murphy Flat at the Murphy Rim and crosses the Con Shea Road north of Murphy. After crossing SR 78 at MP 124.6 north of the Rabbit Creek trailhead, the alignment continues in a northwesterly direction for approximately 9.5 miles, entering into the Hemingway Substation along the western edge of the China Ditch subdivision and adjacent to Reynolds Creek. Approximately 0.6 mile of the existing 500-kV line would be rebuilt in order to allow both the Gateway West and the existing 500-kV lines to enter the Hemingway Substation.

Route 8H would not be in conformance with the management direction provided in the 1987 Jarbidge RMP and the SRBOP RMP, and therefore amendments would be needed to each plan. Within the 1987 Jarbidge RMP planning area, an amendment would be needed to change the VRM classification from VRM Class II to VRM Class III. The route would require amendments to the SRBOP RMP to allow the Project in the Cove non-motorized area, to change VRM Class II areas to VRM Class III and allow a crossing of the Oregon Trail, to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat, to cross outside of existing utility corridors within the SRBOP, and to allow the Project within the C.J Strike and Snake River SRMAs. Table 2.3-1 describes the management direction and the associated amendments. Appendix F provides the associated amendments and documentation, and Appendix G provides the analysis and rationale for the visual resource amendments.

2.3.2.2 Segment 9 Routes

FEIS Proposed 9

FEIS Proposed 9 is the essentially the same as the route analyzed in the 2013 Gateway West FEIS. It is described above in Section 2.3.1.1. The 162.2-mile-long route in Segment 9 was designed to follow existing utility corridors and avoid the SRBOP 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. Like the Revised Proposed Route, FEIS Proposed 9 crosses 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 would not be in conformance with the management direction provided in the SRBOP RMP or the Twin Falls and Bruneau MFPs. The SRBOP RMP would need amendments to allow the Project outside identified utility corridors and to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat. The Twin Falls MFP would need amendments to allow the ROW outside of existing corridors and to allow the Project to cross the Salmon Falls ACEC, changing the VRM to Class III, consistent with the new Jarbidge RMP. The Bruneau MFP would require an amendment to reclassify a VRM Class II area to VRM Class III near Castle Creek. Tables 2.3-1 describes the management direction and the associated amendments. Appendix F discusses the associated amendments, and Appendix G provides the analysis and rationale for visual resources amendments.

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. The route was modified to minimize direct and indirect impacts to priority sage-grouse habitat that would have occurred under 9E. The route is approximately 174.6 miles long, compared to the 165.3-mile-long Segment 9 Revised Proposed Route.

From the proposed Cedar Hill Substation, Route 9K follows the Segment 9 Revised Proposed Route for 95.6 miles. At MP 72.7, the route begins to parallel 250 feet south of Route 8G, and continues to parallel it for approximately 98.9 miles to the Hemingway Substation. At MP 95.6, the route turns south and generally follows the alignment for FEIS Route 9E for 24.4 miles. At MP 133.8, the route turns north for approximately 7 miles, crossing Birch Creek near MP 135.7, before turning west and crossing areas of irrigated agricultural and residential development along Castle Creek between MP 141 to 143. At MP 144.1, the route turns north again, crossing additional areas of irrigated agricultural and residential development along Catherine Creek near MP 144.5. At MP 145.6, the route proceeds northwest, parallel to Highway 78 north of Oreana where it rejoins the WWE corridor at MP 148.1. At MP 150.9, the route leaves the WWE corridor and continues northwest to avoid crossing the SRBOP. Between MPs 153.7 and 154.7, the route crosses Sinker Creek before continuing north along the western edge of the SRBOP. At MP 160.1, the route rejoins FEIS Route 9E for the remaining 14 miles into the Hemingway Substation.

Plan amendments would be needed for the SRBOP RMP, and Twin Falls and Bruneau MFPs to make Route 9K conform with BLM land use plans in effect. Route 9K would require an amendment of the SRBOP RMP to cross outside of existing utility corridors within the SRBOP to permit surface-disturbing activity within 0.5 mile of sensitive plant habitat. The Twin Falls MFP would need amendments to allow the ROW outside of existing corridors and to allow the Project to cross the Salmon Falls ACEC, changing the VRM to VRM Class III, consistent with the new Jarbidge RMP. An amendment would be needed to change a VRM Class II area near Castle Creek to VRM Class III in the Bruneau MFP planning area. Table 2.3-1 describes the management direction and the associated amendments. Appendix F provides the associated amendments and documentation, and Appendix G provides the analysis and rationale for the visual resource amendments.

2.3.2.3 Route Variations

Toana Road Variation 1 to 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 to avoid paralleling the Toana Freight Wagon Road, a National Register historic site. After the 2013 FEIS, BLM archaeologists determined that the Proposed Route paralleled within 0.25 mile of the Toana Road for between MP 38.2 and 40.6, and paralleled within 1 mile of the road through Blue Gulch between MP 40.6 and 43.5. Variation 1 is approximately 8.5 miles long. It deviates from the Proposed Route at MP 38.2 (9d), crossing the Toana Freight Wagon Road at MP 0.3, and continuing in a westerly direction an additional 1.7 miles. The variation then turns north along the base of Castleford Butte and continues an additional 7 miles before

rejoining the Proposed Route at MP 46.8 (9e), near Balanced Rock Road. Approximately 0.3 mile of the route crosses state land; the remainder of the route is on land managed by the BLM.

Toana Road Variation 1-A to the Segment 9 Revised Proposed Route

The Toana Road Variation 1-A to the Segment 9 Revised Proposed Route was also recommended by the BLM to minimize visual impacts to the Toana Freight Wagon Road, but also to utilize existing roads and to minimize new road construction in the area. Variation 1-A also deviates from the Proposed Route at MP 38.2 and follows the same alignment as Variation 1 for the first 2 miles before turning north (9d1). At MP 3.6, the variation crosses, and then closely parallels, Kinyon Road an additional 3.4 miles. At MP 7, the alignment turns to the northwest for 1.8 miles, rejoining the Proposed Route at MP 46.8 (9e), near Balanced Rock Road. Variation 1-A is approximately 8.9 miles long. Approximately 1 mile of the route crosses state land; the remainder is on land managed by the BLM.

2.3.3 Action Alternatives Considered in the SEIS

The BLM has developed seven action alternatives that each consist of a different combination of route options along Segments 8 and 9. This SEIS assesses each individual route option along Segments 8 and 9 independently, as well as when these routes are combined within these seven BLM action alternatives. The SEIS' assessment of individual route options considers these various routes as a separate project segment, and all aspects of the Project that would be connected to that segment are disclosed by route, such as access roads and temporary staging areas. However, there would be some overlap between Project components when considering routes for both Segments 8 and 9 together within the seven action alternatives. For example, some access roads may be used for both Segments 8 and 9 in some places, depending on the specific route considered. As a result, minor changes to some of the Project roads or temporary work areas may be needed. For example, 8G and 9K would follow the same alignment for the majority of the route under Alternative 5 (described below).

The seven BLM action alternatives are displayed in Figures 2.3-4a through 2.3-4g. Each of the seven action alternatives are analyzed with and without the Toana Road Variation 1 and Toana Road Variation 1-A.

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

Alternative 1 is the Proposed Action, and consists of the Project as designed and developed by the Proponents (see Figure 2.3-4a). It includes the Proponents' revised route for Segments 8 and 9, as described in Section 2.3.1. Alternative 1 has a combined length of 295 miles. It would require removal of existing transmission line along a total of 26.8 miles. Approximately 83.3 miles of this alternative would be within the SRBOP.

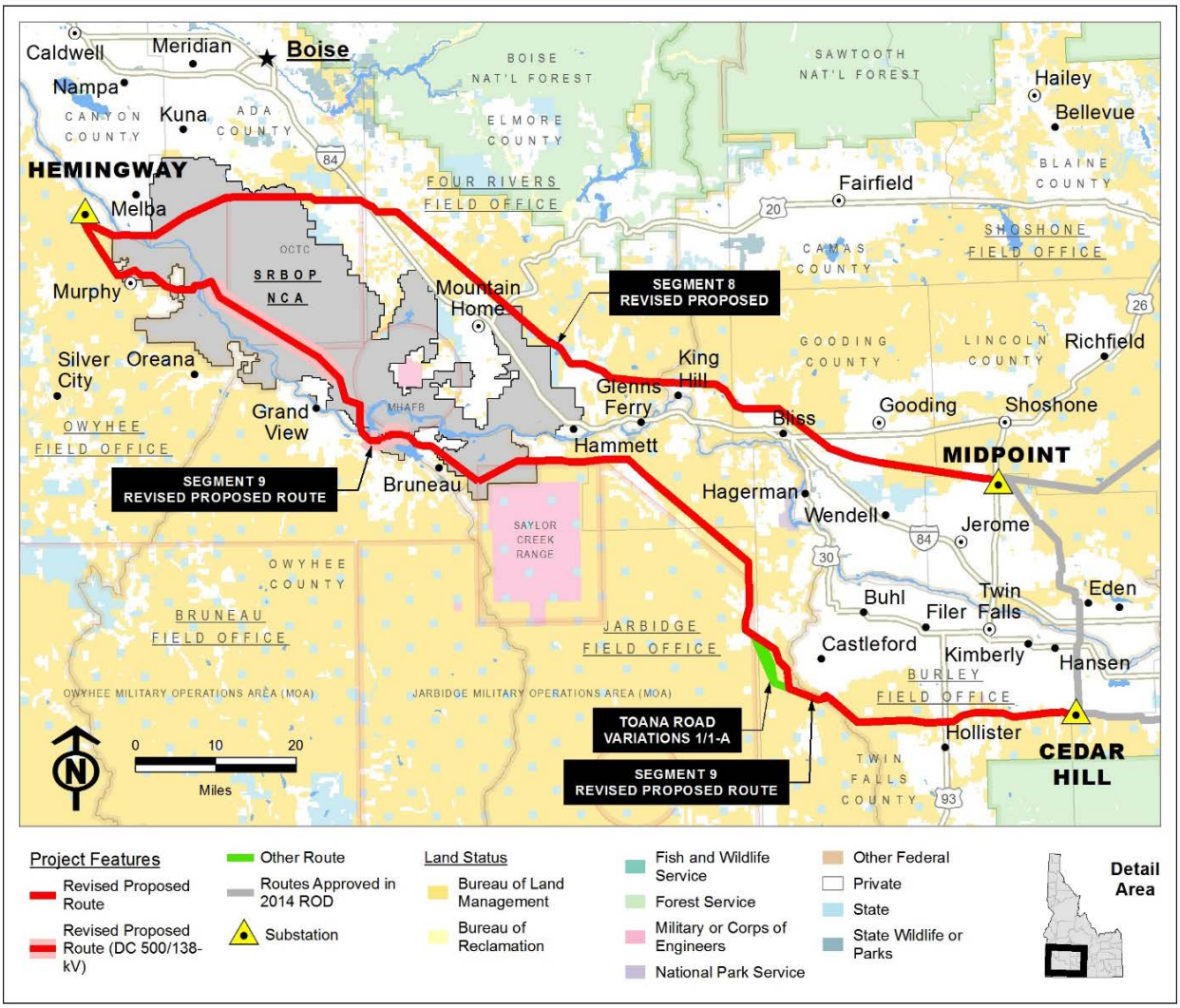


Figure 2.3-4a. Alternative 1 – Proposed Action (Revised Proposed Routes for Segments 8 and 9)

2.3.3.2 Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

Alternative 2 consists of the Segment 8 Revised Proposed Route and the Segment 9 FEIS Proposed Route (see Section 2.3.1 for a detailed description of these routes). Alternative 2 has a combined length of 291.9 miles, which is the shortest length among the seven alternatives. It would require removal of existing transmission line along 1.1 miles of the route. Approximately 35.1 miles of this alternative would be within the SRBOP.

This alternative minimizes impacts to the SRBOP (compared to Alternative 1) by incorporating into the alternative FEIS Proposed 9 (which avoids crossing the northwestern portion of the SRBOP) instead of using the Revised Proposed Route for Segment 9 (which crossed though a substantial portion of the SRBOP along its northwestern end; see Figure 2.3-4b).

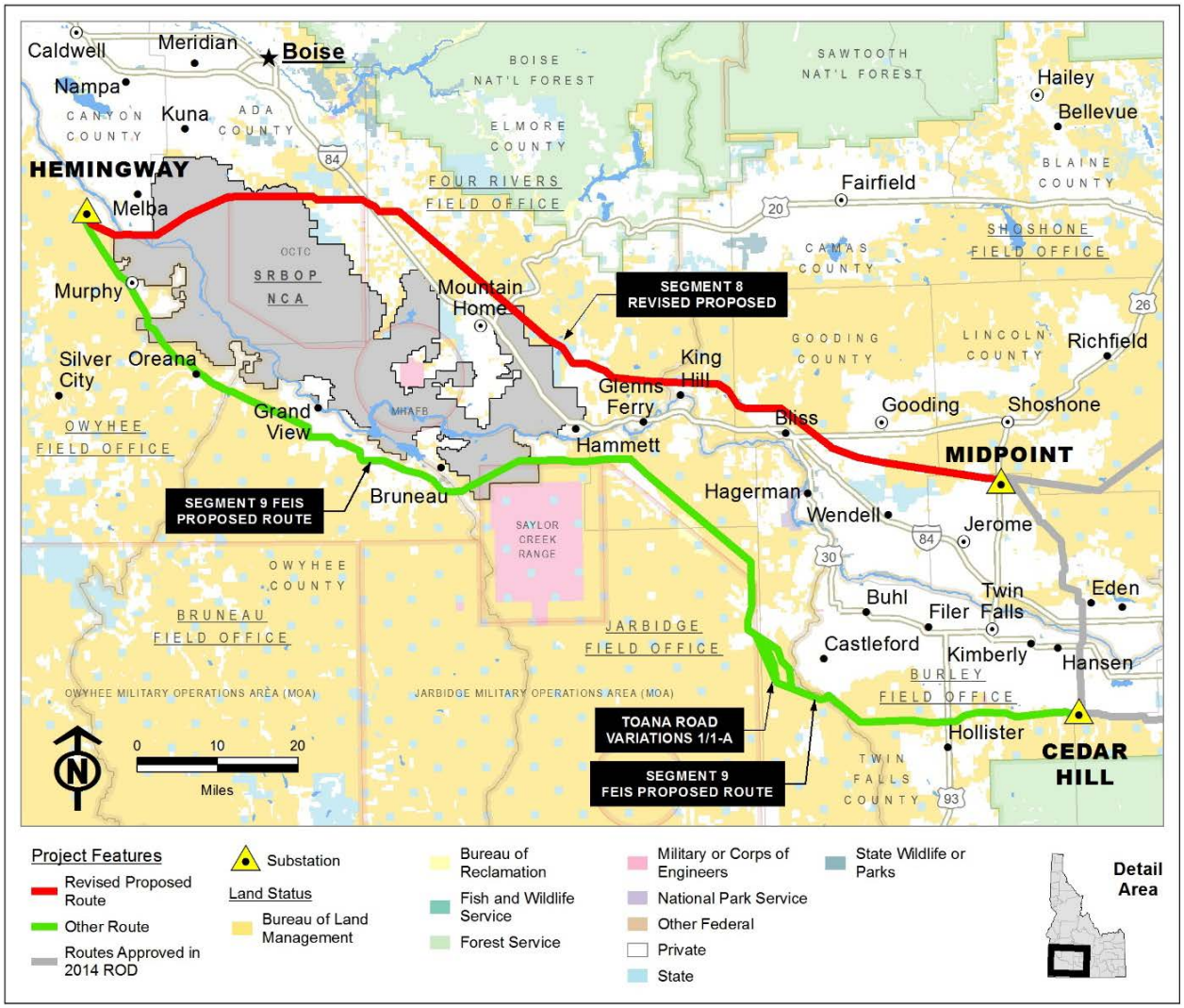


Figure 2.3-4b. Alternative 2 (Segment 8 Revised Proposed Route and FEIS Proposed 9)

2.3.3.3 Alternative 3 – Revised Proposed 8 and the 9K Route

Alternative 3 consists of the Segment 8 Revised Proposed Route and Route 9K (see Sections 2.3.1 and 2.3.2 for a detailed description of these routes). Alternative 3 has a combined length of 304.3 miles and would require removal of existing transmission line along 1.1 mile of the route. Approximately 31.3 miles of this alternative would be within the SRBOP.

This alternative minimizes impacts to the SRBOP (compared to Alternative 1), by incorporating Route 9K into the alternative (which avoids crossing the northwestern portion of the SRBOP) instead of using the Revised Proposed Route for Segment 9 (which crossed though a substantial portion of the SRBOP along its northwestern end; see Figure 2.3-4c).

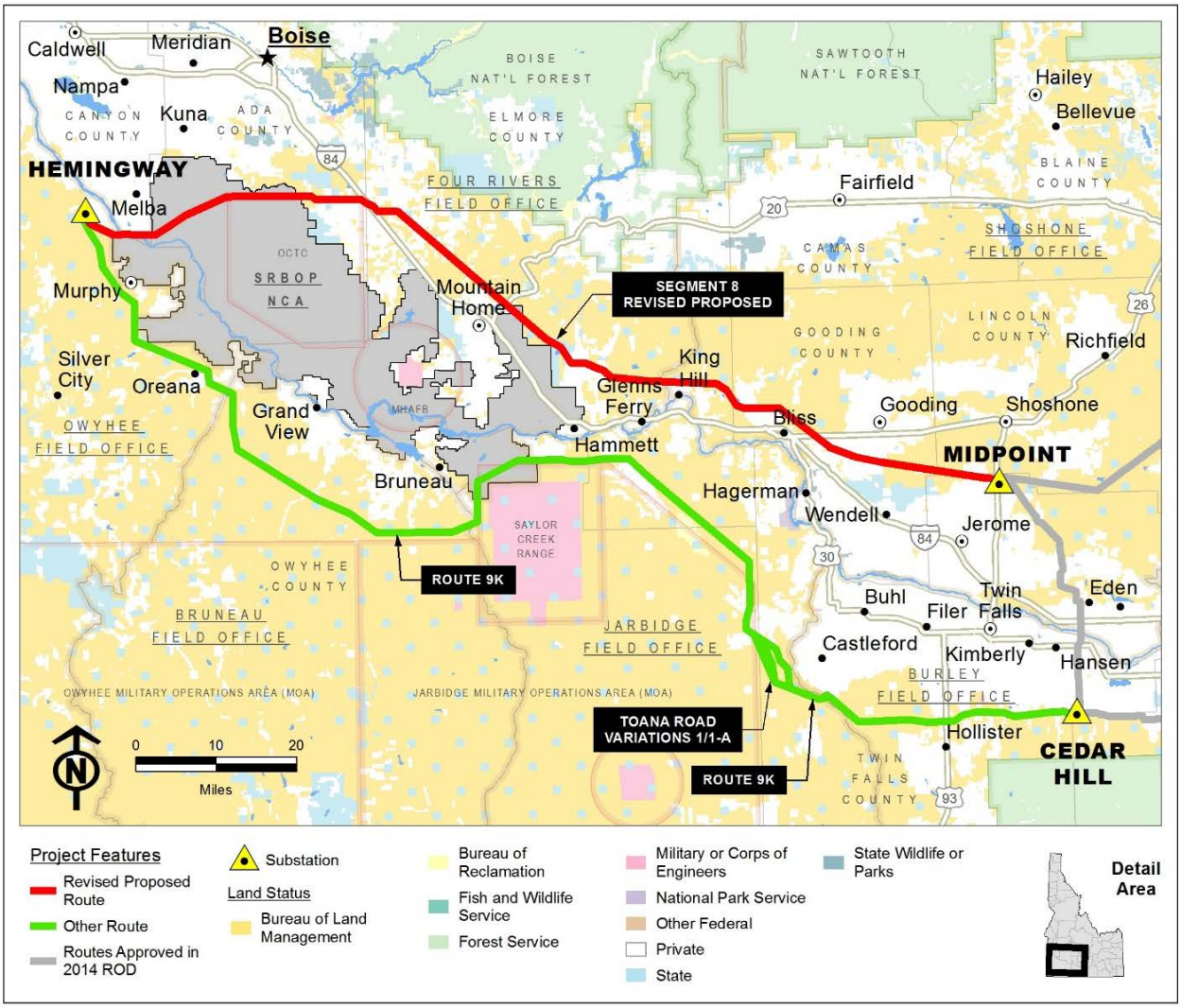


Figure 2.3-4c. Alternative 3 (Segment 8 Revised Proposed Route and Route 9K)

2.3.3.4 Alternative 4 – The 8G Route and FEIS Proposed 9

Alternative 4 consists of Route 8G and the Segment 9 FEIS Proposed Route (see Sections 2.3.1 and 2.3.2 for a detailed description of these routes). Alternative 4 has a combined length of 309.1 miles. It would require removal of existing transmission line along 1.9 miles of the route. Approximately 23.5 miles of this alternative would be within the SRBOP.

This alternative incorporates route options that would result in Segments 8 and 9 paralleling each other for portions of their lengths. Under this alternative, Segments 8 and 9 would parallel each other along the southern and northwestern end of the SRBOP, only deviating from each other near the SRBOP at Route 8G's MPs 96 and 131, where Route 8G would be located south of FEIS Proposed 9 (see Figure 2.3-4d). Route 8G and FEIS Proposed 9 would begin to parallel each other around Route 8G's MP 44.

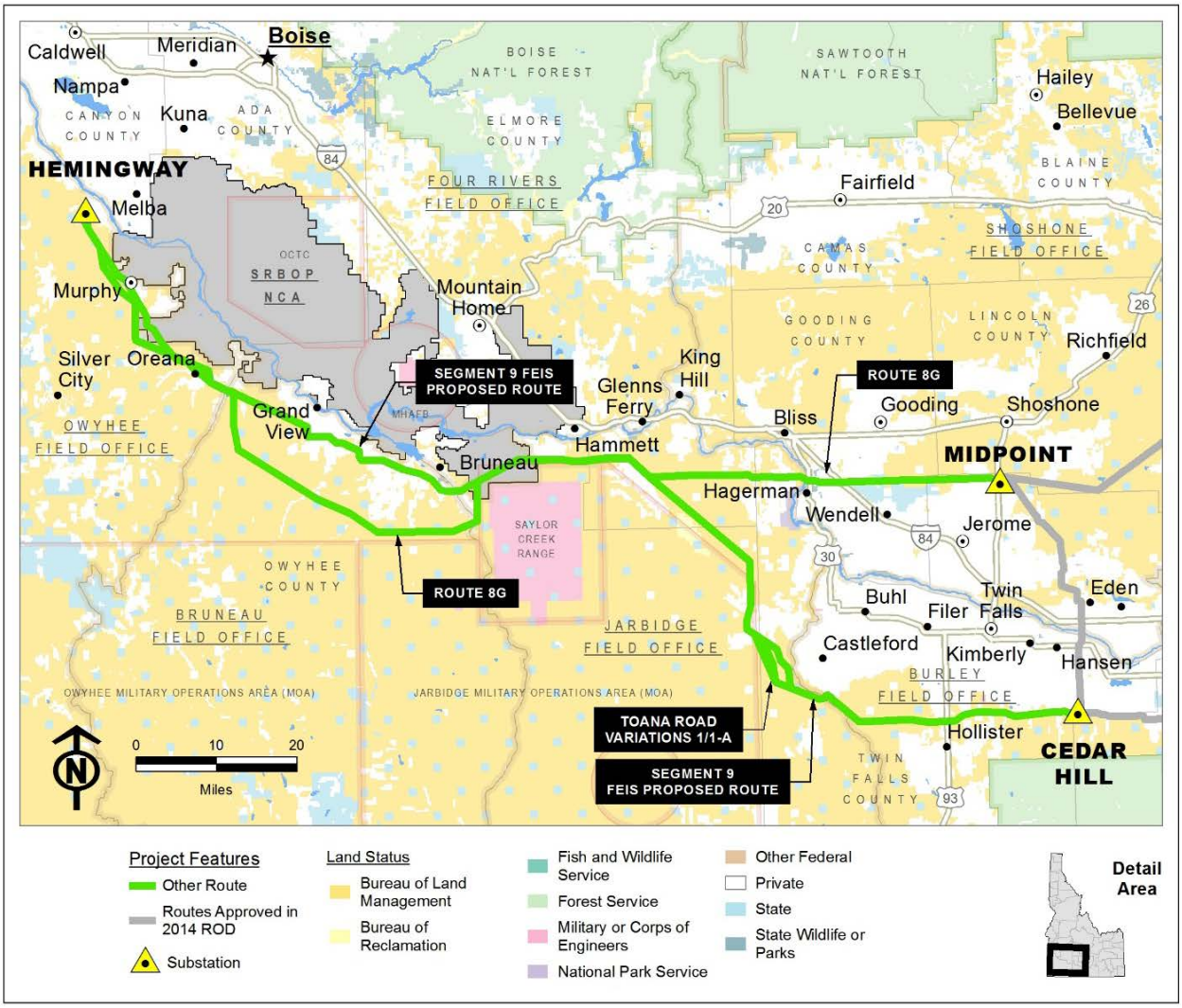


Figure 2.3-4d. Alternative 4 (Route 8G and FEIS Proposed 9)

2.3.3.5 Alternative 5 – The 8G and 9K Routes

Alternative 5 consists of Route 8G and Route 9K (see Section 2.3.2 for a detailed description of these routes). Alternative 5 has a combined length of 321.5 miles, which is the highest total length among the seven alternatives. It would require removal of existing transmission line along 1.9 miles of the route. The two routes would follow the same alignment, at minimum 250 feet apart, for approximately 9.9 miles each within the SRBOP regardless of land ownership (approximately 8.8 miles on lands administered by the BLM), for a combined total of approximately 19.7 miles of new transmission line in the SRBOP .

This alternative incorporates route options that would result in Segments 8 and 9 paralleling each other for portions of their lengths. Under this alternative, Segments 8 and 9 would begin to parallel each other around Route 8G's MP 44, and then continue to follow a parallel path into Hemingway Substation (see Figure 2.3-4e).

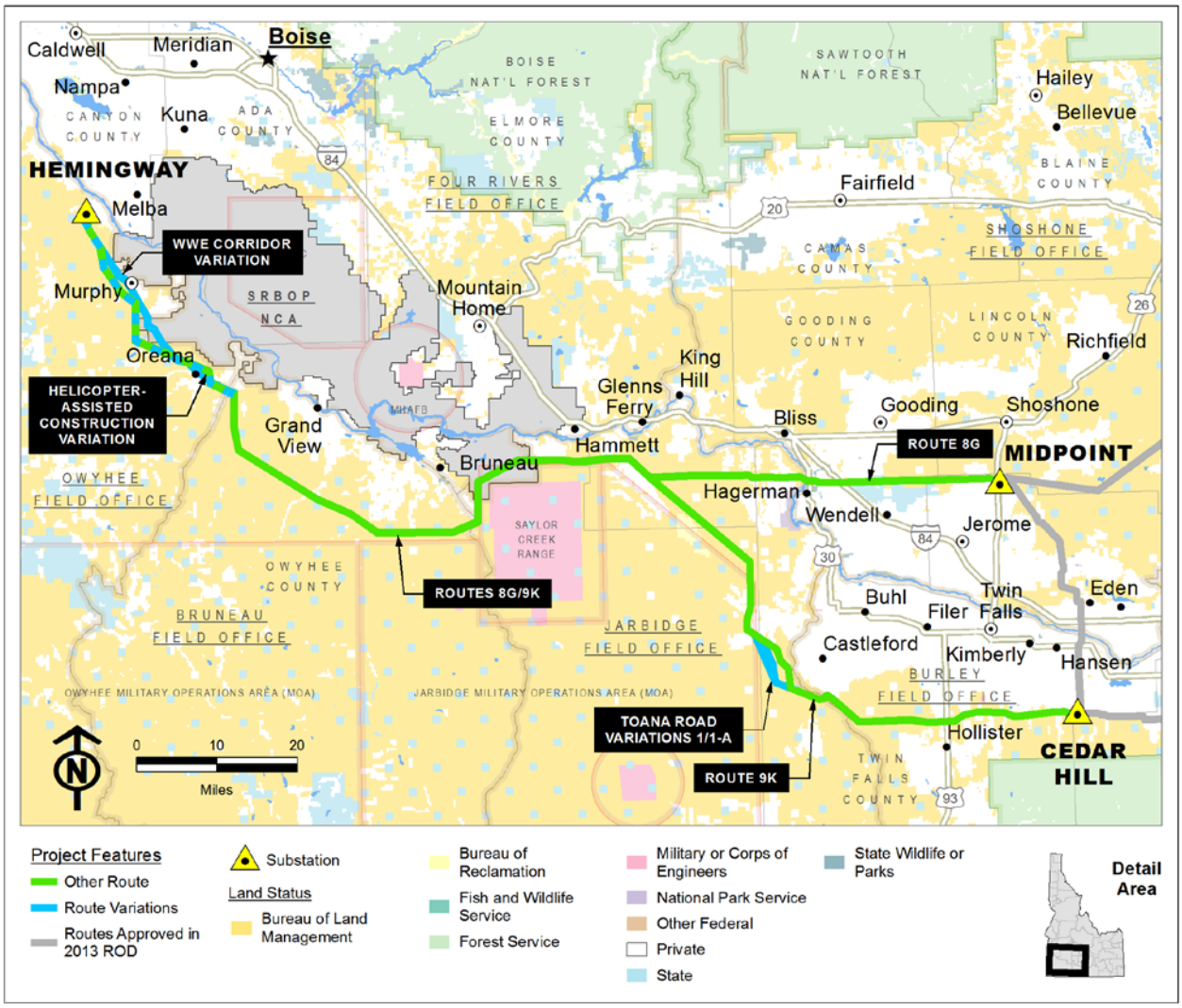


Figure 2.3-4e. Alternative 5 (Routes 8G and 9K with Variations)

Alternative Variations

Two variations were identified for Alternative 5 between the Oreana area and the Hemingway Substation. The Helicopter-Assisted Construction Variation would use a mix of helicopters and ground access to build the transmission lines. The other variation, referred to as the WWE Corridor Variation, would shift the line to the FEIS Proposed 9 route. The main objective for these variations is to reduce impacts to sage-grouse habitat.

Alternative 5 Helicopter-Assisted Construction Variation

The Alternative 5 Helicopter-Assisted Construction Variation would be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). This variation would consist of 32.9 miles of 8G and 33.2 miles of 9K, each route built adjacent to each other but approximately 250 feet apart; therefore, the total length of the transmission lines would be 66.1 miles.

Helicopter-assisted construction is intended to reduce ground disturbance. This variation would utilize low-impact vehicles and ground equipment to support the construction of foundations and tower erection. Tower foundations would be constructed using equipment specifically selected to minimize ground disturbance to the extent practicable. Some lattice tower erection may be completed within the limitations of the lower impact construction equipment. All other construction would be supported by helicopters with sufficient lift capacity for the intended operation.

Helicopter-assisted construction would minimize vegetation clearing during construction because the disturbance would generally be completed with low-impact construction vehicles utilizing overland access. There would be no permanent roads built under this variation, all temporary roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent roads along this variation). The road system proposed for this variation generally follows the design for the comparison portion of the alternative; however it has been modified to reduce impacts to sage-grouse habitat where practicable. It is likely that these modifications would also be incorporated into the road system for the comparison portion of the alternative if it is selected in the ROD.

The Proponents estimate that up to 1,600 helicopter flights would be required, for a period of 2 to 3 months, in order to construct the Project under this variation. See Appendix B-2 for additional information on helicopter-assisted construction.

Alternative 5 West-wide Energy Corridor Variation

The Alternative 5 WWE Corridor Variation would also be implemented between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). This variation would consist of 31.0 miles of 8G and 31.2 miles of 9K, each route built adjacent to each other but approximately 250 feet apart; therefore, the total length of the transmission lines would be 62.2 miles.

Under this variation, the 9K and 8G routes would follow FEIS Proposed 9 to the Hemingway Substation beginning approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). The FEIS Proposed 9 route generally follows the WWE corridor, leaving it briefly near Murphy to avoid impacting a pivot irrigation system.

2.3.3.6 Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 consists of Route 8H and FEIS Proposed 9 (see Sections 2.3.1 and 2.3.2 for a detailed description of these routes). Alternative 6 has a combined length of 299.7 miles, and would require removal of an existing 138-kV transmission line along 25.7 miles of the route as well as a 1.9-mile rebuild of an existing 500-kV line. Approximately 74.7 miles of this alternative would be within the SRBOP.

This alternative incorporates route options that would result in Segments 8 and 9 paralleling each other for portions of their lengths. Under this alternative, Segments 8 and 9 would begin to parallel each other around Route 8H's MP 44, and then deviate from each other around MP 95, where Route 8H would cross north into the SRBOP before rejoining FEIS Proposed 9 near Route 8H's MP 125 (see Figure 2.3-4f).

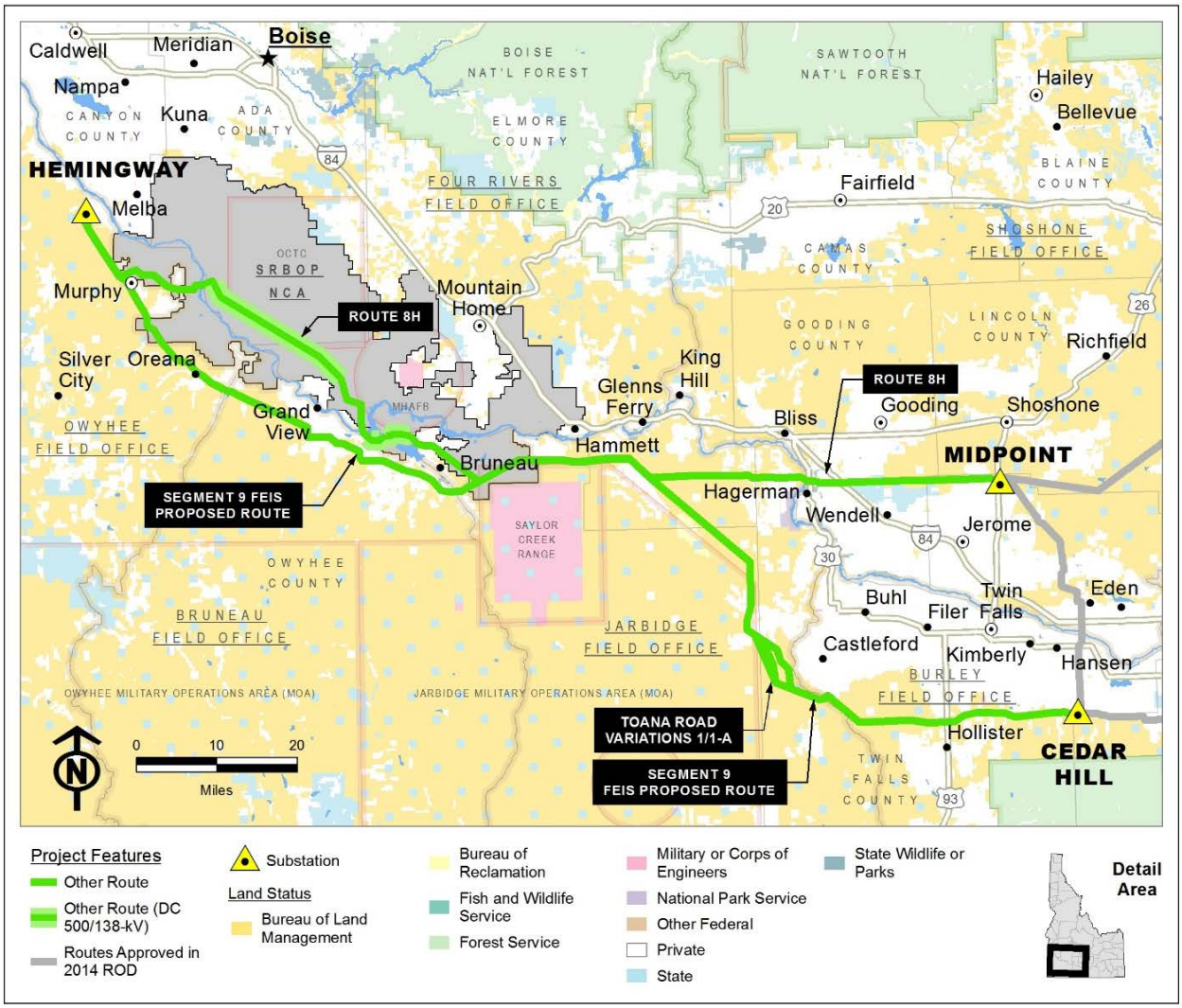


Figure 2.3-4f. Alternative 6 (Route 8H and FEIS Proposed 9)

2.3.3.7 Alternative 7 – The 8H and 9K Routes

Alternative 7 consists of Route 8H and Route 9K (see Section 2.3.2 for a detailed description of these routes). Alternative 7 has a combined length of 312.1 miles. It would require removal of an existing 138-kV transmission line along 25.7 miles of the route as well as a 1.9-mile rebuild of an existing 500-kV line. Approximately 70.9 miles of this alternative would be within the SRBOP.

This alternative incorporates route options that would result in Segments 8 and 9 paralleling each other for portions of their lengths. Under this alternative, Segments 8 and 9 would begin to parallel each other around Route 8H's MP 44, and then deviate from each other around MP 95, where Route 8H would cross north into the SRBOP while 9K would turn south. The two routes would rejoin (i.e., begin to parallel each other) again around Route 8H's MP 130 (see Figure 2.3-4g).

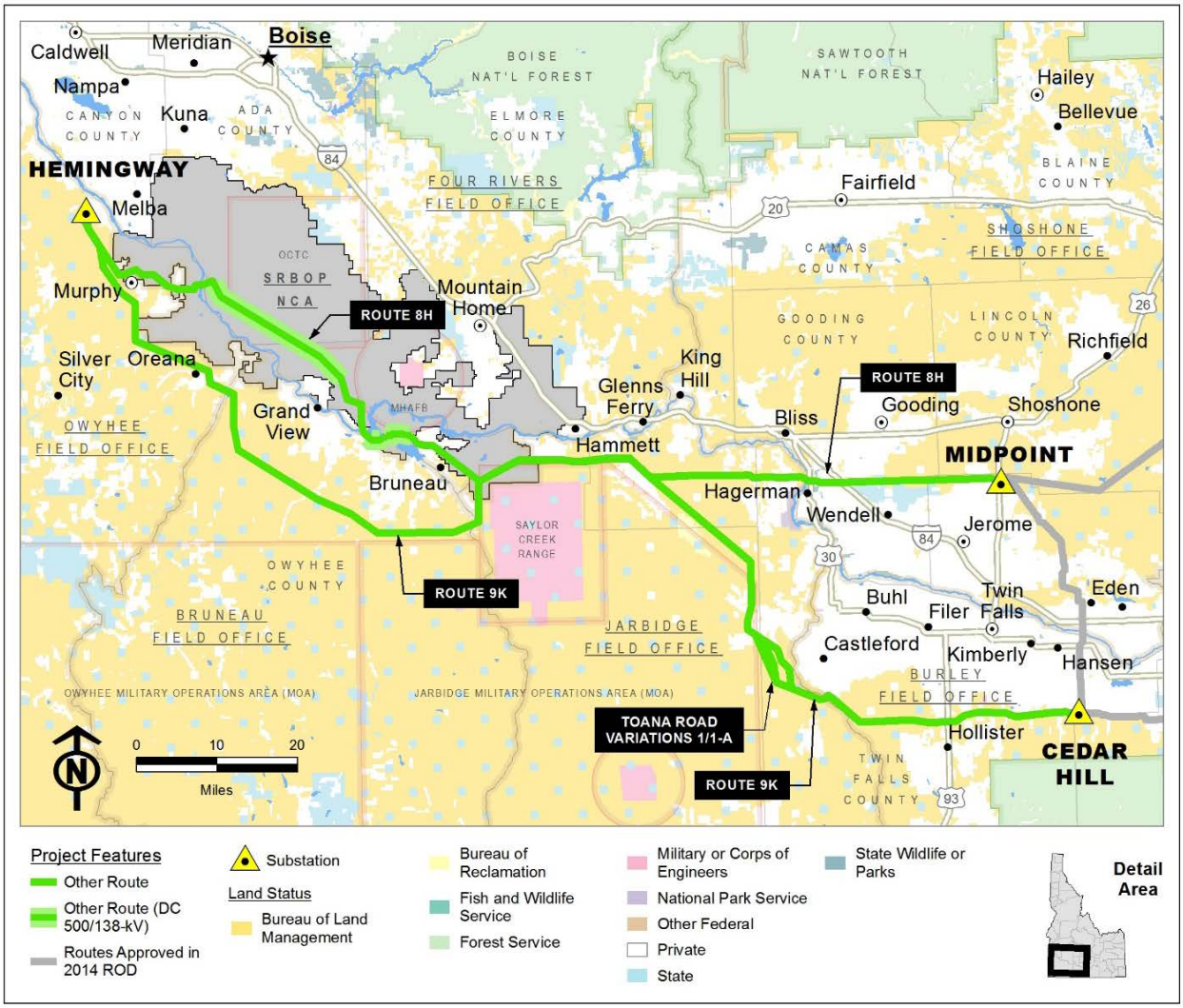


Figure 2.3-4g. Alternative 7 (Routes 8H and 9K)

2.3.4 BLM Preferred Alternative

In accordance with U.S. Department of the Interior regulations (43 CFR 46.425), the BLM identifies Alternative 5 as the Preferred Alternative for the Gateway West Project Segments 8 and 9.

Siting preference on public versus private lands is an important issue for Segments 8 and 9. The BLM coordinated with federal, state, and local government cooperating agencies to identify reasonable routes that would result in complementary siting decisions by all authorizing entities. The BLM will only make a decision on siting of the transmission line on federal lands that it manages. The BLM has no authority to either permit or prohibit construction of the Project on non-federal land. While the BLM's decision may affect private lands adjacent to or between federal areas, 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 Idaho Department of Lands (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, while Section 3.17.1.3 of the FEIS provides a description of the regulatory requirements that pertain to land use.

A final POD, and any POD supplements, submitted by the Proponents is incorporated into the "Terms and Conditions" of BLM ROW grants and becomes a binding requirement that the Proponents must comply with. PODs contain typical construction diagrams, identify access roads and facility locations, and describe construction and reclamation practices as well as other environmental mitigation measures. In large and complex linear projects, final detail is seldom available when the ROW grant is issued. The BLM may issue a ROW grant but withhold use of the granted area until final design and other environmental requirements are met. A Notice to Proceed is issued when all requirements are met (43 CFR 2805.10 (a)(2)).

The POD Supplement for the Project is presented in Appendix B of this SEIS. The appendices to the August 2013 POD contain the framework, or outline, for each of the project-related topics. Details on facility layout and location are currently being finalized and are not available at this time.

2.3.4.1 Preferred Alternative 5 – Route 8G and Route 9K with the Toana Road Variation 1

This alignment minimizes crossing of the SRBOP on BLM-managed land to a total of 17.5 miles (approximately 8.8 miles for Route 8G and 8.7 miles for Route 9K in parallel), separated by 250 feet at minimum. The alternative avoids all greater sage-grouse Priority Habitat Management Areas, the Hagerman Fossil Beds National Monument, the historic Toana Freight Road, and Balanced Rock natural landmark in Twin Falls County. The distance separating the segments (250 feet at minimum) meets WECC planning criteria, while minimizing the Project footprint by reducing the need to construct new access roads to build and service the lines. The alignments in this alternative also avoid primary agricultural lands in Owyhee County and, in general, impact the least amount of private lands of any alternative analyzed in detail in the SEIS. Residential areas of Kuna and Melba are also avoided.

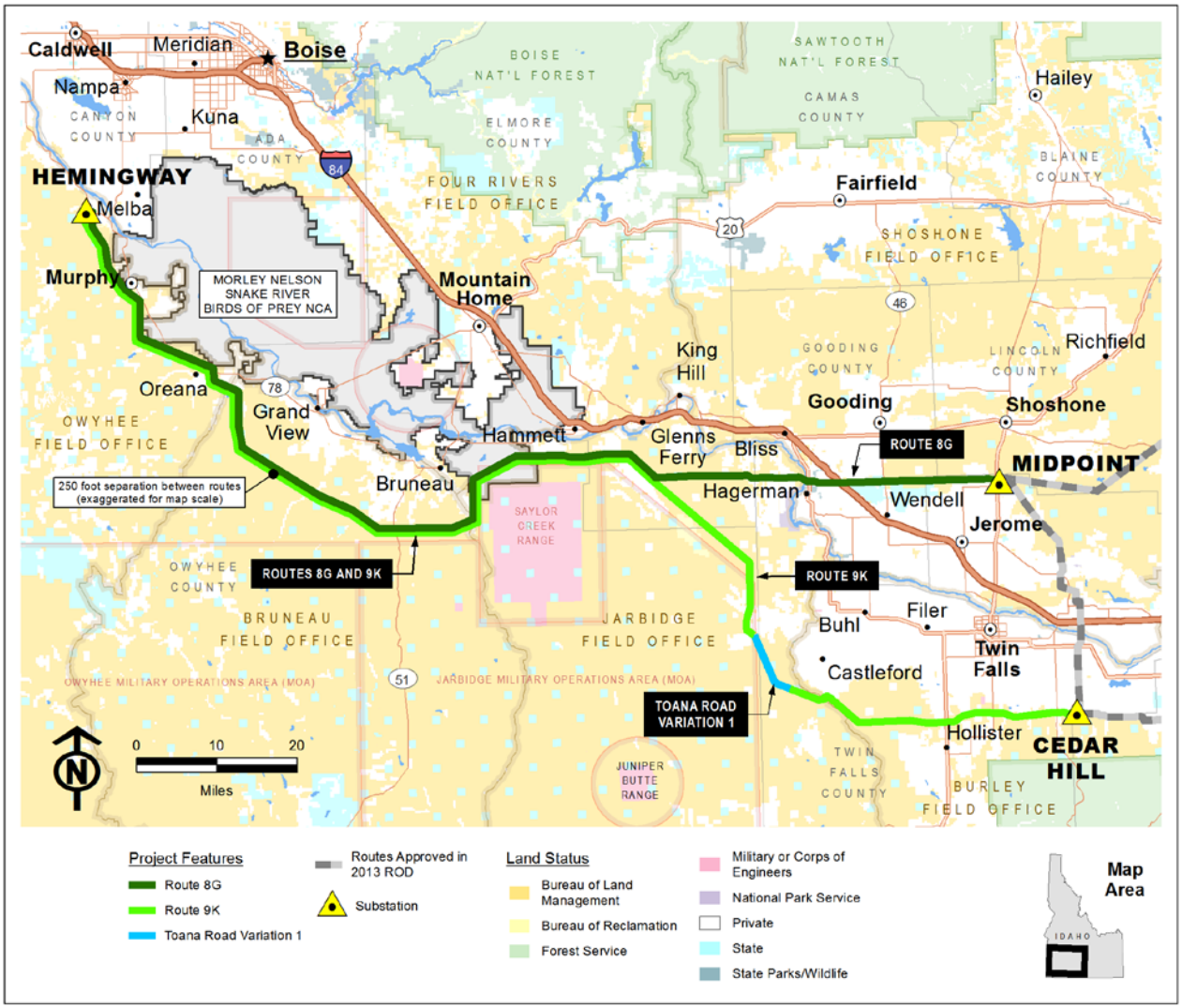


Figure 2.3-5. BLM Preferred Alternative (Alternative 5 with inclusion of the Toana Road Variation 1)

2.3.4.2 Environmentally Preferable Alternative

The environmentally preferred alternative is the alternative that, on balance, appears to have the lowest overall impact on the natural, human, and cultural environment, including resource uses. For Gateway West, the environmentally preferred alternative is the No Action Alternative. As described earlier, the No Action Alternative analyzed in the EIS, as well as in this SEIS, is the predicted result of the denial of the Proponents' applications. Under the No Action Alternative, Gateway West would not be constructed across federal lands. The RMPs or MFPs amendments discussed in the SEIS would not be approved if the No Action Alternative is selected. No Project-related impacts to vegetation, soils and wildlife species and other resources would occur. There would be no impacts to the resources and values of the SRBOP. 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. There would

also be no Project-related impacts to agriculture, transportation, scenery, or other aspects of the human environment. Other transmission line projects may be proposed to meet regional energy needs if the Gateway West lines are not built.

2.3.5 Land Use Plan Amendments

The following amendments listed in Table 2.3-1 are associated with the alternatives being considered in this SEIS. The Proposed Amendments associated with the BLM's Preferred Alternative, Alternative 5, are highlighted in gray on Table 2.3-1. Some of these amendments were considered in the 2013 FEIS; the rest are unique to the alternatives in the SEIS. Refer to Appendices F and G of this document for a detailed discussion of these amendments. Note that there are no plan amendments required for the Toana Road Variations.

Table 2.3-1. BLM Land Use Plan Amendments by Alternative

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
Twin Falls MFP	L-4.1 Allow future major power transmission lines (line of at least 46-138 kV which originate and terminate outside of the MFP area) to be constructed within the recommended corridors. Also allow construction of transmission lines between the corridors. Do not permit power lines to the west or the east of the two corridors. Exempt service lines from restriction.	Allow a 500-kV transmission line ROW outside of existing corridors. (SEIS-1)	x	x	x	x	x	x	x
	VRM I – VRM 1.1 Manage Salmon Falls Canyon between the Salmon Falls Dam and Lilly Grade for natural ecological change in accordance with a VRM Class I designation. This designation would include only the area from rim to rim. Manage the canyon from Lilly Grade to Balanced Rock under a VRM Class II designation. 2. The ACEC is subject to the following resource restrictions….(2) avoid utility rights-of-way….management of the Salmon Falls ACEC in the Twin Falls Resource Area will be the same as in the Jarbidge Resource Area.	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	MUA-3 Utility avoidance/restricted area – three paleontological areas (Sugar Bowl, Glenn's Ferry, & McGinnis Ranch) and Oregon Trail ruts (7,200 acres/22.5 miles) to overhead and surface disturbance and underground utilities.	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				

Table 2.3-1. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
1987 Jarbidge RMP (cont'd)	Cultural Resources – 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 through which these routes pass.	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				
	Visual Resource Management – The visual or scenic values of the public lands will be considered whenever any physical actions are proposed on BLM lands. The degree of alterations to the natural landscape will be guided by the criteria established for the four Visual Resource Management Classes as outlined in BLM 8400. VRM Classes will be managed as shown on Map 9.	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	Utility and Communication Corridors – Restrict major utility developments to the two utility corridors identified (Lands Map 3).	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. (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. (SEIS-7)		x		x		x	

Table 2.3-1. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
SRBOP RMP (cont'd)	Utility and Communication Corridors – Restrict major utility developments to the two utility corridors identified (Lands Map 3). (cont'd)	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow additional major transmission line ROWs as applicable with laws and values for which the SRBOP NCA was designated. Allow two additional 500 kV transmission line ROWs to leave the WWE corridor and exit the SRBOP NCA due south of Bruneau Dunes State Park. (SEIS-13)[1/]					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. (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. (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. (SEIS-22)				x			

Table 2.3-1. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
SRBOP RMP (cont'd)	Sensitive Plant Habitat Include in all BLM authorizations permitting surface disturbing activities (non-grazing), requirements that (1) affected areas be reseeded with a perennial vegetative cover, and (2) surface disturbing activities be located at least 1/2 mile from occupied sensitive plant habitat.	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)[2/]	x	x	x	x	x	x	x
	VRM II Protect the Oregon Trail and management areas along the Snake River Canyon as a Visual Resource Management (VRM) Class II area, the Army National Guard Orchard Training Area (OTA) as Class IV and remaining areas as Class III. [Visual Resource Management (VRM Map)]	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
		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
	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. (2.14 Recreation 2-20).	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 (2.14 Recreation 2-20).	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)	x					x	x

Table 2.3-1. BLM Land Use Plan Amendments by Alternative (continued)

Management Plan	Management Direction	Amendment Description (Number)	Alternative						
			1	2	3	4	5	6	7
SRBOP RMP (cont'd)	2.16 Transportation – Close the following areas to motorized vehicles: … Cove – 1,600 acres (Transportation Map A-145).	The area is closed to motorized vehicle use, subject to authorized use. (SEIS-19)	x					x	x
Bennett Hills/ Timmerman Hills MFP	REC 4.1 – No management activity should be allowed to cause any evident changes in the form, line, color, or texture that is characteristic of the landscape within this Class II area.	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				
	REC 14.6 – Prohibit all land disturbing developments and uses on archeological sites.	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.	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			x	x
Bruneau MFP	VRM-1.2: Designate 136,000 acres as VRM Class II where activities are designed and located to blend into the natural landscape and not visually apparent to the casual visitor	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

Notes:
Gray shading indicates the amendments associated with the BLM's Preferred Alternative.
1/ SEIS-13 would also apply to the Alternative 5 WWE Corridor Variation.
2/ SEIS-8 would also apply to the Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations.
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

2.4 NO ACTION ALTERNATIVE

The action triggering this environmental review is described in the Proponents' applications to the BLM for a ROW grant for the portion of the Project on federal lands. The agency may deny the respective applications or approve the Project with or without conditions. Therefore, the No Action Alternative analyzed in the 2013 FEIS is the predicted result of the denial of the applications. Under the No Action Alternative, Gateway West Segments 8 and 9 would not be constructed (i.e., there would be no construction of the new substations, substation expansion, or the transmission line). No RMPs or MFPs would need to be amended if the No Action Alternative is selected. The objectives of the Project (which include providing increased transmission capacity and a more reliable transmission line system for transport of energy, including wind energy, to meet existing and future needs, as described in Section 1.4, Proponents' Objectives for the Project) would not be met. The cumulative effects of the No Action Alternative are discussed in Chapter 4.

2.5 OTHER ROUTES CONSIDERED

2.5.1 Routes Considered in the FEIS for Segments 8 and 9

The 2013 FEIS considered five additional routes to the original FEIS Proposed Route for Segment 8, and eight additional routes for Segment 9. These routes represent the result of public comments as well as discussions with multiple BLM Field Offices and resultant route deviations to avoid identified resources. Table 2.5-1 summarizes the routes considered in the 2013 FEIS for Segments 8 and 9.

Table 2.5-1. Routes Considered in Detail in the 2013 FEIS

Figure	Route Segment	Map Reference Points Used in the FEIS
Segment 8 – Midpoint to Hemingway		
Figure A-10 in the FEIS	Segment 8 – Proposed	8, 8a, 8b, 8c, 8d, 8e, 8f, 8g, 8h, 8i, 11
	Route 8A	8, 8j, 8c
	Route 8B	8d, 8e, 8k, 11
	Route 8C	8d, 8k
	Route 8D	8f, 8l, 8g
	Route 8E	8h, 9q, 9r, 8i
Segment 9 – Cedar Hill to Hemingway		
Figure A-11 in the FEIS	Segment 9 – Proposed	9, 9a, 9b, 9c, 9d, 9e, 9f, 9g, 9h, 9i, 9j, 9k, 9l, 11
	Route 9A	9a, 9c
	Route 9B	9d, 9m, 9f
	Route 9C	9d, 9m, 9e
	Route 9D	9g, 9s, 9i, 9j, 9t, 9l
	Route 9E (revised between DEIS and FEIS)	9g, 9h, 9o, 9p, 9q, 9r, 9k
	Route 9F	9g, 9n, 9o, 9p, 9k
	Route 9G	9g, 9h, 9o, 9p, 9k
	Route 9H	9l, 9l.1, 9m

The naming convention and map labeling style used in the 2013 FEIS is represented in Table 2.5-1. The reason for proposing each route version considered in detail within the FEIS is explained in each route's description found in the FEIS (see Section 2.4 of the FEIS). These various routes could replace portions of the segments they are named after in the Proposed Route (e.g., Route 9A could replace a portion of the FEIS Proposed Route

along Segment 9 if this route is selected). In the FEIS analysis, these routes are compared with the FEIS Proposed Route based on the same beginning and ending points. The portion of the FEIS Proposed Route segment they could replace is identified by reference point, so all the routes can be compared equally. These routes were fully analyzed in the 2013 FEIS and are therefore not addressed further in this SEIS.

2.5.2 Routes Considered by the Resource Advisory Council but Eliminated from Detailed Study

2.5.2.1 RAC Subcommittee Routes for Segment 8

The following route options for Segment 8 were considered during the RAC Subcommittee process and eliminated from further consideration because, upon closer examination, it became clear that they did not differ greatly from routes analyzed in the 2013 FEIS; they provided no environmental benefit over the Proposed Action; they were not feasible for environmental, physical, or economic reasons; and/or they did not meet the objectives of the Proponents. Figure 2.5-1 shows the routes considered by the RAC Subcommittee.

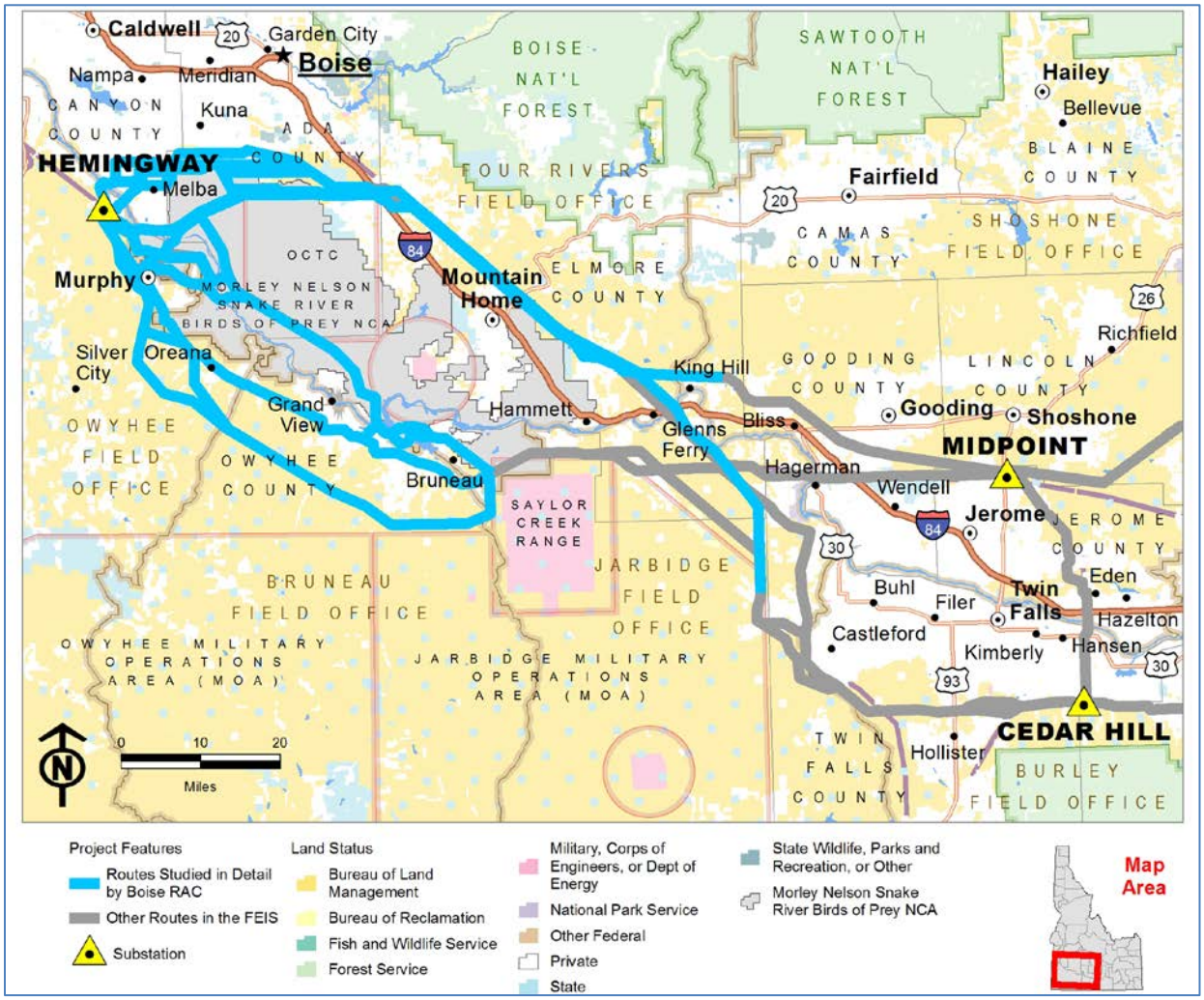


Figure 2.5-1. Routes Studied by the Boise RAC Subcommittee

Bowmont North

The Bowmont North route option was developed by the RAC Subcommittee and is similar to Route 8B in the 2013 FEIS. Route 8B was analyzed in detail in the 2013 FEIS.

The Bowmont North route option follows the same alignment as the 2013 FEIS Route 8B route for the first 10.7 miles before turning west (north of the community of Owyhee). The route then crosses the northern part of the SRBOP, mainly on private in-holdings for approximately 8.5 miles. It crosses 2.4 miles of the southern portion of Kuna's municipal impact area. This route option would double circuit with the existing Bowmont – Mora 138-kV transmission line along Kuna Cave Road for 4 miles. The Bowmont North route option crosses extensive irrigated agriculture (including pivot irrigation), and is within close proximity to several dozen private residences and a dairy in Canyon County north of Melba. The route generally parallels 200 feet south and east of the existing Hemingway to Bowmont 230-kV line west for approximately 9 miles from Powers Butte along Big Foot Road, and then south along Rim Road, before crossing the Snake River. The route continues to parallel the existing Bowmont – Mora 138-kV line south adjacent to State Highway 78 for approximately 3.5 miles to the Hemingway Substation.

The RAC Subcommittee concluded that this route option would have unacceptable impacts on private property, including a large dairy, irrigated agriculture, and private residences. Also, this route option would cross more than 9 miles of slickspot peppergrass habitat, including 1.5 miles of critical habitat.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Bowmont North route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 8B. Route 8B was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The effects from constructing a double-circuit line are analyzed as part of the Proposed Action for Segment 9. No other new information has been identified that would require additional analysis.

Bowmont South

The Bowmont South route option was developed by the RAC Subcommittee and is similar to Route 8D in the 2013 FEIS. Route 8D was analyzed in detail in the 2013 FEIS.

The Bowmont South route option follows existing infrastructure across parts of the SRBOP and much of Canyon County. This option parallels the existing PacifiCorp 500-kV line, before turning north to parallel or double circuit with the existing Idaho Power Company Bowmont – Mora 138-kV line, and the Hemingway – Bowmont 230-kV line. The route would cross the Snake River at the existing Bowmont 230-kV crossing.

The Bowmont South Route Option initially follows the same alignment as the Summer Lake Option 1 route for approximately 17 miles, crossing the SRBOP adjacent to the existing 500-kV transmission for 9 miles. However, instead of turning southwest to continue to parallel the existing 500-kV transmission line, the route turns generally north for 4 miles across the SRBOP to join the alignment for the Bowmont North route (see above). The Bowmont South route then follows the same alignment as the Bowmont

North route along Kuna Cave Road, Big Foot Road, and Rim Road, for the remaining 22 miles into the Hemingway Substation.

The RAC Subcommittee concluded that this route option would have unacceptable impacts on private property, including large feedlots/dairies, irrigated agriculture, and private residences. Also, this route option would cross into the OCTC and cross 12 miles of slickspot peppergrass habitat.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Bowmont South route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 8D. Route 8D which was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The effects from constructing a double-circuit line are analyzed as part of the Proposed Action for Segment 9. No other new information has been identified that would require additional analysis.

King Hill-Mayfield Variation

The King Hill-Mayfield variation was developed by the RAC Subcommittee as a potential single-corridor option for Segments 8 and 9, located north of the SRBOP. The route option runs from the King Hill area to Mayfield, southeast of Boise, where it would join the other route options described for Segment 8.

The King Hill-Mayfield route option was incorporated into the Common Corridor/Double Circuit discussed in this chapter.

Kuna-Melba

The Kuna-Melba route option was reviewed by the RAC Subcommittee and was analyzed in detail in the 2013 FEIS as Route 8B. No new information has been identified that would require additional analysis.

Melmont Option 1

Melmont Option 1 was developed by the RAC Subcommittee as a variation of the Bowmont options described above and is similar to Route 8D in the 2013 FEIS. Route 8D was analyzed in detail in the 2013 FEIS. This route option was developed to avoid potential land use conflicts associated with paralleling or double-circuiting existing infrastructure. Part of this route would parallel the existing Hemingway to Bowmont 230-kV line and would adversely affect private property, including impacts to large feedlots/dairies and residences.

The Melmont Option 1 follows the same alignment as the Kuna-Melba route for the first 9 miles, before turning west. The route enters the SRBOP for approximately 4.5 miles, then turns northwest for approximately 1 mile, continues west for 1 mile, and southwest for 1 mile, to avoid an existing subdivision on a private in-holding within the SRBOP south of Kuna. The route crosses Swan Falls Road before turning west approximately 0.5 mile south of Kuna Cave Road to minimize impacts to existing pivot irrigation, feedlots/dairies, and residences. The route option continues west for 7.8 miles, leaving the SRBOP adjacent to Melmont Road in Canyon County. The route option turns south adjacent to State Highway 45 for 1.5 miles. The route option turns west along the southern face of Hat Butte to minimize impacts to existing pivot irrigation. It then follows

the same alignment as the Bowmont routes the remaining 5.5 miles into the Hemingway Substation.

The RAC Subcommittee concluded that this route option would have unacceptable impacts on private property, including large feedlots/dairies, irrigated agriculture, and private residences.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Melmont Option 1, but eliminated this option from further consideration in the SEIS because it is similar to Route 8D. Route 8D was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The effects from constructing a double-circuit line are analyzed as part of the Proposed Action for Segment 9. No other new information has been identified that would require additional analysis.

Melmont Option 2

Melmont Option 2 was developed by the RAC Subcommittee as a variation of the Bowmont options described above and is similar to Route 8D in the 2013 FEIS. Route 8D was analyzed in detail in the 2013 FEIS. This route option was developed to avoid potential land use conflicts associated with paralleling or double-circuiting existing infrastructure. Part of this route would parallel the existing Hemingway to Bowmont 230-kV line and would adversely affect private property, including impacts to large feedlots/dairies and residences.

Melmont Option 2 generally follows the same alignment as the Melmont Option 1 route described above; however, the route shifts 0.25 mile south and east of Melmont Road and State Highway 45 to minimize impacts to residential development along the arterials.

The RAC Subcommittee concluded that this route option would have unacceptable impacts on private property, including large feedlots/dairies, irrigated agriculture, and private residences.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Melmont Option 2 route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 8D. Route 8D was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. No new information has been identified that would require additional analysis.

OCTC Alpha Sector Variation

The OCTC Alpha Sector Variation was developed by the RAC Subcommittee and is similar to Route 8D in the FEIS. Route 8D was analyzed in detail in the 2013 FEIS.

This route option avoids crossing the OCTC Alpha Sector. The RAC Subcommittee concluded that this route option would have unacceptable impacts on private property.

The OCTC Alpha Sector Variation was eliminated from further consideration in the SEIS because it is similar to Route 8D, which was analyzed in detail in the 2013 FEIS. No new information has been identified that would require additional analysis.

Sinker Butte

The Sinker Butte route option was developed by the RAC Subcommittee and is similar to Route 8E in the 2013 FEIS. Route 8E was analyzed in detail in the 2013 FEIS.

The Sinker Butte route option follows the same alignment as the Summer Lake Option 1 (see below) for 22.9 miles. After crossing Swan Falls Road, the route turns south in a new double-circuit alignment with the existing Bowmont to Canyon Creek 138-kV transmission line, offset from the current ROW approximately 125 feet to the east. This double-circuit alignment continues south approximately 8.5 miles, crossing or adjacent to Swan Falls Road, and past the Dedication Point Overlook, and the turn-off to Swan Falls Dam. Southeast of Swan Falls Dam the two circuits separate before crossing the Snake River canyon near the existing Sinker Creek to Tap 138-kV transmission line crossing south of Sinker Butte. On the west side of the canyon, the route turns northwest for approximately 3 miles along the western face of Sinker Butte, before turning west. The route descends the Murphy Rim and crosses the upper part of the Con Shea Basin south of Guffey Butte. The route passes between several existing subdivisions before turning northwest, generally following the WWE corridor on BLM-managed land for the remaining 7.5 miles into the Hemingway substation. This route would shares a common alignment with the Segment 9 Baja Road-Summer Lake route (see below); however, they cannot be used in conjunction.

The RAC Subcommittee concluded that this route option would be unacceptable due to three line crossings of Snake River at same location. The RAC Subcommittee prefers this crossing for a Segment 9 route option; however, it concluded that three line crossings are unacceptable because they may increase the potential for avian collisions with the lines. While this route follows existing infrastructure on the northeast side of the Snake River, there is no infrastructure to co-locate with on the northwest side of the SRBOP.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Sinker Butte route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 8E. Route 8E was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The effects from constructing a double-circuit line are analyzed as part of the Proposed Action for Segment 9. No other new information has been identified that would require additional analysis.

Summer Lake Option 2

The Summer Lake Option 2 route was developed by the RAC Subcommittee and is similar to the Proposed Route. However, east of Swan Falls Road, it shifts an additional 250 feet north of the existing 500-kV line in order to accommodate the Segment 9 Summer Lake route option in a single-corridor. This option is only viable in conjunction with the Segment 9 Summer Lake route option. This single-corridor option does not meet the Proponents' reliability objectives for the Project; therefore, it was eliminated from further consideration in the SEIS.

The Draft MEP route for Segment 8 was developed by the Proponents to be used as a baseline for estimating the total Draft MEP value for each route option. This route option would follow the 2013 FEIS Proposed Route across the SRBOP, as modified by Routes 8D and 8E. The route is generally the same as the Sinker Butte route option,

except that it is located 1,500 feet south of the existing 500-kV transmission line, incorporates the OCTC Alpha Sector Bypass, and does not include an option to double-circuit with the existing Bowmont to Canyon Creek 138-kV transmission line. This route option was analyzed in detail in the 2013 FEIS as the Proponents' Proposed Route, Route 8D, and Route 8E.

The RAC Subcommittee concluded that this route option would be unacceptable due to three line crossings of Snake River at same location. The RAC Subcommittee prefers this crossing for a Segment 9 route option; however, it concluded that having three line crossings is unacceptable because it may increase the potential for avian collisions with the lines. While this route follows existing infrastructure on the northeast side of the Snake River, there is no infrastructure to co-locate with on the northwest side of the SRBOP.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Draft MEP Proposed Route option, but eliminated this option from further consideration in the SEIS because it is similar to the Proponents' Proposed Route, Route 8D, and Route 8E. The Proponents' Proposed Route, Route 8D, and Route 8E were analyzed in detail in the 2013 FEIS and continue to be routes for consideration. No new information has been identified that would require additional analysis.

2.5.2.2 RAC Subcommittee Routes for Segment 9

The following route options for Segment 9 were considered during the RAC Subcommittee process and eliminated from further consideration because, upon closer examination, it became clear that they did not differ greatly from routes analyzed in the 2013 FEIS; they provided no environmental benefit over the Proposed Action; they were not feasible for environmental, physical, or economic reasons; and/or they did not meet the objectives of the Proponents. Figure 2.5-1 above shows the routes considered by the RAC Subcommittee.

Baja Road – Murphy Flat North Option 1

The Baja Road – Murphy Flat North Option 1 was developed by the RAC Subcommittee and is similar to Route 9D in the 2013 FEIS, except that it would involve double circuiting with the existing 138 kV line rather than being placed 250 feet from that line. Route 9D was analyzed in detail in the 2013 FEIS.

This route option would double-circuit Segment 9 with an existing 138-kV transmission line for most of the distance through the SRBOP, adjacent to the OCTC, and across the northern part of the Cove Recreation Site and non-motorized area. Segment 9 would separate from the double-circuit configuration on the north side of the Snake River, crossing at Sinker Butte. The route was modified to reduce impacts to homes, historic sites, and an airstrip in the Murphy area.

This route option follows the same alignment as the Baja Road-Murphy Flat South route for 47 miles. After crossing the Snake River, the route turns northwest and then follows the same alignment as the Segment 8 Sinker Creek route option for the remaining 20 miles to the Hemingway Substation.

This route option would use an existing 138-kV corridor in the SRBOP in new double-circuit configuration for 56 percent of its length in SRBOP. It is the RAC

Subcommittee's preferred crossing of the Snake River at Sinker Butte for Segment 9. While this route follows existing infrastructure on the northeast side of Snake River, there is no infrastructure to co-locate with on the northwest side of the SRBOP. This route option has minimal private property impacts.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Baja Road – Murphy Flat North Option 1, but eliminated this option from further consideration in the SEIS because it is similar to Route 9D. Route 9D has been analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The Revised Proposed Route (Baja Road-Murphy Flat South) was preferred by the RAC Subcommittee over this route because there would be fewer miles of transmission line crossing private property, there would be fewer private residences within 0.25 mile, it would be out of the viewshed of private residences in Owyhee County, and it would avoid historic Oregon Trail ruts on Murphy Flat. The effects from constructing a double circuit line will be analyzed as part of the Proposed Action for Segment 9; however, no further information has been identified that would require additional analysis.

Baja Road – Murphy Flat North Option 2

The Baja Road – Murphy Flat North Option 2 route was developed by the RAC Subcommittee and is similar to Route 9D in the 2013 FEIS. Route 9D was analyzed in detail in the 2013 FEIS.

This route option follows the same alignment as the Baja Road-Murphy Flat North Option 1 route (see above) for approximately 56.8 miles. After crossing the upper part of the Con Shea Basin, the route turns southwest for approximately 2.5 miles following the northwest face of a low rise north of Con Shea Road, and the town of Murphy. The route crosses State Highway 78 north of the Rabbit Creek trailhead, before turning west and then northwest, where it joins the alignment for the Segment 9 Applicant Proposed Route (see above) the remaining 10 miles into the Hemingway Substation.

This route option would use an existing 138-kV corridor established in the SRBOP in new double-circuit configuration (56 percent of length in SRBOP). It is the RAC Subcommittee's preferred crossing of Snake River at Sinker Butte for Segment 9. While this route follows existing infrastructure on the northeast side of Snake River, there is no infrastructure to co-locate with on the northwest side of the SRBOP. This route option has minimal private property impacts.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Baja Road – Murphy Flat North Option 2, but eliminated this option from further consideration in the SEIS because it is similar to Route 9D. Route 9D was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. The Revised Proposed Route (Baja Road-Murphy Flat South) was preferred by the RAC Subcommittee over this route because there would be fewer miles of transmission line crossing private property, there would be fewer private residences within 0.25 mile, it would be out of the viewshed of private residences in Owyhee County, and it would avoid historic Oregon Trail ruts on Murphy Flat. The effects from constructing a double-circuit line will be analyzed as part of the Proposed Action for Segment 9; however, no further information has been identified that would require additional analysis.

Baja Road – Murphy Flat North Option 3

The Baja Road – Murphy Flat North Option 3 route was developed by the RAC Subcommittee and is similar to Route 9D in the 2013 FEIS. Route 9D was analyzed in detail in the 2013 FEIS.

This route option generally follows the same alignment as the Baja Road – Murphy Flat North Option 1 route (see above). The primary difference is that the route shifts an additional 250 feet south and west of the Segment 8 Sinker Butte route (see above) in a single corridor with the Segment 8 line for the remaining 19.5 miles to the Hemingway Substation. The single-corridor option does not meet the Proponents' reliability objectives because both lines would occupy the same ROW; therefore, it was eliminated from further consideration in the SEIS.

Baja Road – Sinker Creek

The Baja Road – Sinker Creek route option was developed by the RAC Subcommittee and is similar to Route 9G in the 2013 FEIS. Route 9G was analyzed in detail in the 2013 FEIS.

This route option generally follows the same alignment as the Baja Road – Murphy Flat South route. It deviates briefly to the west to allow the siting of the Segment 8 Sinker Butte route at the existing Sinker Creek to Tap 138-kV transmission line crossing of the Snake River south of Sinker Butte, instead crossing near the confluence with Sinker Creek. Along the west side of the Snake River, the route continues northwest an additional 2 miles where it rejoins the alignment for the Baja Road – Murphy Flat South route (see above) the remaining 18.5 miles into the Hemingway Substation.

This route crosses both the Snake River and Sinker Creek. The RAC Subcommittee concluded that this route option would have unacceptable ecological and visual impacts at these two river crossings.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Baja Road – Sinker Creek route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 9G. Route 9G was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. This option was also eliminated from further consideration because of the adverse environmental and scenery impacts.

Baja Road – Summer Lake

The Baja Road – Summer Lake route option is similar to the Murphy Flat North and South options described above. It was developed by the RAC Subcommittee and is similar to Route 9D in the 2013 FEIS. Route 9D was analyzed in detail in the 2013 FEIS.

Instead of crossing the Snake River at Sinker Butte, this route option would continue north before crossing the river. It would then parallel the existing 500-kV line. This route option may not meet the Proponents' reliability objectives unless Segment 8 was to use one of the northern route options.

This route option shares the same alignment as the Baja Road – Murphy Flat North and South route options for approximately 46 miles. Instead of turning west in the area

located south of Swan Falls to cross the Snake River near the existing Sinker Creek to Tap 138-kV transmission line, the route continues north (still in a double-circuit configuration with the existing Bowmont – Canyon Creek 138-kV transmission line) an additional 8.5 miles. The route crosses to the north side of the existing 500-kV transmission line, and then turns west, paralleling 250 feet north of the existing 500-kV transmission line in the same alignment as the Segment 8 Summer Lake Option 1 route the remaining 14.2 miles into the Hemingway Substation. This route shares a common alignment with the Segment 8 Sinker Butte route and the Segment 8 Summer Lake Option 1 route; however, they cannot be used in conjunction. The route may also result in a single-corridor alignment with the existing 500-kV transmission line, and the Segment 8 Summer Lake Option 2 route.

The RAC Subcommittee concluded that this route option would have a crossing at the Snake River that the Subcommittee would prefer to use for a Segment 8 crossing. The single-corridor option does not meet the Proponents' reliability objectives.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Baja Road – Summer Lake route option, but eliminated this option from further consideration in the SEIS because it is similar to Route 9D. Route 9D was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. A reduced separation distance (from 1,500 feet to 250 feet) where needed was analyzed in the 2013 FEIS. The effects from constructing a double-circuit line are analyzed as part of the Proposed Action in the SEIS; however, no further information has been identified that would require additional analysis.

Bruneau South Variation

The Bruneau South Variation route was developed by the RAC Subcommittee and is similar to Route 9F/H in the 2013 FEIS. Route 9F/H was analyzed in detail in the 2013 FEIS.

This short variation would avoid the Cove recreation site and non-motorized area but would result in impacts to private property impacts potential impacts to historic trails.

This variation to the Baja Road route options described above is a portion of Route 9F/H analyzed in detail in the 2013 FEIS. The route follows the Segment 9 Proponent Proposed Route along the fragmented WWE corridor through the Bruneau and Grand View areas for 18.3 miles, before turning north for approximately 3 miles to rejoin the Baja Road routes near C.J. Strike Dam. The route avoids crossing the Cove non-motorized area and recreation area.

The RAC Subcommittee concluded that this route option would have extensive, unacceptable private property impacts.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Bruneau South Variation route, and eliminated this variation from further consideration in the SEIS because it is similar to Route 9F/H. Route 9F/H was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. No new information has been identified that would require additional analysis.

Cove Variation

The Cove Variation route was developed by the RAC Subcommittee and is similar to Route 9D in the 2013 FEIS. Route 9D was analyzed in detail in the 2013 FEIS.

This short route variation crosses the southern part of the Cove recreation site and non-motorized area. The route crosses the southern end of the Narrows between the C.J. Strike Reservoir and the Bruneau Arm, and crosses the Cove non-motorized area and recreation area.

The RAC Subcommittee concluded that this route option would have unacceptable impacts to historic trails.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Cove Variation route, and eliminated this variation from further consideration in the SEIS because it is similar to Route 9D. Route 9D was analyzed in detail in the 2013 FEIS and continues to be an alternative for consideration. No new information has been identified that would require additional analysis.

Glenns Ferry – Mayfield

The Glenns Ferry – Mayfield variation was developed by the RAC Subcommittee as a potential single-corridor option for siting both Segments 8 and 9 (see the Common Corridor/Double Circuit Alternative discussed in Section 2.4.5) north of the SRBOP.

The route variation runs from the Glenns Ferry area to Mayfield, southeast of Boise, where it would join the other route options described for Segment 8. The route generally parallels 250 feet south of the existing 500-kV transmission line for much of its length in a single-corridor with the Segment 8 King Hill – Mayfield route. Although this variation would eliminate the need for a southern route and associated impacts, the single-corridor option does not meet the Proponents' objectives of having two separate lines to enhance system reliability.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Glenns Ferry – Mayfield route variation, and eliminated this variation from further consideration in the SEIS because it does not meet the Proponents' reliability objectives.

Owyhee Uplands (DEIS Route 9E)

The Owyhee Uplands (DEIS Route 9E) route option was developed by the RAC Subcommittee and is similar to Route 9E in the DEIS. Route 9E was analyzed in detail in the DEIS.

This route option leaves the WWE corridor and turns south for approximately 5 miles west of the Bruneau River along the northwest boundary of the Saylor Creek Air Force Range. The route crosses the Bruneau River south of Hot Springs, and north of Indian Bathtub at the northern end of the Bruneau Canyon. The route then proceeds west for approximately 13 miles along the northern boundary of the Air Force military operations area. The route turns northwest along the foothills to the Owyhee Range, primarily on public land, the remaining 60 miles to the Hemingway Substation, crossing Shoofly Creek and the Mud Flat scenic by-way, Castle Creek, Hart and Pickett Creeks, and Sinker Creek. The route passes close to Murphy and then continues 11 miles to the Hemingway Substation. The route crosses sage-grouse preliminary priority habitat and

comes within 0.7 mile of several sage-grouse leks. The route was modified between the DEIS and the 2013 FEIS to avoid these sage-grouse impacts.

The RAC Subcommittee concluded that this route option would have unacceptable impacts to undeveloped foothills of the Owyhee Range, sage-grouse preliminary priority habitat, and private property.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Owyhee Uplands (DEIS Route 9D) route option, but eliminated this option from further consideration in the SEIS because it is the same as Route 9E in the DEIS. Route 9E was eliminated from further consideration between the DEIS and FEIS due to its adverse impacts. No new information has been identified that would require additional analysis.

Owyhee Uplands (FEIS Route 9E)

The Owyhee Uplands route was developed by the RAC Subcommittee and is similar to Route 9E in the 2013 FEIS. Route 9E was analyzed in detail in the 2013 FEIS.

This route option is the modified version of Route 9E that was analyzed in detail in the FEIS. This route follows the same alignment as the Owyhee Uplands (DEIS Route 9E) route for the first 42 miles. The route then deviates in a more northerly direction to avoid crossing sage-grouse preliminary priority habitat. As it continues north, the route crosses private property in close proximity to several residences at Hart Creek, and Bates Creek near Oreana. The route rejoins the WWE corridor for 8.2 miles and then deviates to the northwest to avoid Murphy and several existing subdivisions, before continuing north 5 miles into the Hemingway Substation.

The RAC Subcommittee concluded that this route option would have unacceptable impacts to private property, scenery along undeveloped areas in the Owyhee Range foothills, and sage-grouse habitat.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Owyhee Uplands route option, but eliminated this option from further consideration in the SEIS because it is the same as Route 9E in the 2013 FEIS. Route 9E was analyzed in detail in the 2013 FEIS and continues to be a route for consideration. No new information has been identified that would require additional analysis.

Sinker Creek Variation

The Sinker Creek route variation was developed by the RAC Subcommittee and is similar to the Segment 9 Proposed Route in the FEIS. The Proposed Alternative was analyzed in detail in the 2013 FEIS.

This variation to the Segment 9 Proposed Route (see above) was suggested to avoid crossing a 3.5-mile section of the SRBOP. The variation turns west for 5 miles outside of the WWE corridor before turning north again for 8 miles where it rejoins the Segment 9 Applicant Proposed Alternative west of Murphy. This variation avoids land within the SRBOP. The variation crosses 6 miles of sage-grouse preliminary priority habitat, comes within 0.7 mile of two sage-grouse leks, and crosses Sinker Creek in a historically significant area.

The RAC Subcommittee concluded that this route option would have unacceptable impacts to scenery along undeveloped areas in the Owyhee Range foothills and to sage-grouse preliminary priority habitat.

The BLM considered the information gathered by the RAC Subcommittee in the study for the Sinker Creek route variation, and eliminated this variation from further consideration in the SEIS because it is similar to the Proposed Alternative in the 2013 FEIS. The Proposed Alternative was analyzed in detail in the 2013 FEIS and continues to be an alternative for consideration. No new information has been identified that would require additional analysis.

2.5.3 Other Routes/Alternatives Eliminated from Detailed Study

2.5.3.1 2013 FEIS Routes for Segment 8 Eliminated from Detailed Study

The following routes were considered during the routing process but eliminated from detailed analysis in the FEIS. Each was explored because it followed existing transmission lines, existing corridors, or the WWE corridor, but each presents more environmental impacts than the Proposed Route or Route Alternative evaluated in detail; therefore, the BLM decided not to carry these routes forward for detailed analysis. Figure 2.5-2 shows the routes considered but eliminated from detailed study in the 2013 FEIS.

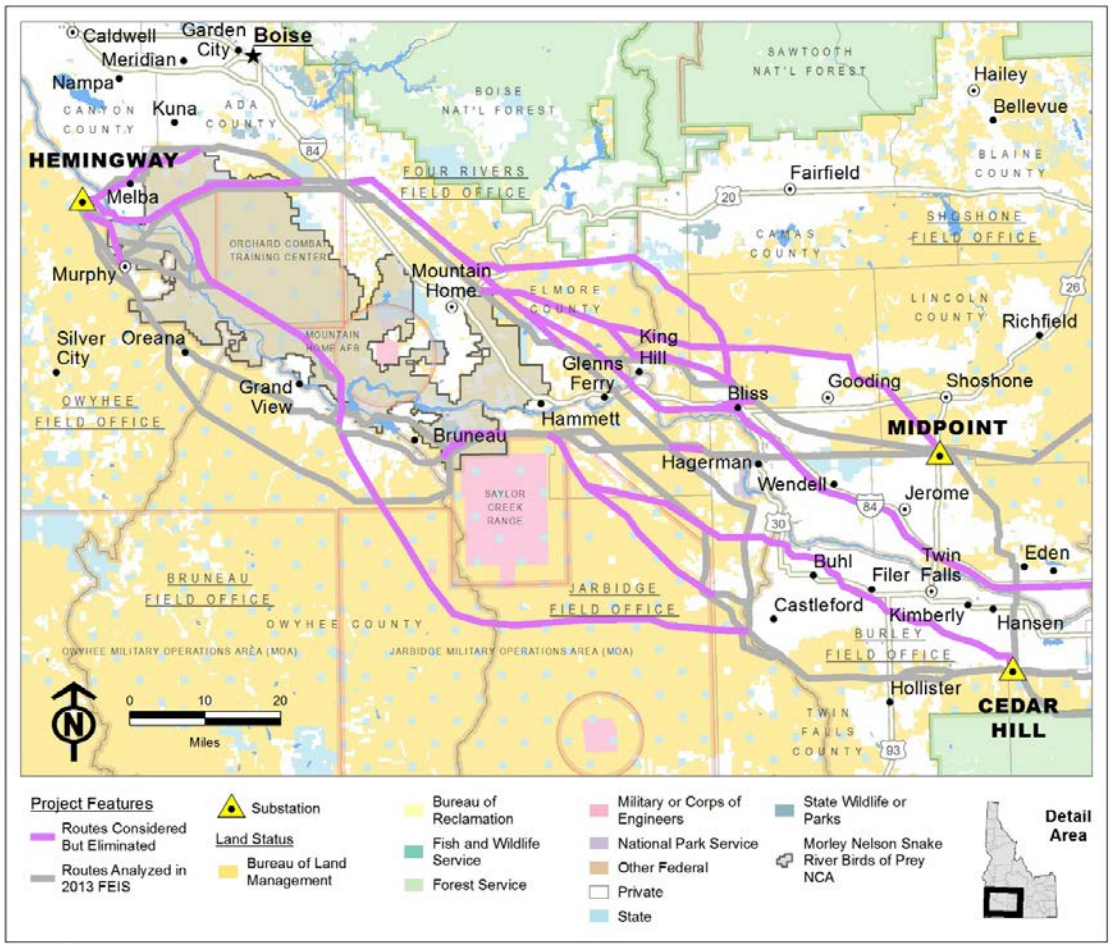


Figure 2.5-2. Routes Considered but Eliminated in the 2013 FEIS

Summer Lake – Midpoint Route

The Summer Lake – Midpoint Route was initially considered to parallel the north side of the existing Summer Lake – Midpoint 500-kV transmission length from where the Project would first encounter this line, all the way east to a termination at the Hemingway Substation (see Appendix O of the FEIS).

This route was eliminated from detailed study because as of the date it was originally proposed, it:

- is parallel to an existing transmission line on the north side for its length; however, the western end of the alternative (in Canyon and Owyhee Counties) would encounter residences and cropland that would make paralleling the existing line infeasible; and
- the concept of paralleling the Project with existing transmission lines was incorporated into the Proposed Route and Alternative 8D, which also avoid residential and agricultural areas that would be impacted by this alternative.

I-84 North Route

The intent of this route is to follow the I-84 corridor to the extent possible. This route diverges from the feasible route at MP 20 and heads northwest, paralleling the south side of I-84 and the north side of the Snake River. It passes just south of Bliss and then turns west, still paralleling I-84 and the river. In Elmore County, this route crosses the Snake River twice and then meets the Proposed Route approximately 4 miles northwest of King Hill (see Appendix O of the FEIS). No attempt was made to follow I-84 from this point because the WWE corridor and existing transmission lines presented better siting options.

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- parallels the Snake River in relatively close proximity, and crosses the Snake River twice;
- is 2.2 miles longer than the Proposed Route;
- is parallel to existing transmission lines for less of its length than the Proposed Route (24.3 miles less);
- impacts 7.1 miles more areas within the scenic US 30 buffer; and
- is in close proximity to developed land uses (agricultural, residential, commercial, and recreational) to a much greater extent than the Proposed Route.

I-84 North Variation Route

This route is a slight variation of the I-84 North Alternative. This option diverges from the Proposed Route northeast of Bliss and travels generally west for 3 miles north of I-84 and the town of Bliss, crosses I-84, and then continues 3 miles west of Bliss, where it joins the I-84 Route discussed above (see Appendix O of the FEIS). The environmental advantages and disadvantages of this route are the same as those presented for the previously discussed alternative, with the exceptions that it impacts more VRM Class III and less VRM Class II.

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- results in more environmental effects than the Proposed Route (as discussed for the I-84 North Alternative).

WWE Corridor Route

This alternative was considered in the WWE Corridor PEIS (DOE and BLM 2008); however, changes were made to the WWE corridor during the analysis process, and the final designated WWE corridor is actually located farther to the west than this route had anticipated it would be. This route diverges from the Proposed Route at the point where Route 8A rejoins the Proposed Route. The WWE Corridor Alternative proceeds northwest, parallel to the Proposed Route and an existing transmission line, and follows the WWE corridor. It rejoins the feasible route just east of reference point 8k, on Route 8C, at a location a few miles east of Indian Creek Reservoir (see Appendix O of the FEIS).

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- is 1.0 mile longer than the Proposed Route;
- is only within the designated WWE corridor for 0.7 mile, although it would be within or paralleling an alternative WWE corridor for 36.7 miles;
- parallels an existing transmission line for 0.9 mile less than the Proposed Route;
- crosses 3.1 miles of VRM Class I, whereas the Proposed Route would cross none; and
- crosses 0.3 mile more irrigated agriculture than the Proposed Route.

Blair Trail Route

The Blair Trail Route was initially considered because it parallels the north side of an existing transmission line corridor containing 138-kV, 230-kV, and 500-kV lines. This route diverges from the Proposed Route at point 8c just south of Blair Trail Reservoir. It travels just northeast of the previously discussed route for approximately 11 miles (see Appendix O of the FEIS).

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- is 4.1 miles longer than the Proposed Route;
- impacts three sage-grouse leks, including both the 0.65-mile and 0.25-mile buffers;
- crosses 5.1 miles of VRM Class I, whereas the Proposed Route crosses none in this area;
- crosses 0.9 mile more irrigated agriculture than the Proposed Route;
- crosses 0.4 mile more steep slopes than the Proposed Route; and
- impacts 2.4 miles more historic trail buffers than the Proposed Route.

Gooding North Route

Residents of Elmore County have commented that the final route should be located farther north and along an existing transmission line from the point where it leaves Midpoint Substation and heads northwest. In response to these comments, the Gooding North Route was sited to follow an existing 230-kV transmission line north of the Proposed Route. This 68.5-mile alternative would cross only 10.2 miles of private property. The route would start at Midpoint Substation and proceed to the northwest for approximately 18 miles, before turning to the west-northwest for about 50 miles and rejoining the Proposed Route about 2 miles east of Mountain Home, Idaho (see Appendix O of the FEIS).

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- crosses 1.8 miles more VRM Class I and II land than the Proposed Route;
- crosses 33.6 miles more elk and mule deer winter range than the Proposed Route;
- does not follow the WWE corridor;
- crosses 7.8 miles of pygmy rabbit habitat, whereas the Proposed Route avoids pygmy rabbit habitat;
- crosses the King Hill Creek ACEC, whereas the Proposed Route avoids it; and
- crosses 2.4 miles of sage-grouse lek 0.65-mile buffers whereas the Proposed Route avoids sage-grouse buffers.

King Hill Route

The King Hill Route was routed to reduce impacts to historic trails and sage-grouse leks, the King Hill WSA, the King Hill Creek ACEC, and topography near King Hill and King Hill Creek (steep drainages and wide canyons), as well as an attempt to follow an existing utility corridor where possible. This route diverges from the Proposed Route near MP 30 and extends in a northwest direction, generally paralleling the north side of the Proposed Route. It passes north of Pioneer Reservoir, across the Gooding/Elmore County line, and north of Blair Trail Reservoir. It then continues along the very southern foot of the Mount Bennett Hills, and rejoins the draft WWE Corridor Alternative (see Appendix O of the FEIS).

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- parallels an existing transmission line for 20.6 miles less than the Proposed Route; and
- crosses 6.2 miles more steep slope areas than the Proposed Route.

Bennett Hills Route

The Bennett Hills Route was designed to minimize impacts to historic trails. This route diverges from the Proposed Route near MP 30 and extends northwest and then west, extending much farther north than the other routes in order to avoid constraints such as

the King Hill WSA. The majority of this route traverses the Bennett Hills. It then rejoins another route where the WWE corridor is designated (see Appendix O of the FEIS).

A variation of the Bennett Hills Route was also considered in which the route began at Midpoint Substation and extended northwest between Shoshone and Gooding along an existing 230-kV transmission line and joining the alternative in the vicinity of Blair Trail reservoir.

These routes were eliminated from detailed study because, as of the date they were originally proposed, they:

- are 5.0 miles longer than the Proposed Route;
- cross 0.8 mile more VRM Class I area than the Proposed Route;
- parallel existing transmission lines for 37.8 miles less than the Proposed Route;
- are Greenfield routes through the Bennett Hills, presenting construction difficulty due to topography and lack of existing access; and
- cross 32.4 miles more of steep slope areas than the Proposed Route.

McElroy Butte Route

The key issue for this portion of the route was determining the approach to siting a new corridor in an environment of active agricultural use, increasing residential development, and additional planned infrastructure projects. The segments comprising this route were an attempt to cross this area with a more direct route.

The first segment of this route would require relocating and/or rebuilding a portion of an existing 138-kV transmission line to 230-kV (planned for another project) in addition to the 500-kV Gateway West line on double-circuit 230-/500-kV structures. This route diverges from Route 8B approximately 3.5 miles east of Kuna Butte. It would extend southwest for 3 miles, then due west for 3.5 more miles, passing just south of Kuna Butte before crossing Route 8B and continuing southwest. Land in this area is a mix of privately owned and SRBOP-managed lands. This alignment would avoid placing a new transmission line through an area annexed by the City of Kuna. The route between the first two intersections with Route 8B is 1.2 miles shorter than the 4.3-mile equivalent portion of Route 8B, but it cuts diagonally across farmlands instead of following the boundary of public and private lands in the hills. The next segment between intersections with Route 8B is 0.2 mile shorter than the 4.7-mile equivalent portion of Route 8B but it also would cut diagonally across farmlands instead of following county roads. The southern segment between the final intersection and the substation is 0.8 mile shorter than the 3.3-mile equivalent portion of Route 8B but also cuts diagonally across farmlands.

This route was eliminated from detailed study because, as of the date it was originally proposed, it: resulted in diagonal crossings of farms and parcels rather than following public/private boundaries and county roads. This would create greater impacts to agricultural and residential properties compared to the Proposed Route.

2.5.3.2 2013 FEIS Routes for Segment 8 Eliminated from Detailed Study

The following routes were considered during the routing process but eliminated from detailed analysis in the FEIS. Each was explored because it followed existing

transmission lines, existing corridors, or the WWE corridor, but each presents more environmental impacts than the Proposed Route or other routes evaluated in detail; therefore, the BLM IDT decided not to carry these routes forward for detailed analysis. Figure 2.5-2 above shows the routes considered but eliminated from detailed study in the 2013 FEIS.

Magic Valley Route

The Magic Valley Route was designed to create a more direct route compared to the Proposed Route; however, this alternative passes through more irrigated agricultural land (primarily center pivot irrigation), and is near more rural residential development. This route exits the Cedar Hill Substation in a northwesterly direction, generally parallel to and south of the Snake River. It passes through Pleasant Valley, crosses Rock Creek, passes about 3 miles south of Twin Falls, continues through the Melon Valley, and crosses Salmon Falls Creek. From this point it continues northwest through the remainder of Twin Falls County, through northern Owyhee County, and into southern Elmore County, where it meets the Proposed Route where Alternative 9B rejoins the Proposed Route (see Appendix O of the FEIS).

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- is within or parallel to the WWE corridor for less than 1 mile, compared to 15.0 miles for the Proposed Route;
- is mostly on private land and does not parallel existing lines, whereas the Proposed Route follows existing lines and WWE corridor routes for portions of its alignment;
- passes through 29.3 more miles of irrigated agricultural lands (primarily center pivot irrigation);
- is in proximity to rural residential development;
- encroaches upon an airport buffer zone; and
- impacts 15.8 miles of a designated scenic highway (i.e., Highway 30).

Saylor Creek Route

The Saylor Creek Route was an initial design for the constriction point between Bruneau Dunes State Park and the Saylor Creek Air Force Range, which was based on a larger required buffer from the Air Force Range. It deviates from the Proposed Route, beginning just east of Browns Gulch and heading due west, then due south, then southwest to avoid conflicts with the Bombing Range.

This route was eliminated from detailed study because, as of the date it was originally proposed, it:

- is 1.5 miles longer than the Proposed Route;
- passes through Bruneau Dunes State Park for 0.3 mile, and would have a greater impact on the view from the park;
- crosses VRM Class II land, which the Proposed Route would not;

- the Proposed Route was agreed upon through agency consultation as a means to avoid conflicts with the Air Force Range and the State Park, whereas this alternative would not; and
- the final WWE corridor was moved to follow the Proposed Route alignment in this area, by agreement with all adjacent and affected land-managing agencies.

Magic Valley-Saylor Creek Route

The Magic Valley-Saylor Creek Route was designed to avoid both the Saylor Creek Air Force Range and the Bruneau Dunes State Park, and would be located primarily on BLM-managed lands by extending farther south than the other routes considered. This route proceeds due west to a crossing of Salmon Falls Creek and then extends westward for approximately 33 miles through the Bruneau Desert, and crosses the East Fork of the Bruneau River, proceeds about 5 miles through the Inside Desert, crosses Bruneau Canyon/Bruneau River, and proceeds 5 miles through the Blackstone Desert. At this point it turns northwest and travels approximately 25 miles, between Big Hill and Bruneau Canyon/Bruneau River. This route then terminates at a location approximately 6 miles west of C.J. Strike Reservoir, where it joins the Proposed Route.

This route was eliminated from detailed study because as of the date it was originally proposed, it:

- crosses 3.6 miles of the Bruneau-Jarbidge Rivers Wilderness Area associated with the Bruneau River in Bruneau Canyon, which would require Congressional approval;
- crosses 2.0 miles of an ACEC associated with the Bruneau River in Bruneau Canyon. This area is designated as an ACEC because of bighorn sheep and cultural resources in the area;
- crosses 3.5 miles of VRM Class I on BLM-managed land associated with Bruneau Canyon;
- is entirely a Greenfield route, resulting in more disturbance;
- is not within the WWE corridor;
- crosses 0.6 mile of historic trail buffer;
- would be within a Military Operating Area for most of its length, which limits; obstructions to under 100 feet; and
- crosses more sage-grouse habitat than the Proposed Route (approximately 47 miles compared to approximately 24 miles for the Proposed Route).

Blue Ridge Route

The Blue Ridge Route was part of the original Proposed Route. It was originally proposed by the Proponents because it was the most direct route between the Cedar Hill Substation and Hemingway Substation; however, it is no longer being considered because it would have passed through the Jarbidge Military Operating Area, an area that prohibits structures greater than 100 feet in height. Instead, the Proposed Action was moved several miles to the north, to the east edge of the Military Operating Area. This new location (i.e., the location of the new Proposed Route) is favored by the military over the Blue Ridge Route.

State Route 78 Route

The SR-78 Route was part of the original Proposed Route near the Hemingway Substation. In this location, Segments 8 and 9 converge as the routes approach the substation. Impacts to subdivisions along Segment 8 caused a portion of Segment 8 to be pushed to the south near the western edge of the route. Therefore, the current Proposed Route along Segment 9 has also been moved further south, and the I-78 Route was dropped from further evaluation.

Central Birds of Prey National Conservation Area Route

The Proponents identified the Central Birds of Prey National Conservation Area (NCA) Route during initial scoping as a means of following existing 138-kV and 500-kV transmission lines on the north side of the Snake River. Most of this route's length would parallel an existing 138-kV transmission line in a northwesterly direction, until it meets an existing 500-kV line (approximately 15 miles of the far western portion of this route). This route would then follow this existing 500-kV line to Hemingway.

This route was eliminated from detailed study because, as of the date it was originally proposed:

- placing the line north of the 500-kV line resulted in impacts to irrigated agricultural land and placing it on the south side of the 500-kV line within the Snake River canyon (in the SRBOP) was deemed infeasible. In addition, it created conflicts with private land uses and subdivisions near Melba.

Route 9D (as disclosed and assessed in the FEIS) was developed to address conflicts with private land uses and subdivisions that would result from the Central Birds of Prey NCA Route. Much of Route 9D follows the Central Birds of Prey NCA Route, except in three places. In the area south of C.J. Strike Reservoir, the original route was moved out of private land. To the northwest of C.J. Strike Reservoir, Route 9D was also moved west of the original route (onto BLM-managed lands) to avoid private lands. Lastly, instead of extending north up the 138-kV line to the 500-kV line, Route 9D turns to the west near Sinker Butte.

2.5.4 Common Corridor/Double-Circuit Alternative

A route was suggested during the RAC process (see the King Hill – Mayfield and Glenns Ferry – Mayfield variations discussion above) and further developed during scoping for the SEIS that would double circuit Segments 8 and 9 across the SRBOP. This would occur by bringing Segment 9 north from Indian Ridge in Owyhee County along the western edge of Tuana Gulch. From there it would join the 2013 FEIS Route 9B alignment and "jump" over to the 2013 FEIS Route 8A alignment. Near King Hill, this route would follow the current alignment for the Segment 8 Revised Proposed Route, and the Segment 8 Revised Proposed Route would shift 250 feet to the north, which would be approximately 1,300 feet south of the existing 500-kV line. This route and the Segment 8 Revised Proposed Route would maintain a 250-foot separation just northwest of the Mayfield/Orchard areas. The two routes would then join together in a 500-kV double-circuit alignment before crossing the existing 500-kV line. Once on the north side, the DC alignment would parallel the existing 500-kV line with approximately 275 feet of separation. Approaching the Hemingway Substation, the 500-kV double-

circuit alignment would separate near Hemingway Butte. Segment 8 would follow the current Segment 8 Revised Proposed Route into Hemingway Substation. Segment 9 would cross the existing 500-kV line and continue west 0.8 mile before rejoining the current Proposed 9 Route into Hemingway Substation.

Many constraints were identified with this route, including a new wind farm near Tuana Gulch, multiple crossings of NHTs, wetlands, and proximity to Hagerman Fossil Beds National Monument. Taller and wider transmission towers would be required for the double-circuit portion of the line, which would require a wider ROW. Taller structures could adversely affect OCTC operations. Also, a single corridor for two segments does not meet the Proponents' reliability objectives for the Project.

The BLM considered the information gathered by the RAC Subcommittee and during scoping for the Common Corridor/Double-Circuit Alternative, but eliminated this option from further consideration in the SEIS because it does not meet the Proponents' reliability objectives.

2.5.5 Use of the West-Wide Energy Corridor, or Designated and Existing Corridors

During the original route development for the Project, the BLM evaluated the use of existing transmission and designated utility corridors (see Table 2.4-1 in Chapter 2 of the FEIS). Table 2.5-2 below presents the Revised Proposed Route, as well as the various routes and variations considered within this SEIS, in relation to their length within the proposed WWE corridor, within the projected WWE corridor (private land segments between WWE corridor segments), adjacent to the WWE corridor, and adjacent to existing transmission corridors.

Table 2.5-2. Length and Percentage of Revised Proposed Routes and Route Variations That Align with West-wide Energy Corridors and Existing Corridors

Segment	Route	Total Segment Length[1/]	Within WWE Corridor (All Ownership Types) [1/]		Within WWE Corridor (Federal Land ONLY) [1/]		Adjacent to WWE Corridor (All Ownership Types) [1/]		Within or Adjacent to Existing Transmission Corridor [2/]		Within or Adjacent to Existing Transmission or WWE Corridor [2/]	
			Miles	% Total	Miles	% Total	Miles	% Total	Miles	% Total	Miles	% Total
8	Revised Proposed Route	129.7	33.8	26.1	15.6	11.9	5.6	4.3	117.1	90.3	121.3	93.5
	Route 8G	146.9	49.8	33.9	32.8	22.3	15.0	10.2	38.9	26.5	76.1	51.8
	Route 8H	137.5	46.2	33.6	29.8	21.7	9.9	7.2	71.9	52.3	102.3	74.4
9	Revised Proposed Route	165.3	27.4	16.6	21.7	13.1	4.4	2.7	55.1	33.4	77.3	46.8
	FEIS Proposed Route	162.2	67.8	41.8	53.9	33.2	10.6	6.5	8.2	5.0	84.4	52.3
	Route 9K	174.6	30.8	17.6	24.5	–	9.3	–	18.2	10.4	48.7	27.9
	Revised Proposed – Toana Road Comparison Portion	8.7	–	–	–	–	–	–	–	–	–	–
	Toana Road Variation 1	8.5	–	–	–	–	–	–	–	–	–	–
	Toana Road Variation 1-A	8.9	–	–	–	–	–	–	–	–	–	–

1/ Mileages are rounded to tenths of a mile throughout table; therefore, rows may not sum exactly.
2/ Within 3,000 feet of existing transmission lines greater than 138 kV.
WWE: West-wide Energy

2.6 DESIGN FEATURES, INCLUDING PROPOSED MEP AND EPMs

In general, the impact analysis and mitigation approach for the Project is a four-step iterative process: 1) analyze what has been proposed by the Proponents, including project design features; 2) determine what impacts or "debits" to the existing environment remain after the design features of the proposed action are implemented; 3) address the impacts or debits identified previously by using the mitigation hierarchy (avoid, minimize, rectify, reduce) to provide "credits" to offset these remaining impacts; and 4) disclose any impacts that are not fully addressed in the previous three steps and compensate for the remaining residual impacts.

The following definitions are used by the BLM when assessing mitigation (as defined in the BLM [2008c] 1790 NEPA Handbook and the BLM (2013c) Regional Mitigation Manual)[1]:

- **"design features"**— measures or procedures incorporated into the proposed action or an alternative, including measures or procedures which could reduce or avoid adverse impacts. Because these features are built into the proposed action or an alternative, design features are not considered mitigation.
- **"mitigation"**— measures or procedures which could reduce or avoid adverse impacts and have not been incorporated into the proposed action or an alternative. Mitigation can be applied to reduce or avoid adverse effects to biological, physical, or socioeconomic resources.
- **"residual effects"**— those effects remaining after mitigation has been applied to the proposed action or an alternative.
- **"enhancement"**— the heightening, intensifying, or improving of one or more resources or values.

2.6.1 Design Features

As part of their Proposed Action, the Proponents have included design features, which include EPMs, to reduce or avoid environmental impacts. The EPMs cover the following topics:

- construction, operations, and maintenance;
- visual resources;
- cultural and paleontological resources;
- plant and wildlife resources, including threatened, endangered, and sensitive (TES) species;
- geologic hazards and soil resources;
- water resources;
- safety measures;
- reclamation of construction activities;
- land use and agriculture;

[1] For additional information, see the definitions in 600 DM 6 (DOI 2015).

- traffic and transportation management;
- air quality;
- electrical environment;
- public safety; and
- noise.

The Proponents' EPMs are presented in Appendix Z to the August 2013 POD (included as Appendix M in this FSEIS). Many of the EPMs were developed in cooperation with the BLM and cooperating agencies. As a part of the Proposed Action, EPMs would be followed on all routes, as site-specific circumstances dictate and as identified in the POD. The Proponents' proposed EPMs are included as Appendix M of this document. This table also identifies where each measure would apply (federal, state, and/or private land).

The Project includes the following four Proponent-proposed plans that would compensate for remaining impacts not otherwise avoided or minimized by the EPMs:

1. Proponents' Mitigation and Enhancement Portfolio (MEP)
2. Off-Site Compensatory Mitigation to Offset Project Impacts to Greater Sage-Grouse
3. Final Migratory Bird Habitat Conservation Plan
4. Draft Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.

Table 2.6-1 below summarizes the measures offered within each plan as they apply to Segments 8 and 9.

The effects analysis, found in Chapter 3 of this SEIS, was conducted based on the Project description, including the Proponents' design features.

Table 2.6-1. Summary of Mitigation Proposals Applicable to Segments 8 and 9 Revised Proposed Routes

Mitigation Plan	Route Targeted in Plan	Impact Type	Proposed Mitigation Projects
MEP	2013 FEIS Proposed Route	Impacts to the SRBOP	Habitat Restoration
			Property Purchase
			Law Enforcement
			Visitor Enhancement
			Line and Substation Removal
Off-Site Compensatory Mitigation to Offset Project Impacts to Greater Sage-Grouse	Draft EIS Proposed Route	Known Effects	Conservation Easements
			Sagebrush Restoration
			Juniper Removal
			Bunchgrass Seeding
		Unknown Effects	Undetermined
		N/A	Administrative Costs

Table 2.6-1. Summary of Mitigation Proposals Applicable to Segments 8 and 9 Revised Proposed Routes (continued)

Mitigation Plan	Route Targeted in Plan	Impact Type	Proposed Mitigation Projects
Final Migratory Bird Habitat Conservation Plan	2013 FEIS Proposed Route	1 acre of juniper woodland impacts	Undetermined
	SEIS Revised Proposed Route	3 acres of juniper woodland impacts	Undetermined
Draft Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S.	2013 FEIS Proposed Route	15 acres of wetland and riparian impacts	Undetermined
	SEIS Revised Proposed Route	15 acres of wetland and riparian impacts	Undetermined

2.6.2 Additional BLM Mitigation Categories

The Proponents' Off-Site Compensatory Mitigation to Offset Project Impacts to Greater Sage-Grouse (sage-grouse plan), as currently proposed, compensates for direct impacts to sage-grouse; however, it does not address indirect impacts to this species. Therefore, the BLM will require that the Proponents develop a mitigation proposal that fully compensates for all potential indirect impacts to sage-grouse (see Section 3.11 – Special Status Wildlife and Fish Species for more details). In addition, the BLM will continue to work with applicable stakeholders to identify any remaining impacts that would exist after implementation of the design features discussed above.

The Proponents' MEP intends to offer mitigation and enhancement for the resources and values in the NCA, which is its focus; however, the MEP proposes to implement the two separately for habitat restoration. The MEP proposes that:

> *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."*

The MEP also states that disturbed vegetation consist of "sagebrush and grassland habitat invaded by cheatgrass." These MEP descriptions are too broad to clearly delineate which NCA areas the various mitigation ratios would apply to.

The lack of details or specifics in the MEP makes it unclear how the proposal's goals would be achieved. Most importantly, the MEP does not contain a methodology and a reliable, consistent, and repeatable accounting system to determine the expected impacts of actions and the measures necessary to compensate for those impacts based on a common "currency" (i.e., raptor habitat value per acre).

To address this deficiency, the BLM developed the Compensatory Mitigation Framework (Appendix K) for determining the required compensatory mitigation for impacts to raptor populations and habitats and the natural and environmental resources

and values associated therewith, and of the scientific, cultural, and educational resources and values in SRBOP. After avoidance and minimization are considered, this Framework would be used for any alternative selected for the Project to offset reasonably foreseeable remaining residual effects from the Project in SRBOP. The Framework is structured to ensure that raptor populations and habitats and the natural and environmental resources and values will be enhanced above baseline conditions, and therefore meet the enhancement requirements in P.L. 103-64.

If project routes are approved, the BLM will also develop compensatory mitigation requirements for other protected resources in the SRBOP that are impacted by the Project, including scientific and educational resources, which are not already covered in the Compensatory Mitigation Framework (e.g., cultural resources are addressed in the Historic Properties Treatment Plan [HPTP]) following engineering and design of the approved route.

As the Project is potentially renewable after its 30-year term, additional or continued compensatory mitigation may be required during that renewal process.

2.7 SUMMARY: COMPARISON OF EFFECTS OF ALTERNATIVES

Tables 2.7-1 and 2.7-2 provide a summary by segment of the environmental effects of the Segment 8 and 9 routes based on the evaluation criteria identified within each resource analysis section. Table 2.7-3 provides similar information, but for the seven BLM action alternatives. Information regarding the impacts that would occur on BLM-managed lands within the SRBOP (i.e., values in "[ ]") are only provided in these tables for resources that have been identified as one of the environmental resources and values for which the SRBOP was established to manage and protect.

In some cases, the impact assessment is based on assessment methodologies that provide adequate disclosure for NEPA analysis but will require more detailed analysis to meet the requests of other laws such as Section 106 of the NHPA or Section 404 of the CWA. A full explanation of the evaluation criteria and the environmental consequences of choosing each route, as well as the alternatives—which are composed of groupings of two route options—is found by resource in Chapter 3. All impact analyses were conducted based on a Project description that includes the Proponents' EPMs contained in Appendix Z to the August 2013 POD (which is in Appendix B to the 2013 ROD). EPMs would apply to all routes/alternatives as identified in Section 2.6. Additional mitigation measures identified by the Agencies (such as mitigation for indirect impacts to greater sage-grouse, mitigation required by the USACE, and mitigation required under the PA) would also apply. The BLM is also planning to identify additional mitigation; however, this would only apply to federal land.

Table 2.7-1. Comparison of Effects for Segment 8 Routes[1/]

Comparison Features	Unit	SEIS Revised Proposed Route Segment 8 [2/]	SEIS Route 8G	SEIS Route 8H
General				
Total Length	miles[3/]	129.7	146.9	137.5
Construction Disturbance Area	acres[4/]	2,271 [298]	2,752 [180]	2,525 [1,006]
Operations Disturbance Area	acres	243 [28]	332 [28]	256 [88]
Land Ownership and Use				
BLM	miles	78.4 [17.6]	114.5 [8.8]	103.0 [52.4]
Other Federal	miles	3.9	0.1	0.5
State	miles	11.1	13.5	14.3
Private	miles	35.8	18.9	19.7
Indian Reservation	miles	–	–	–
WWE Corridor[5/]	miles	33.8 [2.3]	49.8 [6.7]	46.2 [7.8]
Within or Adjacent to Existing Transmission Corridor	miles	117.1 [17.6]	38.9	71.9 [25.7]
Resource Summaries				
National Historic Trails				
Adverse impact	number	7	3	11
Visual				
VRM I or II crossed	miles	9.7	0.3	15.4
Cultural				
Potentially affected pre-historic cultural resources	number	117	91	110
Potentially affected historic cultural resources	number	151	100	130
Wildlife				
Designated big game winter range affected (construction)	acres	1,237	733 [9]	388 [38]
Raptor nests within 1 mile	number	489 [144]	228 [12]	908 [584]
Sage-grouse PPH Habitat affected (construction)	acres	129	103 [5]	–
Vegetation				
Total Natural vegetation removed (construction)	acres	666 [13]	1,049 [27]	343 [152]
Juniper Woodland vegetation removed (construction)	acres	–	26	2 [2]
Wetland/Riparian disturbance (construction)	acres	7.6	2.5 [0.3]	2.7 [0.7]
Water/Fish				
Waterbodies crossed	number	204	149	115
Temperature- or Sediment-impaired stream crossings	number	18	31	21
Soils/Minerals				
High K factor impacted (i.e., highly erodible soils) (construction)	acres	1,621 [276]	1,141 [10]	1,296 [620]
Low T factor impacted (i.e., sensitive soils) (construction)	acres	1,809 [205]	1,612 [30]	941 [352]
Land Use/Recreation				
BLM Plan Amendment would be required	Yes/No	Yes	Yes	Yes
Residences within 300 feet of centerline	number	5	1	4
Residences within 1,000 feet of centerline	number	37	40	37

Table 2.7-1. Comparison of Effects for Segment 8 Routes[1/] (continued)

Comparison Features	Unit	SEIS Revised Proposed Route Segment 8 [2/]	SEIS Route 8G	SEIS Route 8H
Agriculture				
Prime Farmland (operations)	acres	50 [8]	86 [61]	116 [72]
Dryland farming impacted (operations)	acres	–	–	<1
Irrigated agriculture impacted (operations)	acres	15	12	14

Note: The numbers in square brackets "[ ]" correspond to values/impacts that occur on BLM-managed lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever route is selected.

2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.

3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.

4/ Acreages rounded to the nearest acre; rows may not sum exactly.

5/ WWE = West-wide Energy

Table 2.7-2. Comparison of Effects for Segment 9 Routes[1/]

Comparison Features	Unit[3/4/]	SEIS Revised Proposed Route Segment 9[2/]	FEIS Proposed 9	SEIS Route 9K	SEIS Toana Variation 1	SEIS Toana Variation 1-A	Alternative 5 Helicopter-Assisted Construction Variation[6/]	Alternative 5 WWE Corridor Variation[6/]
General								
Total Length	miles	165.3	162.2	174.6	8.5	8.9	66.1	62.1
Construction Disturbance Area	acres	3,149 [996]	3,294 [269]	3,383 [172]	168	163	1,027 [17]	1,112 [184]
Operations Disturbance Area	acres	350 [87]	360 [28]	425 [27]	16	11	69 [5]	86 [16]
Land Ownership and Use								
BLM	miles	142.6 [52.4]	129.4 [11.1]	156.2 [8.7]	8.2	7.8	58.4	50.2 [7.0]
Other Federal	miles	0.4	–	–	–	–	–	-
State	miles	7.5	4.6	4.6	0.3	1	2.5	2.4
Private	miles	14.7	28.3	13.8	–	–	5.2	9.6
Indian Reservation	miles	–	–	–	–	–	–	–
WWE Corridor[5/]	miles	27.4	67.8 [9.5]	30.8	–	–	6.9	31.9
Within or Adjacent to Existing Transmission Corridor	miles	55.1	8.2	18.2	–	–	2.1	2.1
Resource Summaries								
National Historic Trails								
Adverse impact	number	10	0	0	–	–	-	-
Visual								
VRM I or II crossed	miles	15.5	0.3	0.5	–	–	0.7	0.4
Cultural								
Potentially affected pre-historic cultural resources	number	146	149	148	46	46	10	11
Potentially affected historic cultural resources	number	111	113	96	36	36	12	13
Wildlife								
Designated big game winter range affected (construction)	acres	657 [38]	571 [61]	657 [8]	–	–	699 [9]	659 [103]
Raptor nests within 1 mile	number	963 [584]	306 [14]	284 [12]	10	10	6	71 [2]
Sage-Grouse PPH Habitat affected (construction)	acres	282	292	386 [4]	126	129	146 [4]	1 [1]
Vegetation								
Total Natural vegetation removed (construction)	acres	643 [145]	1,084 [88]	1,339 [25]	54	57	733 [6]	879 [118]
Juniper Woodland vegetation removed (construction)	acres	3 [2]	1	26	–	–	-	-
Wetland/Riparian disturbance (construction)	acres	3.2 [0.9]	6.0 [0.7]	3.5 [0.3]	–	–	2.6	0.3
Water/Fish								
Waterbody crossings	number	172	319	237	15	10	63	58
Temperature- or sediment-impaired stream crossings	number	25	14	52	–	–	3	1

Table 2.7-2. Comparison of Effects for Segment 9 Routes[1/] (continued)

Comparison Features	Unit[3/4/]	SEIS Revised Proposed Route Segment 9 [2/]	FEIS Proposed 9	SEIS Route 9K	SEIS Toana Variation 1	SEIS Toana Variation 1-A	Alternative 5 Helicopter-Assisted Construction Variation[6/]	Alternative 5 WWE Corridor Variation[6/]
Soils/Minerals								
High K factor impacted (i.e., highly erodible soils) (construction)	acres	1,924 [621]	1,510 [85]	1,767 [8]	165	161	740 [17]	815 [184]
Low T factor impacted (i.e., sensitive soils) (construction)	acres	1,592 [353]	2,131 [108]	2,260 [29]	168	163	926 [17]	1,031 [184]
Land Use/Recreation								
BLM Plan Amendment would be required	Yes/ No	Yes	Yes	Yes	No	No	No	Yes
Residences within 300 feet of the centerline	number	2	8	2	–	–	2	5
Residences within 1,000 feet of centerline	number	10	28	11	–	–	25	37
Agriculture								
Prime Farmland (operations)	acres	140 [111]	999 [21]	110 [61]	–	–	309	383
Dryland farming impacted (operations)	acres	<1	<1	–	–	–	–	–
Irrigated agriculture impacted (operations)	acres	9	34	8	–	–	12	15

Note: The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-administered lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever route is selected.
2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.
3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.
4/ Acreages rounded to the nearest acre; rows may not sum exactly.
5/ WWE = West-wide Energy
6/ Total length of 8G and 9K lines, placed 250 feet apart.

Table 2.7-3. Comparison of Effects for the Seven BLM Action Alternatives[1/]

Comparison Features	Unit [3/ 4/]	Alternative						
		1	2	3	4	5	6	7
General								
Total Length	miles	294.9	291.9	304.3	309.1	321.5	299.7	312.1
Construction Disturbance Area	acres	5,420 [1,294]	5,565 [567]	5,654 [470]	6,046 [449]	6,135 [352]	5,819 [1,275]	5,908 [1,178]
Operations Disturbance Area	acres	593 [115]	603 [56]	668 [55]	692 [56]	757 [55]	616 [116]	681 [115]
Land Ownership and Use								
BLM	miles	221.0 [70.0]	207.8 [28.7]	234.6 [26.3]	243.9 [19.9]	270.7 [17.5]	232.4 [63.5]	259.2 [61.1]
Other Federal	miles	4.3	3.9	3.9	0.1	0.1	0.5	0.5
State	miles	18.6	15.7	15.7	18.1	18.1	18.9	18.9
Private	miles	50.5	64.1	49.6	47.2	32.7	48.0	33.5
Indian Reservation	miles	–	–	–	–	–	–	–
WWE Corridor[5/]	miles	61.2	101.6	64.6	117.6	80.6	114.0	77.0
Within or Adjacent to Existing Transmission Corridor	miles	172.2	125.3	135.3	47.1	57.1	80.1	90.1
Resource Summaries								
National Historic Trails								
Adverse impacts	number	17 [9]	7 [0]	7 [0]	3 [0]	3 [0]	11 [6]	11 [6]
Visual								
VRM I or II crossed	miles	25.2	10.0	10.2	0.6	0.8	15.7	15.9
Cultural								
Potentially affected pre-historic cultural resources	number	263 [52]	266 [26]	265 [26]	240 [3]	239 [3]	259 [29]	258 [29]
Potentially affected historic cultural resources	number	262 [65]	264 [48]	247 [22]	213 [14]	196 [10]	243 [42]	226 [25]
Wildlife								
Designated big game winter range affected (construction)	acres	1,894 [38]	1,808 [61]	1,894 [8]	1,304 [70]	1,390 [17]	959 [99]	1,045 [46]
Raptor nests within 1 mile	number	1,447 [728]	790 [158]	1,768 [156]	390 [14]	334 [12]	1,073 [587]	1,054 [586]]
Sage-Grouse PPH Habitat affected (construction)	acres	411	421	515 [4]	395 [5]	489 [9]	292	386 [4]
Vegetation								
Total Natural vegetation removed (construction)	acres	1,309 [158]	1,750 [101]	2,005 [38]	2,133 [115]	2,388 [52]	1,427 [240]	1,682 [177]
Juniper Woodland vegetation removed (construction)	acres	3 [2]	1	26	27	52	3 [2]	28 [2]
Wetland/Riparian disturbance (construction)	acres	10.8 [0.9]	13.6 [0.7]	11.1 [0.3]	8.5 [1.0]	6.0 [0.6]	8.7 [1.4]	6.2 [1.0]
Water/Fish								
Waterbody crossings	number	376	523	441	468	386	434	352
Temperature- or sediment-impaired stream crossings	number	43	32	70	45	83	35	73

Table 2.7-3. Comparison of Effects for the Seven BLM Action Alternatives[1/] (continued)

Comparison Features	Unit	Alternative						
		1	2	3	4	5	6	7
Soils/Minerals								
Highly erodible soils impacted (High K factor, construction)	acres	3,545 [897]	3,131 [361]	3,388 [284]	2,651 [95]	2,908 [18]	2,806 [705]	3,063 [628]
Mineral area (construction)	acres	3,401 [558]	3,940 [313]	4,069 [234]	3,743 [138]	3,872 [59]	3,072 [460]	3,201 [381]
Land Use/Recreation								
BLM Plan Amendment would be required	Yes/ No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Residences within 300 feet of the centerline	number	7	13	7	9	3	12	6
Residences within 1,000 feet of centerline	number	47	65	48	68	51	65	48
Agriculture								
Prime Farmland (operations)	acres	190 [119]	1,049 [29]	160 [69]	1,085 [82]	196 [122]	1,115 [93]	226 [133]
Dryland farming impacted (operations)	acres	<1	<1	–	<1	–	<1	<1
Irrigated agriculture impacted (operations)	acres	24	49	23	46	20	48	22

Note: The numbers in square brackets "[ ]" correspond to impacts that would occur on BLM-managed lands within the SRBOP. This information is only presented for resources that have been identified as environmental resources and values for which the SRBOP was established to manage and protect.

1/ Disturbance from the MEP is not included because it would be scaleable to whichever route is selected.

2/ Mileage and acreage do not include disturbance from proposed line removal because much would be within the same footprint.

3/ Mileages rounded to the nearest tenth of a mile; rows may not sum exactly.

4/ Acreages rounded to the nearest acre; rows may not sum exactly.

5/ WWE = West-wide Energy

2.8 UNAVOIDABLE ADVERSE IMPACTS, IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

In accordance with NEPA Section 102.C (42 U.S.C. § 4332), this section addresses irreversible and irretrievable commitments of resources and unavoidable adverse impacts that would result from the implementation of the Proposed Action. The relationship between local short-term uses of the environment within the region of influence and the maintenance and enhancement of long-term productivity is discussed in detail for each resource in Chapter 3.

All action alternatives would result in unavoidable adverse impacts to certain resources. While the Project includes design features and mitigation to reduce impacts to scenery, effects cannot be completely avoided under any of the action alternatives. Likewise, some adverse impacts to NHTs, cultural resources, wetlands – riparian areas, land use, soil, vegetation, and wildlife habitat would occur regardless of the alternative selected.

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 in Idaho 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 the cities of Kuna or Boise. The Preferred Route for Segment 8 analyzed in the 2013 FEIS avoids nearly all of the SRBOP; however, it crosses approximately 6 miles in the city of Kuna. See Section 3.4.2.3 in the 2013 FEIS for further discussion.

Both material and nonmaterial resources would be committed to the proposed Project. Irreversible commitment of resources for the purposes of this section has been interpreted to mean that those resources, once committed to the proposed Project, would continue to be committed throughout the 50-year life of the Project. Irretrievable commitment of resources has been interpreted to mean that those resources used, consumed, destroyed, or degraded during construction, operation, maintenance, and abandonment of the proposed Project could not be retrieved or replaced for the life of the Project or beyond.

Implementation of the proposed Project would require the consumption of nonrenewable fuel (e.g., diesel and gasoline) resources for construction vehicles, construction equipment, construction operation vehicles, and helicopter use. Construction of the Project would result in the consumption of saleable minerals, including fill material for grade changes, sand and gravel for concrete production, gravel for road beds, and similar uses resulting in an irretrievable commitment of natural resources. Construction would also require the manufacture of new materials, some of which would not be recyclable at the end of the proposed Project's lifetime, and energy for the production of these materials, which would also result in an irretrievable commitment of natural resources.

Table 2.8-1 details the irreversible and irretrievable commitments by resource and indicates in which section of Chapter 3 the resource is discussed.

Table 2.8-1. Irreversible and Irretrievable Commitments of Resources

Section	Resource	Irreversible Impacts	Irretrievable Impacts	Explanation
3.1	NHTs	No	Yes	Effect to NHTs and to their setting would last throughout the life of the Project. This loss of setting while the structures are in place would be an irretrievable loss. However, the setting could be restored following project decommissioning.
3.2	Visual Resources	No	Yes	Impacts to viewers during the life of the Project would be irretrievable. Visual impacts would cease with the end of the Project and would not be irreversible. Recovery would be rapid in shrub and grass lands.
3.3	Cultural Resources	Yes	Yes	Removal or disturbance of previously unidentified cultural resources and any known sites mitigated by excavation would result in irretrievable and irreversible loss of data. Visual impacts at the site would end with the decommissioning of the Project, but the visual setting would be compromised in some cases for the duration of the Project.

Table 2.8-1. Irreversible and Irretrievable Commitments of Resources (continued)

Section	Resource	Irreversible Impacts	Irretrievable Impacts	Explanation
3.4	Socioeconomic	No	No	Worker availability during construction would be short-term and may extend to worker populations in other areas.
3.5	Environmental Justice	No	No	No impacts from the Project would occur.
3.6	Vegetation	Yes	Yes	Removal or disturbance of vegetation, such as conversion of shrubland would result in a short-term irretrievable loss.
3.7	Rare Plants	Yes	Yes	Removal or disturbance of habitat could create irreversible and irretrievable impacts.
3.8	Invasive Plant Species	No	Yes	Invasive plant species could be introduced by the Project, resulting in an irretrievable loss of native vegetation.
3.9	Wetlands	Yes	Yes	Removal or disturbance of wetlands could create irreversible and irretrievable impacts; however, all permanent impacts to wetlands would be compensated for as part of the Army Corps permitting process under the authority of the Clean Water Act.
3.10	Wildlife and Fish	Yes	Yes	Removal or disturbance of wildlife habitats (including aquatic habitats) could create irreversible and irretrievable impacts. Loss of individual wildlife due to mortality events would also create irreversible and irretrievable impacts.
3.11	TES Wildlife and Fish	Yes	Yes	Removal or disturbance of wildlife habitats (including aquatic habitats) could create irreversible and irretrievable impacts. Loss of individual wildlife due to mortality events (as well as “take” as defined by ESA) could also create irreversible and irretrievable impacts.
3.12	Minerals	No	Yes	Construction would result in the consumption of saleable minerals, including fill materials for grade changes, sand and gravel for concrete production, and gravel for road beds.
3.13	Paleontology	Yes	Yes	Some loss of fossil resources may occur during construction of the Project resulting in irretrievable and irreversible loss of data.
3.14	Geologic Hazards	No	No	No irretrievable or irreversible losses would occur due to geologic hazards.
3.15	Soils	Yes	Yes	Soil lost to increased erosion would be irretrievable. There would be an irreversible commitment of soil resources on land associated with roads and aboveground facilities.

Table 2.8-1. Irreversible and Irretrievable Commitments of Resources (continued)

Section	Resource	Irreversible Impacts	Irretrievable Impacts	Explanation
3.16	Water Resources	No	Yes	Water quality degradation from increased sedimentation would be irretrievable. Water removed from streams for construction would be irretrievable. There would be no irreversible commitment of water resources.
3.17	Land Use	No	Yes	Land use required for the operation of the transmission line would be irretrievably altered for the life of the Project.
3.18	Agriculture	No	Yes	Irretrievable impacts would include the loss of agricultural crop production for the season during construction in impacted areas. Yearly crop and forage production would decrease due to towers, structures, access roads, etc., on cropland. There would be an irretrievable loss of crop and forage production due to tower presence for the life of the Project.
3.19	Transportation	No	No	Project impacts would occur only during construction and would be fully mitigated.
3.20	Air	No	No	Project emissions would not exceed federal or state air quality standards. Air quality would return to existing conditions after completion of the Project.
3.21	Electrical Environment	No	No	Project electrical and magnetic fields would not exceed federal or state standards. Effects would end with termination of the Project.
3.22	Public Safety	No	No	Temporary impacts to public safety during construction are fully mitigated. No irretrievable or irreversible impacts are expected.
3.23	Noise	No	No	Construction noise effects would be short-term. Project operational noise would not exceed federal or state standards. Effects would cease with the end of the Project.

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; the Toana Road Variations; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations as described in Chapter 2. In addition, the impacts associated with the seven action alternatives the BLM has identified are disclosed. The BLM has identified Alternative 5 with the inclusion of the Toana Road Variation 1 as the Preferred Alternative. This alternative includes Route 8G and Route 9K, with the Toana Road Variation 1 in Segment 9.

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 (see Appendix M). 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 2013 FEIS were also the methods were used for this analysis, and the description in the 2013 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
Morley Nelson Snake River Birds of Prey National Conservation Area	Section 3.24	Yes

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, in the following hierarchy (beginning with "avoiding") to be considered for implementation, 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; or
- 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 Appendix M of this FSEIS 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

The following Project-wide mitigation plans apply to Segments 8 and 9

- The Greater Sage-Grouse Habitat Mitigation Plan (Appendix J in the 2013 FEIS, also see Section 3.11 of this FSEIS)
- The Migratory Bird Habitat Mitigation Plan (Appendix D to the 2013 ROD, also see Sections 3.10 and 3.11 of this FSEIS)
- The Historic Properties Treatment Plan (Appendix C-1 to the 2013 FEIS)
- The Programmatic Agreement Regarding Compliance with the National Historic Preservation Act (Appendix E to the 2013 ROD; also see Sections 3.1 and 3.3 of this FSEIS)

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

- The Framework for Compensatory Mitigation for and Monitoring of Unavoidable Impacts to Waters of the U.S (Appendix C-2 in the 2013 FEIS).

In addition to these Project-wide plans, the BLM has worked with the Proponents to develop the Compensatory Mitigation Framework for the SRBOP (Appendix K to this FSEIS). The Framework for the SRBOP is intended to analyze and facilitate the development of a Compensatory Mitigation Plan to offset reasonably foreseeable remaining residual effects from the Project within the SRBOP.

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) 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.

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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 compensatory mitigation framework 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. Compensatory mitigation for impacts to cultural resources, NHTs, recreation, and visitor services is being 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 Compensatory Mitigation Framework is included in Appendix K. The mitigation measures discussed in Appendix K would be implemented in place of the MEP.

The Compensatory Mitigation Framework is intended to be a framework, not a site-specific mitigation plan, to discuss how the mitigation hierarchy is applied to the direct and indirect impacts of the Project. The framework (1) describes how avoidance and minimization would eliminate and/or reduce impacts; (2) identifies remaining (i.e., residual) impacts to be addressed through compensatory mitigation; and (3) establishes the process to assess the compensatory mitigation obligation to achieve enhancement (i.e., net benefit) to resources.

Once the final routes are selected in the ROD, the Proponents will complete final engineering and design for the Project. Next, a working group, which would include representation determined by the BLM and the Proponents, will apply the framework to the final engineering and design for the approved routes to determine (1) the remaining direct and indirect impacts and (2) the site-specific suite of compensatory mitigation measures.

A working group will use these results to produce a compensatory mitigation plan to achieve enhancement of resources within the SRBOP as per P.L. 103-64. That working group will submit the recommended compensatory mitigation plan to the BLM Authorized Officer for his/her approval. The approved compensatory mitigation plan will then be implemented along with or prior to the Notice(s) to Proceed.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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.

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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 2009a) 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 Toana 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 Appendix M. 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)	–	–	–	–	–	–
Alternative 5 Helicopter-Assisted Construction Variation	–	–	–	–	–	–
Alternative 5 WWE Corridor Variation	–	–	–	–	–	–

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 and Variation

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.

SRBOP

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

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.

Variations

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This scenario utilizes low-impact vehicles and ground equipment to support the construction of foundations and tower erection for Routes 9K and 8G. Helicopter-assisted construction would minimize permanent disturbance by fully reclaiming all access roads and temporary worksites. The Alternative 5 Helicopter-Assisted Construction Variation would not change the visibility of Routes 8G or 9K from the Oregon NHT. Route 8G would still cross the Oregon NHT in Cassia Gulch (C1515) and may diminish the trail's scenic quality in AU1b at KOP C1515 and C106.

The Alternative 5-Helicopter-Assisted Construction Variation may be temporarily visible and in audible range of recreational users experiencing the Oregon NHT near Routes 8G or 9K.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart in this portion of the alternative, which is situated in AU4. Under this variation, the Alternative 5 WWE Corridor Variation follows the same alignment as FEIS Proposed 9 for the 33.8 miles of Route 9K between MP 141.0 and the Hemingway Substation and 34.8 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

The variation would pass approximately 2.3 miles south and east of the Utter Massacre Site (C1528), and then follow the same alignment as the Segment 9 Revised Proposed Route at the west end of the SRBOP, and then with Routes 8G and 9K before terminating in Hemingway. The variation would generally parallel 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 variation would come within 1.2 miles of the trail. Though the entire Alternative 5 WWE Corridor Variation is expected to be visible from the trail, approximately 16.7 miles would be visible in the middleground. Impacts would be localized near the northwest end of AU4, where the Sinker Creek HPRSEG heads west toward the variation before turning sharply to the north. In this area, situated within the SRBOP, the Alternative 5 WWE Corridor Variation 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, the Alternative 5 WWE Corridor Variation would moderately contrast with the visual setting, but would not adversely impact scenic/visual, cultural/historic, or natural resources.

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	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	

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 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	
Alternative 5	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 5 Helicopter-Assisted Construction Variation	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 5 WWE Corridor Variation	Segment 8 (Route 8G)								3 Adverse Impact 2 Trail Crossings (0 on BLM-managed land) 18 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	7	–	**11**	6	
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 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 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.

The Alternative 5 Helicopter-Assisted Construction Variation would cause temporary visual and audible impacts to recreational users experiencing the Oregon NHT during periods of helicopter-assisted construction, if helicopters were to frequently cross the Oregon NHT. These impacts would be limited and temporary and would not adversely impact the Oregon NHT.

The Helicopter-Assisted Construction Variation could cause temporary impacts to recreational users experiencing the Oregon NHT, including at the two KOPs in the SRBOP identified as recreational sites (C.J. Strike Ruts [C1501] and Cove at C.J. Strike Reservoir [C1502]). These impacts would be limited and temporary and would not adversely impact the Oregon NHT.

The Helicopter-Assisted Construction Variation would not change the total number of adverse impacts (three) that Alternative 5 would have on the Oregon NHT because those impacts would be operational and not limited to the Project's period of construction.

The Alternative 5 WWE Corridor Variation would have no adverse impacts on the Oregon NHT. The WWE Corridor Variation would not cross the Oregon NHT and would have no adverse impact on the seven KOPs from which the variation would be visible in AU4b and AU 5.

The WWE Corridor Variation would have no adverse impact on the six KOPs in the SRBOP from which the variation would be visible. Though the WWE Corridor Variation would be visible from four more KOPs in the SRBOP than the comparison portion of Alternative 5, the variation would not adversely impact this portion of the trail.

Though the WWE Corridor Variation would be visible from five more KOPs in AU4 than the comparison portion of Alternative 5, the variation would not adversely impact the Oregon NHT. The WWE Corridor Variation would not change the total number of adverse impacts (three) that Alterative 5 would have on the Oregon NHT because those adverse impacts would occur outside of the WWE Corridor Variation.

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that would be 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 other design features discussed above 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 Segments 8 and 9 would be consistent with the measures developed for 2013 ROD for the Gateway West Project. 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. In addition to the Project-wide mitigation process

described above, specific measures to ensure mitigation and enhancement of cultural resources, including NHTs, within the SRBOP would be designed to comply with requirements in the enabling statute of the SRBOP. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 four 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 2009a) 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 four variations, and BLM action alternatives. Simulations were also revised to reflect the proposed updates addressed in this SEIS. Two new photographic simulations (for KOPs H-1 and H-2) have been prepared for Route 8G at the request of the NPS.

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 44 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 11 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 37 KOPs along Route 8G have cultural as well as visual resource concerns.

KOP H-1 (Figures E.2-1 and E.2-17a). KOP H-1 is located at a roadside interpretive pull-out in the Thousand Springs Scenic Byway segment of Highway 30. Views are directed south and southwest across the Snake River and Hagerman Valley. The landscape appears largely enclosed by the Snake River canyon and upland plateaus. Landform is dominated by a broad, flat plateau and the U-shaped river valley. The Snake River appears prominent, with the smooth, glossy water and distinct patches of whitewater contrasting with the surrounding greens of the Hagerman Valley. The movement of the river creates a dominant focal element the view. Views are also drawn to the south along the river. Vegetation is dominated by ornamental trees and agricultural areas within the Hagerman Valley. These irrigated areas appear lush and green, contrasting with the more muted greens and brown of the uplands.

The landscape features cultural elements, with Highway 30 and residential areas of Hagerman visible in the foreground. These features appear simple and do not detract from the overall quality of the view. Transmission towers and wind turbines are also visible as they skyline the foreground/middleground; however, the predominantly vertical lines of these structures appear incongruent with the broad, horizontal lines of the upland plateaus. Smaller H-frame distribution lines in the valley appear less distinct, because the smaller scale and backdropping provide greater absorption into the surrounding landscape. The landscape scenic quality was determined to be moderate due to numerous landscape and vegetation features which are contrasted with human-made elements such as wind turbines, which detract from the scenic quality.

KOP H-2 (Figures E.2-1 and E.2-18a). KOP H-2 is located in the northern portion of the Hagerman Fossil Beds National Monument, in the lowlands of the Snake River valley. The KOP is directed to the north, downriver toward the Idaho Power–administered Lower Salmon Falls hydroelectric facility. The landscape is described as a shallow, U-shaped valley enclosed by the canyon walls of the Snake River. Predominant landforms include the vertical cliffs of the lava beds and upper plateau, the smooth water of the Snake River above the dam, and the gentle, undulating form of valley bottom. Valley walls appear as both gentle and rolling grassland, and steep/

angular rock. Vegetation is dominated by the broad, flat grassland on river-left, the vibrant green of the ornamental trees of Hagerman, and the grey/green of the willows lining the river channel. Man-made features appear dominant in the landscape and include multiple transmission tower structure types on both sides of the river, the Lower Salmon Falls hydroelectric project, and a boat ramp and a substation on river-right. A buoy string blocking access to the dam appears as a distinct collection of rounded forms that cross the river channel. The landscape scenic quality was determined to be low due to the dominance of human-made elements (transmission lines, dam, and substation), which detract from the scenic quality.

KOP H-4 (Figures E.2-1 and E.2-19). KOP H-4 is located on the Rim Trail, at the intersection between the Rim Trail and the Rim to River Trail. Views from this location include a 360º panoramic across the top of the Columbia Plateau, river valley, and Community of Hagerman. The KOP is directed north / northwest across the plateau. The landscape from this vantage point appears large in scale and panoramic. Predominant landforms include the broad flat Columbia Plateau, and the diagonal and geometric (pyramidal) form of the Snake River Canyon walls. Vegetation is dominated by the agricultural fields of the uplands, and the stippling of grasses along the canyon wall. Numerous wind turbines are situated in the foreground, appearing dominant due to the contrast of the oscillating turbine blades and vertical linear form against the horizontal line of the plateau. A lattice-structure transmission line is visible in the middleground; however, these forms appear subordinate and indistinct. A wooden monopole distribution line is located adjacent to the KOP and extends from the west, down the river canyon along the Rim to River Trail. The landscape scenic quality was determined to be low due to lack of landform and vegetative features and the dominance of human-made elements (wind turbines), which detract from the scenic quality.

KOP H-5 (Figures E.2-1 and E.2-19). KOP H-5 is located in a natural opening adjacent to the Rim Trail and Rim Trail parking lot. The landscape appears large-scale and panoramic, with views extending to the horizon for 360 degrees. The landscape is characterized by high variety, containing the broad flatlands of the Columbia Plateau, the undulating and diagonal slopes of the canyon walls, bold and prominent Snake River, and the vibrant greens and clustered residential and commercial structure of Hagerman. Distinct and interesting pyramidal forms are present in the foreground. Predominant lines are horizontal, diagonal, and curvilinear. Vegetation is composed of natural grassland and agriculture in the upland plateau and canyon wall, with the river valley and community of Hagerman dominated by vibrant ornamental vegetation and irrigated agriculture. Human-made modifications include wind turbine arrays in the foreground/middleground and lattice transmission structures on the plateau. These features appear linear, organized, and sequenced. Cultural features of Hagerman appear less dominant, as they are largely hidden from view by dense ornamental trees or appear small in scale compared to the surrounding landscape. The landscape scenic quality was determined to be moderate due to numerous landscape and vegetation features that are contrasted with human-made elements such as wind turbines, which detract from the scenic quality.

KOP H-6 (Figures E.2-1 and E.2-19). KOP H-6 is located at a shade shelter adjacent to a covered amphitheater at the Oregon Trail Overlook. Views from this location are directed north across the Columbia Plateau. The landscape appears large in scale and panoramic, with enclosure provide by distant mountains in the seldom seen distance zone. Primary landforms include the broad, flat upland plateau and Snake River Valley. These areas appear distinct and co-dominant, with the plateau characterized by short tan/green grasses, and the river valley characterized by the more vibrant green of ornamental trees and irrigated cropland. Cultural modification includes the adjacent roadway and H-frame transmission structures, and the wind turbines situated in the middleground. Turbine arrays appear linear and orderly, with their white color contrasting against the distant mountains. Though commercial and residential structures are visible in Hagerman, these features appear subordinate to the surrounding landscape, as they are largely obstructed by vegetation or appear relatively small in scale. The landscape scenic quality was determined to be moderate due to numerous landscape and vegetation features that are contrasted with human-made elements, such as a transmission line, which detracts from the scenic quality.

KOP H-7 (Figures E.2-1 and E.2-20). KOP H-7 is located at a walk-to interpretive panel at the Oregon Trail Overlook. Views from this location are directed north across the Columbia Plateau and Snake River Valley. The landscape appears large in scale and panoramic, with limited enclosure provide by distant mountains in the seldom seen distance zone.

Primary landforms include the broad, flat upland plateau, the valley wall, and Snake River Valley. As in KOP H-6, located in another area of this roadside pull-out, these areas appear distinct and co-dominant. The plateau is characterized by short tan/green grasses, and the river valley is characterized by the more vibrant green of ornamental trees and irrigated cropland. Situated between these two character types is the wide valley wall, characterized by a gradual slope containing undulating landforms, discrete pyramidal forms, and exposed roach banding. The landscape is dominated by the Snake River, with its blue color and reflective, smooth and glossy surface contrasting with the surrounding landscape.

Human-made modification includes the roadway in the foreground, and the wind turbines and transmission structures situated in the middleground. Turbine arrays appear linear and orderly, with their white color contrasting against the distant mountains. The lattice transmission structures are less contrasting; however, their vertical form is apparent due to the contrast with the flat, horizontal lines of the plateau. Though commercial and residential structures are visible in Hagerman, these features appear subordinate to the surrounding landscape, as they are largely obstructed by vegetation or appear relatively small in scale. The landscape scenic quality was determined to be moderate due to numerous landscape and vegetation features that are contrasted with human-made elements such as wind turbines which detract from the scenic quality.

KOP H-8 (Figures E.2-1 and E.2-20). KOP H-8 is located at an observation deck at the Snake River Overlook in the southern portion of Hagerman Fossil Beds National Monument. The observation deck contains three interpretive panels directing views to the north / northeast across the Snake River. Landscape character is enclosed top the

north by the steep, angular canyon walls of the Snake River. The landscape becomes more panoramic to the east, as views extend across Hagerman. The Snake River dominates views from the observation deck, largely due to its close proximity and its broad, flat, rounded form.

Vegetation is dominated by the spherical, elliptical, and rounded forms of the trees, shrubs, and grasses present in the valley floor, and the broad, flat irrigated area adjacent to the river. Though a narrow band of vegetation lines the northern edge of the river, this vegetation feature is subordinate to the more vibrant greens of the irrigated areas. H-frame transmission structures are present in the foreground, with conductors passing direct in front of the viewer. The top third of the wind turbines is visible to the north, with movement of blades apparent from this locations. A small, silver, conical-shaped and elevated water tank is located to the east. This feature, though distinct in form and shape, is not a dominant feature within the landscape. Within irrigated portions of the floodplain, the horizontal piping of several center pivot irrigation structure is visible. Though this structure is distinct, it appears consistent with the agricultural character of the floodplain. The landscape scenic quality was determined to be moderate due to numerous landscape and vegetation features that are contrasted with human-made elements such as a transmission line and wind turbines, which detract from the scenic quality.

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 would 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 567 (Figure E.2-2). Views from KOP 567 represent the views of recreational viewers on War Eagle Road looking southwest and being located adjacent to Highway 78. Focal views of the prominent terrain are considered to have moderate scenic quality. The natural landscape elements add a variety of form, line, color, and texture within the view, increasing the scenic quality. There is also a lack of human-made alterations adjacent to the view.

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 and Jarbidge Field Offices) and 29.2 miles of BLM-administered land with VRM Class III objectives (Bruneau, Burley, Jarbidge, and Owyhee Field Offices). 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 Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Revised Proposed Route for Segment 9, as well as to Route 9K and FEIS Proposed 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 Appendix M. 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.

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

Plan	Alternatives	Amendment Number	Routes	VRM-related Amendment Action
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
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

Construction and Operations

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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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 and Variation

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, Alternative 5 Helicopter-Assisted Construction, and Alternative 5 WWE Corridor 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 the route 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.

<u>Visual Resource Management Class Assessment</u>

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 the four 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 3.2-13) 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
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 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/]
H-1	REC	BLM VRM III	H	B	2.36	M-L	L	L
H-2	REC	BLM VRM III	H	C	0.96	M	L	L
H-4	REC	NPS	H	L	2.05	M-L	L	L
H-5	REC	NPS	H	M	2.60	M-L	L	L
H-6	REC	NPS	H	M	5.54	L	L	L
H-7	REC	NPS	H	M	5.32	L	L	L
H-8	REC	NPS	H	M	5.98	L	L	L
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	C	1.33	M-H	M	M
813	REC	BLM VRM III	H	C	<0.10	H	H	H
814	REC	BLM VRM III	H	C	0.16	H	H	H
816	REC	BLM VRM IV	H	C	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 H-1 (Figures E.2-1and E.2-17b). High-sensitivity residential and recreational viewers on the south side of the Thousand Springs Scenic Byway between the towns of Bliss and Hagerman, have focal views to the south. The viewing distance to Route 8G would be approximately 2.36 miles, resulting in moderate to low Project visibility.

The proposed Project would parallel existing structures approximately 2.3 miles to the south of the viewpoint. The proposed structures would be similar in structure and scale

to existing transmission structures. With the existence of other vertical elements such as wind turbines and H-frame transmission structures, contrast would appear weak and co-dominant when considered with overall surrounding human-made elements. Weak contrast, in this instance, would conform to the BLM VRM Class III objective which is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Visual contrast levels would be low due to the existing transmission lines and overall Class B scenic quality as well as the distance of the view. Visual impacts on viewers at this location would be low.

KOP H-2 (Figures E.2-1 and E.2-18b). High-sensitivity recreational viewers in the northern portion of the Hagerman Fossil Beds National Monument have focal views to the south/southwest. The viewing distance to Route 8G would be approximately 0.96 mile, resulting in moderate Project visibility. The proposed Project would parallel existing structures south of the viewpoint. The proposed structures would be similar in structure and scale to existing transmission structures. There are numerous existing transmission lines, a hydroelectric dam, and a substation within the view. With the existence of other vertical and industrial elements, contrast would appear weak and co-dominant when considered with the adjacent human-made elements. Weak contrast, in this instance, would conform to BLM VRM Class III objectives. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. With numerous human-made elements visible in the view, the transmission line would appear inferior or co-dominant to surrounding structures and would not draw the attention of an observer or dominate views. Visual contrast levels would be low due to the existing transmission lines, other industrial elements, and overall Class C scenic quality. Visual impacts on viewers at this location would be low.

KOP H-4 (Figures E.2-1 and E.2-19). High-sensitivity recreational viewers on the Rim Trail, at the intersection of between the Rim Trail and Rim to River Trail, in the Hagerman Fossil Beds National Monument have focal views to the 19north/northwest. The viewing distance to Route 8G would be approximately 2.05 miles, resulting in moderate to low Project visibility. The proposed Project would parallel existing structures south of the viewpoint. The proposed Project would parallel existing structures approximately 2.0 miles to the north of the viewpoint. The proposed structures would be similar in structure and scale to existing transmission structures. With the existence of other vertical elements such as dominant wind turbines and lattice transmission structures, contrast would appear weak and co-dominant when considered with overall surrounding man-made elements. The area in which KOP H-4 is located is not managed by the BLM with VRM objectives; therefore, VRM compliance has not been evaluated. 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.

KOP H-5 (Figures E.2-1 and E.2-19). High-sensitivity recreational viewers at a natural opening adjacent to the Rim Trail and Rim Trail parking lot in the Hagerman Fossil Beds National Monument have open, panoramic views to the north. The viewing distance to Route 8G would be approximately 2.60 miles, resulting in moderate to low Project visibility. The proposed Project would parallel existing structures approximately 2.60 miles to the north of the viewpoint. The proposed structures would appear similar in structure and scale to existing transmission structures. With the existence of other vertical elements such as dominant wind turbines and lattice transmission structures, contrast would appear weak and co-dominant when considered with overall surrounding human-made elements. The area in which KOP H-5 is located is not managed by the BLM with VRM objectives; therefore, VRM compliance has not been evaluated. Visual contrast levels would be low due to the existing transmission lines and distance to the viewer. Visual impacts on viewers at this location would be low.

KOP H-6 (Figures E.2-1 and E.2-19). High-sensitivity recreational viewers at a shade shelter adjacent to a covered amphitheater at the Oregon Trail Overlook have open, panoramic views to the north. The viewing distance to Route 8G would be approximately 5.54 miles, resulting in low Project visibility. The proposed Project would parallel existing structures approximately 5.54 miles to the north of the viewpoint. The proposed structures would appear similar in structure and scale to existing transmission structures which are barely perceptible from this distance. With the existence of other vertical elements such as dominant wind turbines and lattice transmission structures, as well as the far distance of the view, contrast would appear weak and co-dominant when considered with overall surrounding human-made elements. The area in which KOP H-6 is located is not managed by the BLM with VRM objectives; therefore, VRM compliance has not been evaluated. Visual contrast levels would be low due to the existing transmission lines and distance to the viewer. Visual impacts on viewers at this location would be low.

KOP H-7 (Figures E.2-1 and E.2-20). High-sensitivity recreational viewers at an interpretive panel at the Oregon Trail Overlook have open, panoramic views to the north. The viewing distance to Route 8G would be approximately 5.32 miles, resulting in low Project visibility. The proposed Project would parallel existing structures approximately 5.32 miles to the north of the viewpoint. The proposed structures would be appear similar in structure and scale to existing transmission structures which are barely perceptible from this distance. With the existence of other vertical elements such as dominant wind turbines and lattice transmission structures, as well as the far distance of the view, contrast would appear weak and co-dominant when considered with overall surrounding human-made elements. Like KOP H-6, the area in which KOP H-7 is located is not managed by the BLM with VRM objectives; therefore, VRM compliance has not been evaluated. Visual contrast levels would be low due to the existing transmission lines and distance to the viewer. Visual impacts on viewers at this location would be low.

KOP H-8 (Figures E.2-1 and E.2-20). High-sensitivity recreational viewers at an observation deck at the Oregon Trail Overlook in the southern portion of the Hagerman Fossil Beds National Monument have open, panoramic views to the north. The viewing distance to Route 8G would be approximately 5.98 miles, resulting in low Project visibility. The proposed Project would parallel existing structures approximately 5.98 miles to the north of the viewpoint. The proposed structures are far enough from the viewer that they would not be perceptible from this distance especially with intervening terrain. With the distance and terrain, contrast would not be perceptible. Like KOP H-7, the area in which KOP H-8 is located is not managed by the BLM with VRM objectives; therefore, VRM compliance has not been evaluated. Visual contrast levels would be low due to the existing transmission lines and distance to the viewer. Visual impacts on viewers at this location 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 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. The 2015 Jarbidge RMP reclassified the area where KOP 813 is located as VRM Class III, Class C scenic quality, 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 proximity 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 would 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	C	1.33	M-H	M	M
813	REC	BLM VRM III	H	C	<0.10	H	H	H
814	REC	BLM VRM III	H	C	0.16	H	H	H
816	REC	BLM VRM IV	H	C	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
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. The Revised Proposed Route would not conform to VRM Class II area designations in the Bennett Hills/Timmerman Hills MP to VRM Class III and to VRM Class I designations in the 1987 Jarbidge RMP to VRM Class IV. Route 8G would not conform to VRM Class II designated land managed under the Bruneau MFP. Route 8H would not conform to VRM Class II designations in the 1987 Jarbidge RMP and SRBOP RMP. See Tables 3.2-1 and 3.2-2 and Appendices F and G for further information on the required amendments.

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
567	REC	Private	H	M	0.31	H	H	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	C	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

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

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
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 567 (Figure E.2-2). High-sensitivity recreational viewers at KOP 567 would have a high level of Project visibility (0.31 mile from the Revised Proposed Route for Segment 9, representing a foreground view of the alignment). Views from KOP 567 represent the views of recreationalists on War Eagle Road looking southwest toward the alignment, which would skyline the view. Viewers would have a focal view toward the alignment with few opportunities for screening, resulting in contrast levels that would be high due to the lack of screening. Visual impacts on recreational viewers from this KOP and in the general vicinity are expected to be high for the Revised Proposed Route for Segment 9 due to the distance of the view as well as the lack of screening opportunities.

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 would 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	C	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 back-dropped 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.

Segment 9 Conformance to BLM VRM Classes

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 Segment 9 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.

Variations

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route

Two variations to the Revised Proposed Route in Segment 9 within the Jarbidge Field Office 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.

Toana Road Variation 1

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.

<u>Toana Road Variations – Conclusion</u>

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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation would not result in a change in alignment for either of the routes, and visual effects would be almost identical to those described for Routes 8H and 9K above; including the same KOPs and effects analyses. The most significant visual resource difference between this variation and the routes described above is that, for the portions constructed with helicopters, viewers would have a temporary visual intrusion of helicopter activity. Long-term visual effects would be nearly identical. While temporary access roads and overland access roads would be more aggressively reclaimed under this alternative, the overall visual effect for most observers would remain similar to the original routes. The arid environment often results in slow responses to vegetation restoration actions and wheel ruts are known to persist on the landscape.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the routes would still be approximately 250 feet apart, but would follow the FEIS Proposed 9 route for the 33.8 miles of Route 9K between MP 141.0 and Hemingway Substation and the 34.8 miles of 8G between MP 112.0 and the substation. The variation would start approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation results in the routes generally following the WWE corridor. Visual impacts for this variation would result in greater effects for KOPs associated with the FEIS Proposed 9 alignment than discussed under that route, due to the presence of two parallel lines instead of a single line. Table 3.2-10 summarizes the potential visual impact for each KOP in the WWE Corridor Variation.

Table 3.2-10. KOPs for the WWE Corridor Variation (same as comparison portion of FEIS Proposed 9)

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
581	RES/REC	Private	H	H	<0.10	H	H	H
586	RES	Private	H	H	0.74	M-H	M-H	M-H
582	RES	Private	H	H	1.20	M-H	M-H	M-H
592	REC	BLM VRM IV	M-H	C	2.25	L	L-M	L-M
1152	RES	Private	H	M	1.0	M -H	M-H	M-H
1114	REC	BLM VRM IV	H	A	0.25	H	H	H
567	REC	Private	H	M	0.31	H	H	H
1420	RES	Private	H	M	0.46	H	H	H
1607	REC	BLM VRM IV	H	B	1.20	M	M-H	M-H
572	REC	BLM VRM III	H	B	0.60	H	H	H
1145	REC	BOR VRM IV	H	M	1.42	M-H	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.

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 3.2-11 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 3.2-11. 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	22
Alternative 5 – Comparison Portion for WWE Corridor and Helicopter-Assisted Construction Variations	0.0	0.7	0.7	57.0	7
Alt. 5 WWE Corridor Variation	0.0	0.4	7.6	42.1	10
Alt. 5 Helicopter-Assisted Construction Variation	0.0	0.7	0.7	57.0	7
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).

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). 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.

[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.

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 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.

Alternative 5 would result in Routes 8G and 9K being parallel to each other, approximately 250 feet apart, from the point where they converge near Deadman Flat, to the Hemingway Substation. Visual resource effects of this alternative will be different for KOPs where the lines are parallel than they are for the individual routes. Table 3.2-12 summarizes KOPs for the parallel portion of the alternative, while Tables 3.2-13 and 3.2-14 summarize KOP impacts for those portions of Routes 8G and 9K (respectively) where the routes are not parallel.

Table 3.2-12. KOPs for Routes 8G and 9K, as part of Alternative 5, Where Parallel and Not Part of the WWE Corridor Variation (no changes from previous SEIS analysis)

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)[4/]	Visibility[2/]	Contrast[2/]	Impact[2/]
372	RES	Private	H	C	0.50	M-H	M-H	M-H
401*	REC	Private	H	M-H	3.50	L-M	M	M
816	REC	BLM VRM IV	H	C	1.40	M-H	M	M-H
386	REC	BLM VRM III	H	B	0.24	M-H	H	M-H
387*	REC	BLM VRM III	H	B	1.00	H	M-H	M
1137	RES	Private	H	C	1.04	M-H	M-H	M-H
1138	RES	Private	H	C	0.5	H	H	H
1573	REC	State of Idaho	L	C	0.20	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

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.
4/ Distances reflect distance to the route closest to the viewer, which differs depending on KOP location
* Asterisk indicates KOP is within the SRBOP.

Table 3.2-13. KOPs for Route 8G Where not Parallel to Route 9K under Alternative 5 or the WWE Corridor Variation (west to east)

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
H-1	REC	BLM VRM II	H	B	2.36	M-L	L	L
H-2	REC	BLM VRM I	H	C	0.96	M	L	L
H-4	REC	NPS	H	L	2.05	M-L	L	L
H-5	REC	NPS	H	M	2.60	M-L	L	L
H-6	REC	NPS	H	M	5.54	L	L	L
H-7	REC	NPS	H	M	5.32	L	L	L
H-8	REC	NPS	H	M	5.98	L	L	L
811	REC	BLM VRM II	H	C	1.33	M-H	M	M
813	REC	BLM VRM III	H	C	<0.10	H	H	H
814	REC	BLM VRM III	H	C	0.16	H	H	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
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
358	RES	Private	H	L	0.60	M-H	L	L-M

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.

Table 3.2-14. KOPs for Route 9K Where not Parallel with Route 8G under Alternative 5 or the WWE Corridor Variation

KOP	Viewers[1/]	Land Ownership	Viewer Rating[2/]	Scenic Quality[2/,3/]	Distance (miles)	Visibility[2/]	Contrast[2/]	Impact[2/]
793	RES	Private	H	L	2.4	L-M	L-M	L-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	C	0.30	H	M-H	M-H
419	RES	Private	H	L-M	1.6	L-M	M	L-M
407	RES	BLM VRM IV	H	B	0.90	H	H	H
452	RES	Private	H	M	1.00	M-H	M-H	H
454	RES	Private	H	M	<0.10	H	L-M	M

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.

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.

The Alternative 5 Helicopter-Assisted Construction Variation would reduce visual impacts of permanent roads and potential dust clouds by reduced traffic; however, visible marks on the landscape from temporary roads would likely still be present for years after construction is completed due to the arid climate and slow growth of native vegetation. Visible disruption for certain viewers would likely be higher during construction due to the increased visibility of construction components during aerial transport as well as the increased time of construction activities. Dust clouds would also likely be generated from helicopter rotors in the arid high desert landscape which would create temporary construction impacts.

The Alternative 5 WWE Corridor Variation would result in more VRM Class III area being crossed by the Project than the comparison portion of Alternative 5. However, it would also result in fewer miles crossing sensitive sage-grouse habitat. This variation would use the same alignment as FEIS Proposed 9 after MPs 141 and 112 of Routes 9K and 8G, respectively; however, the presence of two lines instead one along this portion of the variation would result in higher visual impacts than under other alternatives crossing the same area. This is reflected in the high number of KOPs with High and Moderate to High visual impacts. This variation is also located closer to residences than the comparison portion of Alternative 5.

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 Appendix M. 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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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 that contains design features specific to the SRBOP. The Proponents' 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 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-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, 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. Outside the SRBOP, mitigation beyond the EPMs and design features is not necessary. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP with respect to the SRBOP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 inside the SRBOP.

Summary of Remaining Impacts

After implementation of the EPMs and other design features discussed above, some Project-related impacts would likely remain both inside and outside the SRBOP. 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.

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

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), strategies to mitigate Project impacts are being considered. 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, 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 the framework plans in the POD, 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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).

<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 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 2009a) 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 identified the Selected Alternative in the ROD, 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.
- *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; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations.

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;the Toana Road Variations; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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 7 to 58 percent (average 28 percent) sample of the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed 9; Routes 8G, 8H, and 9K; the Toana Road Variations were completed between 2009 and 2015. The Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations follow routes previously analyzed; no additional surveys were completed for these variations. 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 Analysis Area

The search of the Idaho SHPO cultural records revealed that seven inventory projects have been conducted within the Toana Road Variations 1 and 1-A Analysis Area 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.

Alternative 5 Helicopter-Assisted Construction Variation Analysis Area

The search of the Idaho SHPO cultural records revealed that 33 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Alternative 5 Helicopter-Assisted Construction Analysis Area. A total of 31 inventory projects have been conducted since 1976. These projects examined 117,782 acres of federal and state lands. The inventories included 117,576 acres of intensive survey and 206 acres of reconnaissance-level survey. In addition to the inventory projects, two non-inventory studies consisting of a regional monograph and a sampling plan have also been prepared.

Alternative 5 WWE Corridor Variation Analysis Area

The search of the Idaho SHPO cultural records revealed that 38 previous cultural resources studies, inclusive of inventories and other investigations, were conducted within the Alternative 5 WWE Corridor Variation Analysis Area. A total of 34 inventory projects have been conducted since1976. These projects examined 118,010 acres of federal and state lands. The inventories included 117,759 acres of intensive survey and 251 acres of reconnaissance-level survey. In addition to the inventory projects, four non-inventory studies consisting of a regional monograph, a sampling plan, and two Idaho Department of Transportation annual archaeological investigations reports have also been prepared.

In total, a diverse range of recorded cultural resources exist across the Analysis Areas. A total of 1,692 resource locations[1] have been identified, including 882 prehistoric and 810 historic resources. Most (47 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 (67 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 recorded 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	13.3
Route 8G	6	0	6	0	32	47	91	10.3
Route 8H	8	9	12	0	31	50	110	12.5
Segment 9 Revised Proposed Route	4	9	12	0	73	48	146	16.6
FEIS Proposed 9	2	0	6	0	78	63	149	16.7
Route 9K	2	0	6	0	78	62	148	16.6
Toana Variation 1	0	0	2	0	12	5	19	2.2
Toana Variation 1-A	0	0	2	0	19	6	27	3.1
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	22	18	40	4.5
Alternative 5 WWE Corridor Variation	0	0	0	0	20	15	35	4.0
TOTALS	**39**	**18**	**46**	**5**	**414**	**360**	**882**	**100.0**
Percent	**4.4**	**2.0**	**5.2**	**0.5**	**47.0**	**40.9**	**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 0.5-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	18.7
Route 8G	4	9	15	1	5	66	100	12.3
Route 8H	10	7	31	2	3	77	130	16.1
Segment 9 Revised Proposed Route	10	6	17	3	9	65	110	13.6
FEIS Proposed 9	5	9	1	3	14	80	112	13.8
Route 9K	5	8	1	2	12	67	95	11.7
Toana Variation 1	1	0	1	0	1	14	17	2.1
Toana Variation 1-A	1	0	1	0	1	16	19	2.3
Alternative 5 Helicopter-Assisted Construction Variation	2	2	0	0	3	24	31	3.8
Alternative 5 WWE Corridor Variation	2	5	0	2	3	33	45	5.6
TOTALS	**57**	**52**	**67**	**26**	**66**	**542**	**810**	**100.0**
Percent	**7.0**	**6.4**	**8.3**	**3.2**	**8.2**	**66.9**	**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 0.5-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; the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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.

<u>Construction and Operations</u>

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 and Variation

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 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 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 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 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 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 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 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. In addition, there is a pioneer cemetery and a stage stop approximately 0.75 mile north of the Route 9K, near the Shoofly Creek/Mud Flat Byway, that would not be affected by the Project.

Variations

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, as well as Route 9K and FEIS Proposed 9, 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart in this portion of the alternative. The variation considers helicopter-assisted construction for the 33.8 miles of Route 9K between MP 141.0 and the Hemingway Substation and 34.8 miles of Route 8G between MP 112.0 and the substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation may affect 71 recorded sites (40 prehistoric and 31 historic), for a ratio of approximately 1 site/mile. The Helicopter-Assisted Construction Variation would cross several non-NHTs, including the Silver City to Boise City 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.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart in this portion of the alternative. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 33.8 miles of Route 9K between MP 141.0 and the Hemingway Substation and 34.8 miles of 8G between MP 112.0 and the substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

This variation may affect 80 recorded sites (35 prehistoric and 45 historic), for a ratio of approximately 0.8 sites/mile. The WWE Corridor Variation would cross several non-NHTs, including the Silver City to Boise City 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.

Prehistoric Resources Summary

Previously recorded prehistoric resources in the Analysis Area include all six defined resource types. Excluding isolated finds, the majority (approximately 79 percent) of recorded prehistoric 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 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 number of limited activity sites have been evaluated as eligible (12 percent) or not eligible (24 percent) for the NRHP.

Table 3.3-3. 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
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	0
Alternative 5 WWE Corridor Variation	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
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	0
Alternative 5 WWE Corridor Variation	0	0	0	0	0
Totals	**0**	**14**	0	**4**	**18**
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

Table 3.3-3. Recorded Prehistoric Resources by Route Segment, Site Type, and NRHP Eligibility (continued)

Site Type and Route	Not Eligible	Eligible	NR-Listed	Unevaluated	Totals
Route 9K	0	0	0	0	0
Toana Variation 1	0	0	0	0	0
Toana Variation 1-A	0	0	0	0	0
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	0
Alternative 5 WWE Corridor Variation	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
Alternative 5 Helicopter-Assisted Construction Variation	5	1	0	16	22
Alternative 5 WWE Corridor Variation	5	0	0	15	20
Totals	**99**	**51**	**0**	**264**	**414**
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
Alternative 5 Helicopter-Assisted Construction Variation	17	0	0	1	18
Alternative 5 WWE Corridor Variation	15	0	0	0	15
Totals	**336**	**0**	**0**	**24**	**360**

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 (55 percent) along the Segment 9 routes. Because they are shorter, the Toana Road Variations and the Alternative 5 Helicopter-Assisted Construction and the WWE Corridor 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 264 unevaluated, 99 not eligible, and 51 eligible properties.

Historic Resources Overview

The recorded historic resources identified within the Segments 8 and 9 Revised Proposed Routes, FEIS Proposed 9, Routes 8G, 8H, and 9K, and the Toana Road, Alternative 5 Helicopter-Assisted Construction, and Alternative 5 WWE Corridor Variations Analysis Area include all defined resource types. Approximately 67 percent of the historic resources fall within the Historic Sites category and are largely composed of refuse scatters or isolated artifact locations. Waterworks-related sites encompass about 8 percent of historic resources, with most of these associated with C.J. Strike Reservoir. Approximately 6 percent are agricultural-related sites, 8 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, as well as the Toana Road Variations and the Alternative 5 Variations. 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. 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
Alternative 5 Helicopter-Assisted Construction Variation	0	2	0	0	2
Alternative 5 WWE Corridor Variation	0	2	0	0	2
Totals	**0**	**35**	**4**	**18**	**57**

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
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
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
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	2	2
Alternative 5 WWE Corridor Variation	0	0	0	5	5
Totals	**2**	**2**	**0**	**48**	**52**
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
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	0
Alternative 5 WWE Corridor Variation	0	0	0	0	0
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
Alternative 5 Helicopter-Assisted Construction Variation	0	0	0	0	0
Alternative 5 WWE Corridor Variation	0	0	0	2	2
Totals	**4**	**11**	**0**	**11**	**26**
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

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
Route 9K	7	2	0	3	12
Toana Variation 1	0	0	0	1	1
Toana Variation 1-A	0	0	0	1	1
Alternative 5 Helicopter-Assisted Construction Variation	0	2	0	1	3
Alternative 5 WWE Corridor Variation	0	2	0	1	3
Totals	**29**	**18**	**0**	**19**	**6**
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
Alternative 5 Helicopter-Assisted Construction Variation	16	0	0	8	24
Alternative 5 WWE Corridor Variation	25	0	0	8	33
Totals	**394**	**21**	**1**	**126**	**542**

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, Routes 8G, 8H, and 9K, as well as the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations 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

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.

<u>Power Transmission Sites</u>

- *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

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.

Recorded waterworks sites within 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 several canal sites cross within the Toana Road Variations, including 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.

Finally, three waterworks-related sites cross the Helicopter-Assisted Construction Variation and the WWE Corridor Variation routes. These sites include the unevaluated Bernard Ditch and two NRHP-eligible properties consisting of an unnamed ditch and a Civilian Conservation Corps rock-lined ditch and associated features.

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 recorded site type, 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 131 resources or 54 percent of the Rural Sites. One refuse scatter also contains paleontological remains. Isolated finds include a small group of 84individual glass, metal, or ceramic artifacts. A group of 14 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. A small group of 10 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. Two rural sites associated with communications include a segment of telephone line and a segment of telegraph line.

Class II, 15 Percent Sample Surveys

Pedestrian cultural resources inventories were conducted for a 7 to 58 (average 28.0) percent sample of the Analysis Area for the Segments 8 and 9 Revised Proposed Routes; FEIS Proposed Route 9; Routes 8G, 8H, and 9K; the Toana Road Variations; the Alternative 5 Helicopter-Assisted Construction Variation; and the Alternative 5 WWE Corridor Variation. The average surveyed area (28 percent) is greater than the prescribed 15 percent because of overlap among the routes. A total of 294 archaeological 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
Alternative 5 Helicopter-Assisted Construction	66.1[1/]	8.9	13.5	22
Alternative 5 WWE Corridor Variation	62.2[1/]	33.5	53.9	26
TOTALS	**1,061.2**	**322.2 (30%)**	**28.0 (average)**	**294**

Note: Mileages are rounded to the nearest tenth of a mile.
1/ Includes combined mileage for Routes 8G and 9K as part of Alternative 5.

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 FEIS Proposed 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.

Helicopter-Assisted Construction Variation Archaeological Sites

The approximately 9 miles surveyed for Helicopter-Assisted Construction Variation identified 22 archaeological sites, or one site per 0.4 mile. These resources consist of 10 prehistoric sites, all lithic scatters, with one site also containing a historic refuse scatter; 11 historic sites, including 7 refuse scatters, 1 telegraph line, 2 historic trails, and 1 ditch; and 1 historic refuse scatter with paleontological remains. The historic trails segments include the Road from Silver City to Boise City and the Reynolds Creek Road.

WWE Corridor Variation Archaeological Sites

The approximately 34 miles surveyed for the WWE Corridor Variation identified 26 archaeological sites, or one site per 1.28 mile. These resources consist of 12 prehistoric sites, all lithic scatters, with 2 sites also containing a historic refuse scatter; 13 historic sites, including 9 refuse scatters, 1 telegraph line, 2 historic trails, and 1 ditch; and 1 historic refuse scatter with paleontological remains. The historic trails segments include the Road from Silver City to Boise City and the Reynolds Creek Road.

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
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

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
GW1-206	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
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

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
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
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

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
GW1-029	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
GW1-199	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

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
GW1-195	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
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

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
GW1-033	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
GW1-199	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
Alternative 5 Helicopter-Assisted Construction Variation				
10OE09358	Historic	Waterworks	Ditch	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
10OE09764	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
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	Unevaluated
GW3-135	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW3-136	Historic	Historic Sites	Telegraph Line	Not Eligible
GW9-1-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW9-2-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-1	Historic/ Paleontological	HS/Paleontological	Refuse Scatter and Paleontological Site	Unevaluated
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
GW964-1	Multiple	Limited Activity/ Historic Sites	Lithic Scatter; Refuse Scatter	Unevaluated
GW964-2	Historic	Historic Sites	Refuse Scatter	Not Eligible
GW965-1	Historic	Historic Sites	Refuse Scatter	Not Eligible
Alternative 5 WWE Corridor Variation				
10OE09358	Historic	Waterworks	Ditch	Eligible
10OE09441	Multiple	Isolated Artifact/ Historic Sites	Obsidian Flake and Historic Refuse Scatter	Not eligible
10OE09764	Historic	Historic Sites	Refuse Scatter	Unevaluated
10OE10502	Historic	Historic Sites	Refuse Scatter	Not eligible
10OE11098	Historic	Historic Trail	Road From Silver City to Boise City	Eligible
73-18011	Historic	Historic Trail	Reynolds Creek Road	Eligible
GW1-197	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
GW3-134	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW3-135	Historic	Historic Sites	Refuse Scatter	Not eligible
GW3-136	Historic	Historic Sites	Telegraph Line	Not eligible
GW9-1-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW9-2-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW942-1	Historic/ Paleontological	Historic Sites/ Paleontological	Refuse Scatter and Paleontological Site	Unevaluated
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

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
GW951-1	Prehistoric	Limited Activity	Lithic Scatter	Unevaluated
GW955-1	Historic	Historic Sites	Historic Refuse Scatter	Not eligible
GW964-1	Multiple	Limited Activity/ Historic Sites	Lithic Scatter and Historic Refuse Scatter	Unevaluated
GW964-2	Historic	Historic Sites	Historic Refuse Scatter	Not eligible
GW965-1	Historic	Historic Sites	Historic Refuse Scatter	Not eligible

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.

Alternative 5 Helicopter-Assisted Construction Variation

Cultural resources identified within the Alternative 5 Helicopter-Assisted Construction Variation APE consist of 10 prehistoric sites, all lithic scatters, with 1 site also containing a historic refuse scatter; 11 historic sites, including 7 refuse scatters, 1 telegraph line, 2 historic trails, and 1 ditch; and 1 historic refuse scatter with paleontological remains. Collectively, the NRHP eligibility of these 22 sites includes 3 eligible, 9 not eligible, and 10 unevaluated properties. These same sites are within the APE for the comparison portion of Alternative 5.

The eligible sites include segments of the Road from Silver City to Boise City and the Reynolds Creek Road, as well as a historic ditch. The not eligible sites include mostly historic refuse scatters and prehistoric lithic scatters, as well as a segment of telegraph line. The unevaluated sites include several lithic scatters and refuse scatters as well as a historic refuse scatter with paleontological remains.

Alternative 5 WWE Corridor Variation

Cultural resources identified within the Alternative 5 WWE Corridor Variation Analysis Area include 13 historic, 1 historic/paleontological, and 12 prehistoric resources, the latter including 2 resources also containing historic refuse. Collectively, the NRHP eligibility of these 26 sites includes 3 eligible, 12 not eligible, and 11 unevaluated properties. The comparison portion of Alternative 5 would have 22 sites including 3 eligible, 9 not eligible, and 10 unevaluated properties (these are discussed under the Helicopter-Assisted Construction Variation above).

The eligible sites include segments of the Road from Silver City to Boise City and the Reynolds Creek Road, as well as a historic ditch. The not eligible sites include mostly historic refuse scatters and prehistoric lithic scatters, as well as a segment of telegraph line. The unevaluated sites include several lithic scatters and refuse scatters as well as a historic refuse scatter with paleontological remains.

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 prehistoric 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 Alternatives 1 (the Revised Proposed Routes for Segments 8 and 9) and 2 (Revised Proposed 8 and FEIS Proposed 9) would have the greatest and most consequential impacts. Alternative 3 would be intermediate between Alternatives 1 and 5 (see Table 3.3-7).

With regard to the Alternative 5 variations—the Helicopter-Assisted Construction Variation and the WWE Corridor Variation—resource avoidance would be more feasible under Helicopter-Assisted Construction Variation because there would be greater opportunities for placement of impacts and avoidance.

Table 3.3-7. Comparison of Impacts to Cultural Resources from the Seven Action Alternatives[1/]

	Prehistoric Resources (Number)					Historic Resources (Number)							
Alternative[2/]	**Open Camp**	**Rock Feature**	**Sheltered Camp**	**Rock Image**	**Limited Activity**	**Historic Trails**	**Agricultural/ Animal Husbandry**	**Energy Develop-ment**	**Trans-portation**	**Water Works**	**Historic Sites**	**Totals**	***Percent***
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/ Prehistoric 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
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
Alternative 6 = Route 8H and FEIS Proposed 9
Alternative 7 = Route 8H and Route 9K

Table 3.3-8. Comparison of Impacts to Cultural Resources from the Alternative 5 Variations[1/]

	Prehistoric Resources (Number)					Historic Resources (Number)							
Alternative[2/]	**Open Camp**	**Rock Feature**	**Sheltered Camp**	**Rock Image**	**Limited Activity**	**Historic Trails**	**Agricultural/ Animal Husbandry**	**Energy Develop-ment**	**Trans-portation**	**Water Works**	**Historic Sites**	**Totals**	***Percent***
5 [2/]	8	0	14	0	122	10	17	17	3	18	147	**356**	***13.1***
5 [3/]	8	0	12	0	132	11	19	16	3	20	157	**378**	***14.2***
5 [4/]	8	0	12	0	130	11	22	16	5	20	166	**390**	***13.6***

1/ Prehistoric 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 5 = Route 8G and Route 9K including Toana Road Variation 1
Alternative 5 = Route 8G and Route 9K including Helicopter-Assisted Construction Variation
Alternative 5 = Route 8G and Route 9K including WWE Corridor Variation

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 Appendix M.

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 Appendix M.

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, 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 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).

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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 EPM and other design features 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.

BLM Compensatory Mitigation

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.

In addition to the Project-wide mitigation process described above, specific measures to ensure mitigation and enhancement of cultural resources within the SRBOP would be designed to comply with requirements in the enabling statute of the SRBOP. 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 the framework plans in the POD, 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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).

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).

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 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).

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.

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

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

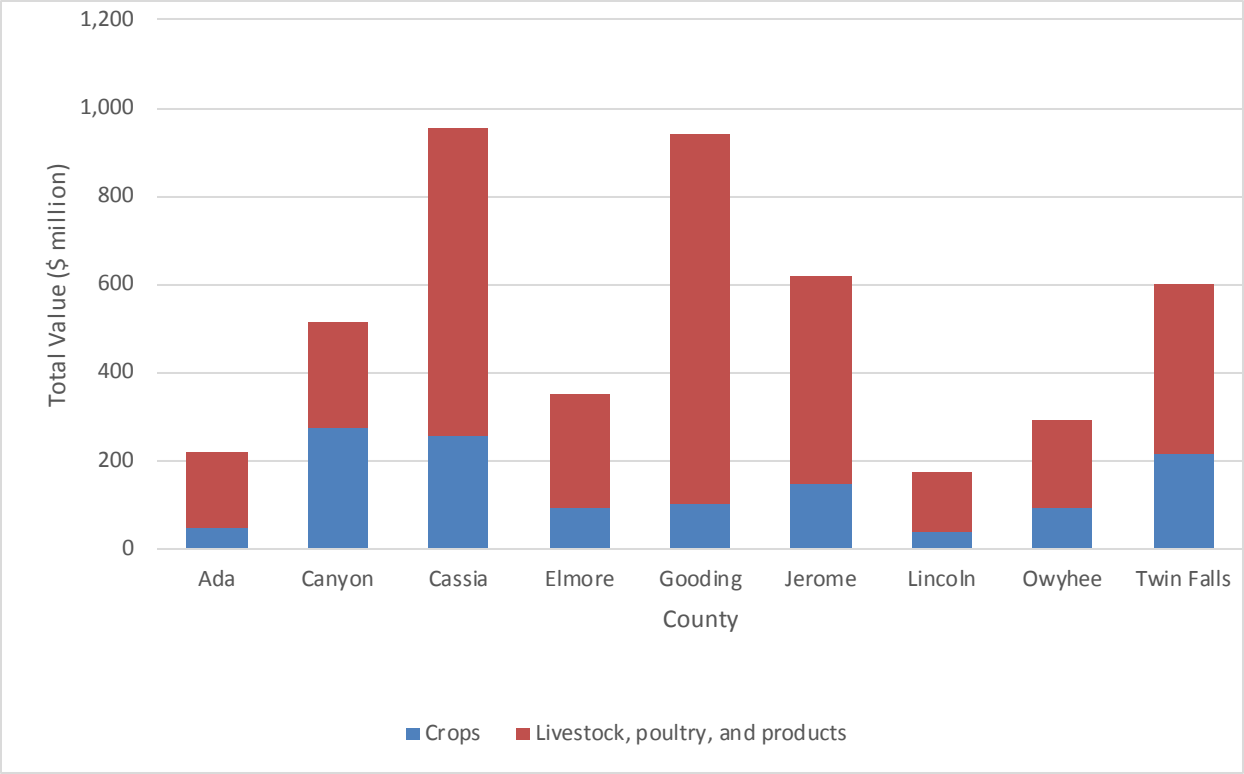
Land in farms accounted for almost one quarter (22 percent) of the total land area in Idaho in 2012. Land in farms as a share of total land area by county ranged from 17 percent (Lincoln County) to 97 percent (Owyhee County) (Table 3.4-6). Average farm sizes ranged from 117 acres in Ada County to 1,295 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 IDARNG for training since 1953. A recent study evaluated the regional economic impact of IDARNG operations at the OCTC and Gowen Field on a three-county area comprising 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. IDARNG 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 IDARNG 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 IDARNG 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 Appendix M. 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.

Population

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 and Variation

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 IDARNG 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 IDARNG 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 IDARNG 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 IDARNG's contribution to the regional economy or whether these impacts, should they occur, would result in less or more local spending. The area that IDARNG 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.

Variations

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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The Proponents estimate that construction under this variation would require up to 1,600 helicopter flights over a period of 2 to 3 months. They also estimate that the total workforce for helicopter-assisted construction would increase approximately 10 to 15 percent compared to conventional construction due to the additional workers required to support helicopter operations. The share of workers expected to be hired locally is expected to be the same under the helicopter-assisted and conventional construction scenarios. Based on other projects the Proponents have completed, helicopter-assisted construction would cost an additional $1 million to $3 million per mile compared to conventional construction (Smith 2016).

Population

Table 3.4-15 compares the average and peak numbers of people expected to temporarily relocate during construction of Route 8G with the corresponding 2014 population totals by county. Table 3.4-27 provides a similar comparison for Route 9K. 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).

For the purposes of analysis, the workforce required for helicopter-assisted construction is assumed to be 15 percent higher than the workforce required for the comparison portions of Routes 8G and 9K. For both 8G and 9K, this would result in a modest increase in the average and peak numbers of people expected to temporarily relocate to Owyhee County. For both routes, the average and peak estimates would increase by approximately 4 and 7 people, respectively, an increase of about 5.4 percent compared to the total estimates for Owyhee County for each route (see Tables 3.4-15 and 3.4-27). Viewed as a share of the population in Owyhee County, these increases (4 and 7 people) would be less than 0.1 percent of the 2014 population.

Economy and Employment

The regional economic impacts associated with the Helicopter-Assisted Construction Variation 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). As discussed above, compared to the 2013 scenario, Routes 8G and 9K together would add 27.7 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, a combined increase of 5.5 percent. In addition, the Helicopter-Assisted Construction Variation would also result in a relatively modest increase in direct construction employment and income, as well as Project-related expenditures.

The Helicopter-Assisted Construction Variation would use a combination of light, medium, and heavy lift helicopters to transport personnel, equipment, and construction materials. Some equipment would also be transported by conventional methods via temporary roads. This variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, affect the same rangeland, crop lands, and other farm lands during construction. However, fewer acres would be affected during operation because the roads would be temporary, potentially resulting in

lower economic impacts to agricultural lands. Impacts to agriculture are assessed in more detail in Section 3.18 – Agriculture.

Housing

The commuting analysis presented for Segment 9 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, and this would likely be the case with the Alternative 5 Helicopter-Assisted Construction Variation for both Routes.

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 Alternative 5 Helicopter-Assisted Construction Variation for both Routes.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to the Alternative 5 Helicopter-Assisted Construction Variation for both Routes.

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 Alternative 5 Helicopter-Assisted Construction Variation for both Routes.

Tax Revenues

Construction

Estimated sales and use tax revenues for Routes 8G and 9K are presented by county in Tables 3.4-16 and 3.4-28, respectively. The use of helicopter-assisted construction would cost an additional $1 million to $3 million per mile compared to conventional construction (Smith 2016). The share of these additional costs associated with materials, supplies, and equipment would be subject to sales and use tax, and would result in a relative increase in estimated Project-related sales and use tax revenues in Owyhee County for both Routes 8G and 9K.

Operations

Estimated property tax revenues for Routes 8G and 9K are presented by county in Tables 3.4-17 and 3.4-29, respectively. These 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. Based on this approach, the additional $1 million to $3 million per mile associated with this variation could increase the property tax revenues expected to be generated in Owyhee County.

As discussed in Section 3.4.2.2, 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. 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 estimates presented for Routes 8G and 9K in Tables 3.4-17 and 3.4-29 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. Relative increases in property tax revenues associated with the Helicopter-Assisted Construction Variation would be added to the second of these parts: the amount by which property taxes in Owyhee County could be potentially reduced.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor. The combined total length (8G plus 9K) would consist of 62.2 miles, which would be 3.9 miles shorter than the comparison portion of Alternative 5.

<u>Population</u>

Table 3.4-15 compares the average and peak numbers of people expected to temporarily relocate during construction of Route 8G with the corresponding 2014 population totals by county. Table 3.4-27 provides a similar comparison for Route 9K. 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).

For the WWE Corridor Variation, the average and peak estimates for both routes would decrease by approximately 2 and 3 people, respectively, a decrease of about 2.1 percent compared to the total estimates for Owyhee County for each route (see Tables 3.4-15 and 3.4-27). Viewed as a share of the population in Owyhee County, these decreases (2 and 3 people) would be less than 0.1 percent of the 2014 population.

<u>Economy and Employment</u>

The regional economic impacts associated with the WWE Corridor Variation 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, Routes 8G and 9K together would add 27.7 miles to the length of the proposed transmission line in the EPC 3 Analysis Area, a combined increase of 5.5 percent. This total addition would be reduced by 3.9 miles under the

WWE Corridor Variation, resulting in a total increase of 23.8 miles or 4.8 percent to the length of the proposed transmission line in the EPC 3 Analysis Area.

Housing

The commuting analysis presented for Segment 9 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, and this would likely be the case with the Alternative 5 WWE Corridor Variation for both Routes.

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 Alternative 5 WWE Corridor Variation for both Routes.

Education

The conclusions presented with respect to education in Section 3.4.2.2 of the 2013 FEIS would also apply to the Alternative 5 WWE Corridor Variation for both Routes.

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 Alternative 5 WWE Corridor Variation for both Routes.

Tax Revenues

Construction

Estimated sales and use tax revenues for Routes 8G and 9K are presented by county in Tables 3.4-16 and 3.4-28, respectively. Routes 8G and 9K would be 1.9 miles and 2.0 miles shorter under the Alternative 5 WWE Corridor Variation, and together would be 3.9 miles shorter than the comparison portion of Alternative 5. The sales and use tax estimates presented for Routes 8G and 9K are based on average values per mile. Therefore, a reduction in total length would result in a commensurate decrease in estimated sales and use tax revenues. Estimated sales and use tax revenues would decrease by about $60,000 for each route, a decrease of about 2 percent compared to the total estimates for Owyhee County for each route (see Tables 3.4-16 and 3.4-28).

Operations

Estimated property tax revenues for Routes 8G and 9K are presented by county in Tables 3.4-17 and 3.4-29, respectively. Like the sales and use tax estimates, the property tax estimates presented for 8G and 9K are based on average values per mile. Therefore, a reduction in total length would result in a commensurate decrease in estimated property tax revenues. Estimated property tax revenues would decrease by about $11,000 (8G) and $12,000 (9K), a decrease of about 2 percent compared to the total estimates for Owyhee County for each route (see Tables 3.4-17 and 3.4-29).

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.

Alternative 1 – Proposed Action (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 3.4.2.3).

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

County	Peak Number of People Temporarily Relocating[1/]						
	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

County	2014 Population[1/]	Share of 2014 Population (Percent)[2/]						
		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 IDARNG 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

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 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 IDARNG 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 IDARNG 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).

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 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 5 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).

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 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 5 Helicopter-Assisted Construction Variation

The Alternative 5 Helicopter-Assisted Construction Variation would consist of 32.9 miles of 8G and 33.2 miles of 9K, for a combined total length of 66.1 miles. The impacts associated with this variation correspond to those described above for the two routes in Section 3.4.2.3.

Alternative 5 WWE Corridor Variation

The Alternative 5 WWE Corridor Variation would consist of 31.0 miles of 8G and 31.2 miles of 9K, replacing 32.9 miles of 8G and 33.2 miles of 9K in the comparison portion of these routes. The impacts associated with this variation correspond to those described above for the two routes in Section 3.4.2.3.

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

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 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).

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 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 Appendix M. 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 that contains design features specific to the SRBOP. The Proponents' 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 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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. No additional compensatory mitigation is needed.

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.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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) 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 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). 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 Appendix M of this FSEIS. 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 and Variation

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

Notes:
1/ X indicates that the census block group is crossed by the identified route.
2/ The Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations, as well as the comparison portion of Alternative 5 (parts of Routes 8G and 9K), would not cross any of these census block groups.

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

Notes:
1/ X indicates that the census block group is crossed by the identified route.
2/ The Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations, as well as the comparison portion of Alternative 5 (parts of Routes 8G and 9K), would all cross Block Groups 1 and 2, Census Tract 9502 in Owyhee County.

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

Notes:
1/ X indicates that the census block group is crossed by the identified alternative.
2/ The Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations, as well as the comparison portion of Alternative 5, would not cross any of these census block groups.

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:
1/ X indicates that the census block group is crossed by the identified alternative.
2/ The Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations, as well as the comparison portion of Alternative 5, would all cross Block Groups 1 and 2, Census Tract 9502 in Owyhee County.

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.

Inclusion of the Toana Road Variations (1 or 1-A) into any of the alternatives would result in very similar effects when compared to the unaltered version of the alternatives. Both variations cross the same three census block groups as the comparison portion of each alternative, including one potential low-income census block groups (Block Group 3, Census Tract 15 in Twin Falls County) (see Table 3.5-8).

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 3.5.2.3). 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).

The Helicopter-Assisted Construction Variation would have very similar effects to the comparison portion of Alternative 5. This variation would cross the same two census block groups (Block Groups 1 and 3, Census Tract 9502 in Owyhee County) as the comparison portion of Alternative 5, both of which are potential low-income census block groups (Table 3.5-8).

The WWE Corridor Variation would have very similar effects to the comparison portion of Alternative 5. This variation would cross the same two census block groups (Block

Groups 1 and 3, Census Tract 9502 in Owyhee County) as the comparison portion of Alternative 5, both of which are potential low-income census block groups (Table 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 Appendix M of this FSEIS. 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 Appendix M 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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 (e.g., forested habitats are not found along Segments 8 and 9), 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:

- what impacts would occur to the values that the SRBOP was established to manage and protect, which include 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 2014a)
- 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 Appendix M. 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 and Variation

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.

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.

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.

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).

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.

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).

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.

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.

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).

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 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).

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.

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 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).

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.

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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

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).

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.

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).

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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The Helicopter-Assisted Construction Variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of Route 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

Helicopter-assisted construction is intended to reduce long-term disturbance. This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction. This variation would utilize low-

impact vehicles and ground equipment to support the construction of foundations and tower erection. Helicopter-assisted construction may result in a minimization of vegetation impacts during construction because the disturbance would generally be completed with low-impact construction vehicles utilizing overland access. The main difference between this variation and the proposed construction methods for Alternative 5 is that there would be no permanent roads built under this variation and all temporary roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent roads along this variation). Disturbances related to the use of ground-based construction equipment in the area and the initial disturbance to vegetation during construction (as described above for the proposed construction methods) would still occur under this variation.

It is possible that operational long-term impacts to vegetation under this variation could be reduced compared to the proposed methods if the temporary roads are successfully restored following construction. However, it is also possible that operation of the Project under this variation could have an increased potential for impacts to vegetation if new roads need to be constructed at a later time (after construction is completed) in order to support necessary repairs to the Project during operation.

Construction

The Alternative 5 Helicopter-Assisted Construction Variation would impact approximately 1,029 total acres of vegetation during construction, slightly less than the comparison portion of Alternative 5 (Table 3.6-15). The Helicopter-Assisted Construction Variation would impact less shrubland (137 acres less) than the comparison portion of Alternative 5, but would impact more grassland and other cover types (9 acres and 25 acres more, respectively).

During construction along the Helicopter-Assisted Construction Variation, approximately 16 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 the Helicopter-Assisted Construction Variation include 7 acres of impacts to shrubland, less than 1 acre to grassland, and 2 acres to other cover types, for a total of 9 acres of vegetation impacted (Table 3.6-15). Impacts to vegetation within the SRBOP would be the same for the comparison portion of Alternative 5 as for the Helicopter-Assisted Construction Variation.

Table 3.6-15. Comparison of Construction-related Vegetation Impacts (acres) for the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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.	
Comparison portion for Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations								
BLM	895 [7]	–	–	<1	–	13 [<1]	46 [2]	**954 [9]**
State	46	–	–	–	–	t[5]	3	**50**
Private	77 [2]	–	–	t[5]	2	20 [<1]	29 [5]	**129 [7]**
Total [4/]	**1,018 [9]**	**–**	**–**	**<1**	**2**	**33**	**79 [7]**	**1,133 [16]**

Table 3.6-15. Comparison of Construction-related Vegetation Impacts (acres) for the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations (continued)

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.	
Alternative 5 Helicopter-Assisted Construction Variation								
BLM	749 [7]	–	–	<1	–	20 [<1]	51 [2]	**820 [9]**
State	29	–	–	–	–	t[5]	3	**32**
Private	103 [2]	–	–	t[5]	2	22 [<1]	50 [5]	**177 [7]**
Total [4/]	**881 [9]**	**–**	**–**	**<1**	**2**	**42 [<1]**	**104 [7]**	**1,029 [16]**
Alternative 5 WWE Corridor Variation								
BLM	880 [127]	–	–	<1	–	10 [<1]	29 [11]	**919 [138]**
State	33	–	–	–	–	–	<1	**34**
Private	109 [41]	–	–	<1	–	23	27 [5]	**159 [47]**
Total [4/]	**1,022 [168]**	**–**	**–**	**<1**	–	**33 [<1]**	**56 [16]**	**1,112 [184]**

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.

Operations

Operations of the Alternative 5 Helicopter-Assisted Construction Variation would result in approximately 71 acres of permanent impacts to vegetation, and would primarily affect shrubland and "other" cover types (Table 3.6-16). The Helicopter-Assisted Construction Variation would have fewer permanent impacts than the comparison portion of Alternative 5 (30 fewer acres).

Approximately 5 acres of vegetation within the SRBOP would be permanently impacted (regardless of land ownership/management) during operations along the Helicopter-Assisted Construction Variation. Permanent impacts to vegetation on BLM-managed land within the SRBOP along the Helicopter-Assisted Construction Variation include 2 acres of impacts to shrubland, less than 1 acre to grassland, and less than 1 acre to other cover types, for a total of 2 acres of vegetation impacted (Table 3.6-16). Operational impacts to vegetation within the SRBOP would be the same for the comparison portion of Alternative 5 as for the Helicopter-Assisted Construction Variation.

Table 3.6-16. Comparison of Operations-related Vegetation Impacts (acres) for the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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.	
Comparison portion for Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations								
BLM	68 [2]	–	–	–	–	2 [<1]	11 [<1]	**82 [3]**
State	5	–	–	–	–	t[5]	<1	**6**
Private	6 [<1]	–	–	–	2	<1 [t[5]]	5 [2]	**14 [2]**
Total [4/]	**79 [2]**	**–**	**–**	**–**	**2**	**2 [<1]**	**16 [2]**	**101 [5]**
Alternative 5 Helicopter-Assisted Construction Variation								
BLM	40 [2]	–	–	–	–	2 [<1]	12 [<1]	**54 [3]**
State	4	–	–	–	–	t[5]	<1	**5**
Private	5 [<1]	–	–	–	2	<1 [t[5]]	4 [2]	**12 [2]**
Total [4/]	**49 [2]**	**–**	**–**	**–**	**2**	**2 [<1]**	**16 [2]**	**71 [5]**
Alternative 5 WWE Corridor Variation								
BLM	61 [12]	–	–	–	–	1 [t[5]]	6 [<1]	**68 [13]**
State	4	–	–	–	–	–	<1	**4**
Private	10 [3]	–	–	–	–	<1	3 [<1]	**14 [3]**
Total [4/]	**74 [15]**	**–**	**–**	**–**	**–**	**1 [t[5]]**	**9 [<1]**	**86 [16]**

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/ "t" indicates only a trace amount (<0.1 acre) of impact.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Construction

The Alternative 5 WWE Corridor Variation would impact approximately 1,112 total acres of vegetation, slightly less (21 acres less) than the comparison portion of Alternative 5 (Table 3.6-15). The WWE Corridor Variation would impact slightly more shrubland (4 acres more) than the comparison portion of Alternative 5, but would impact less wetland and riparian, as well as other cover types (2 acres and 23 acres less, respectively).

During construction along the Alternative 5 WWE Corridor Variation, approximately 184 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 the Alternative 5 WWE Corridor Variation include 127 acres of impacts to shrubland, less than 1 acre to grassland, and 11 acres to other cover types, for a total of 138 acres of vegetation impacted (Table 3.6-15). Impacts to vegetation within the SRBOP would be greater for the Alternative 5 WWE Corridor Variation than the comparison portion of Alternative 5 (16 total acres of impacts within the SRBOP).

Operations

Operations of the WWE Corridor Variation would result in approximately 86 acres of permanent impacts to vegetation (Table 3.6-16). The WWE Corridor Variation would have fewer permanent impacts (15 acres less) than the comparison portion of Alternative 5. Operations impacts from the WWE Corridor Variation would primarily affect shrubland (Table 3.6-16).

Approximately 16 acres of vegetation within the SRBOP would be permanently impacted (regardless of land-ownership/management) during operations along the WWE Corridor Variation. Permanent impacts to vegetation on BLM-managed land within the SRBOP along the WWE Corridor Variation include 12 acres of impacts to shrubland and less than 1 acre to grassland and other cover types, for a total of 13 acres of vegetation permanently impacted (Table 3.6-16).

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 3.6-17 and 3.6-18 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 in Appendix A.

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 3.6-17. 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]***

Table 3.6-17. 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/]	
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]***
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 3.6-18. 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]***

Table 3.6-18. 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/]	
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]***
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 3.6-17 and 3.6-18 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 3.6-17 and 3.6-18, 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 3.6-17 and 3.16-18). 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 3.6-17). 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 3.6-17 and 3.6-18, 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 3.6-17). 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 3.6-18). 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 3.6-17 and 3.6-18, 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 3.6-17). 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 3.6-18). 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).

As discussed in Section 3.6.2.3, inclusion of the Alternative 5 Helicopter-Assisted Construction Variation or the Alternative 5 WWE Corridor Variation would alter the extent of impacts that could occur. In general, inclusion of these variations into Alternative 5 would result in a slight reduction in the total extent of direct impacts to vegetation (Table 3.6-15).

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 3.6-17 and 3.6-18, 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 3.6-17). 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 3.6-17 and 3.6-18, 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-

17 and 3.6-18). 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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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.

WEED-5 Where feasible, construction will begin in weed-free areas before operating in weed-infested areas. The feasibility of this measure will be determined after survey data is completed to identify weed-free and weed-infested areas.

WEED-6 All movement of construction vehicles outside of the ROW will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads, including overland access routes, will be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed their activities must be confined within the marked or flagged areas.

WEED-7 Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative.

WEED-8 When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations.

WEED-9 Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment.

WEED-10 Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D –

Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds.[1]

WEED-11 Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.

WEED-12 Implement preventive measures, such as quarantine and closure, to reduce and contain existing noxious weed populations. Flagging will alert personnel and prevent access into areas where noxious weeds occur. Construction disturbance will be minimized in these areas until control measures have been implemented (with the exception of reclamation treatments, as applicable).

WEED-13 If discing or tilling is an appropriate and feasible weed treatment method, it will only be permitted in bladed areas.

WEED14 Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives.

WEED-15 Additional weed and/or erosion control measures recommended during monitoring will follow the preventive and control measures outlined in the Noxious Weed Plan. Continued cooperation with the current BLM, BOR, or USFS noxious weed coordinator and local weed management areas is also encouraged.

WEED-16 A certified pesticide applicator, approved in the states of Wyoming or Idaho, will perform the application using pesticides selected and approved by BLM or USFS in accordance with applicable laws, regulations, and permit stipulations. All pesticide applications must follow U.S. Environmental Protection Agency label instructions. Application of pesticides will be suspended in accordance with the Proponents' vegetation management specifications (e.g., strong winds, etc.).

WEED-17 Pesticides will be transported to the Project site daily with the following provisions:

- Only the quantity needed for that day's work will be transported.
- Concentrate will be transported only in approved containers in a manner that will prevent tipping or spilling, and in a location isolated from the vehicle's driving compartment, food, clothing, and safety equipment.

[1] The appendices referred to in the text of this EPM are from the ROD, not this SEIS.

- Mixing will be done offsite, over a drip catching device and at the following distances from open or flowing water, wetlands, or other sensitive resources: 100 feet for practically non-toxic to slightly toxic pesticides; 250 feet for moderately toxic or label advisory for ground/surface water; and 250 feet for highly toxic to very highly toxic pesticides. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies.
- All pesticide equipment and containers will be inspected for leaks daily.
- Disposal of spent containers will be in accordance with the pesticide label.

WEED-18 Pesticide contractors will be state-certified to apply pesticides and will obtain, and have readily available, copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.

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-3 In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.

VEG-4 Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagules. All vehicles and equipment will 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 Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations will not become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans.

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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

VEG-6 The Proponents will consult with the appropriate land management agency to determine tree seedlings to be planted in decommissioned roadbeds and other temporarily disturbed areas on federally managed lands (where trees were removed) to assure seedlings are matched to site conditions. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

VEG-8 Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Proponents only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years, post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Proponents will not be required to treat noxious weeds for more than 3 years.

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.

Some of these EPMs are tied directly to the BLM's authority on federally managed lands (e.g., WEED-4). In these cases, the BLM would not have the authority to require EPMs on private or state lands (see Appendix M for a list of the land-ownerships/management-areas where each EPM would be applicable). Similar measures may be required on state and private lands as part of the state's permitting process. However, if the state does not require similar measures on state or private lands, the benefits of these EPMs would not occur on these lands, and additional impacts to vegetative communities could occur.

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 Proponents' 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 Appendix M) 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features discussed above, some Project-related impacts would likely remain. No additional compensatory mitigation is needed outside the SRBOP. 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.

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 Appendix M), 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 the framework plans in the POD, 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 that 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 2009a) 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, and
- impacts to the values that the SRBOP was established to manage and protect, which include 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 2014a)

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

Slickspot peppergrass (*Lepidium papilliferum*), which is known to occur in the Analysis Area, has been reinstated by the USFWS as a threatened species. No other threatened, endangered, or candidate species are known to exist in close proximity (within 5 miles) to 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). On August 17, 2016, the USFWS reinstated the status of slickspot peppergrass as threatened under the ESA, effective September 16, 2016 (81 *Federal Register* 55058–55084).

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; however, areas designated as potential habitat for slickspot peppergrass near Indian Bath are likely not actually potential habitat for slickspot peppergrass based on information provided by the USFWS (Schmidt 2016).

Thus, estimates of impacts to potential habitat for Routes 8G and 9K are likely overestimated. The Revised Proposed Route and FEIS Proposed 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 Segment 8 and 9 Revised Proposed Routes, Other Routes, and Route Variations

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[5/]	–
Route 8H [6/]	–	–	–	0.4	–
Revised Proposed Route Segment 9 [6/]	–	–	–	0.4	–
FEIS Proposed Route Segment 9	–	–	–	0.4	–
Route 9K	–	–	–	0.8[5/]	–

1/ The Toana Road Variation, the comparison portion of Segment 9 for the Toana Road Variations, the Helicopter-Assisted Construction Variation, the WWE Corridor Variation, and the comparison portion of Alternative 5 would not impact known occurrences or cross slickspot peppergrass habitat and are therefore not listed in this table.

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/ Areas designated as “Potential Habitat” for slickspot peppergrass near Indian Bath are likely not actually “Potential Habitat” for slickspot peppergrass based on information provided by the USFWS (Schmidt 2016) and estimates of impacts to this habitat for Routes 8G and 9K are likely overestimated.

6/ The 138-kV and 500-kV line removal along routes 8G, 8H and the Revised Proposed Route for Segment 9 would not impact known occurrences or 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

The term “other special status plant species” will be used in this document to refer to special status plant species that are not regulated under the ESA. 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

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
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
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 Appendix M. 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 Appendix M 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 currently listed under the ESA 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 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

Table 3.7-3. Impacts to Slickspot Peppergrass from the Segment 8 and 9 Revised Proposed Routes, Other Routes, and Route Variations (continued)

Segment Number	Route or Variation	Effect Determination
8/9	Alternative 5 – Comparison portion for Helicopter-Assisted Construction Variation and WWE Corridor Variation	No effect
	Alternative 5 – Helicopter-Assisted Construction Variation	No effect
	Alternative 5 – WWE Corridor Variation	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 and Variation

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 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[6/]	1[6/]	–	–
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.

6/ Areas designated as "Potential Habitat" for slickspot peppergrass near Indian Bath are likely not actually "Potential Habitat" for slickspot peppergrass based on information provided by the USFWS (Schmidt 2016), and estimates of impacts to this habitat for Routes 8G and 9K are likely overestimated.

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 2010a). 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 have conferenced with the USFWS under Section 7 of the

ESA prior to the species' listing on August 17, 2016, and will continue to work with the USFWS. 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.

Other Special Status Plant Species

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 the 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 Species

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). However, areas designated as potential habitat for slickspot peppergrass near Indian Bath are likely not actually potential habitat based on information provided by the USFWS (Schmidt 2016); therefore, estimates of impacts to potential habitat for Route 8G are likely overestimated. 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

	Acres 1/											
	Alkali Cleomella		Bruneau River Prickly Phlox		Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch	
Route 2/	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

	Acres 1/									
	Packard's Buckwheat		Snake River Milkvetch		Spine-noded Milkvetch		White Eatonella		White-margined Wax Plant	
Route	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.

ESA Species

Route 8H would cross 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 Species

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[5/]	<1[5/]	–	–

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.

5/ Areas designated as "Potential Habitat" for slickspot peppergrass near Indian Bath are likely not actually "Potential Habitat" for slickspot peppergrass based on information provided by the USFWS (Schmidt 2016), and estimates of impacts to this habitat for Routes 8G and 9K are likely overestimated.

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.

Table 3.7-9. Potential Impacts to Other Special Status Plant Species along Segment 9 Revised Proposed Route[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.

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).

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.

<u>ESA Species</u>

FEIS Proposed 9 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

	Acres 1/							
	Desert Pincushion		Janish's Penstemon		Matted Cowpie Buckwheat		Mulford's Milkvetch	
Route	Const	Op2/	Const	Op2/	Const	Op2/	Const	Op2/
FEIS Proposed Route 9	<1 [<1]	<1 [<1]	175	22	4 [3]	1 [1]	53	3

	Acres 1/							
	Rigid Threadbush		Snake River Milkvetch		White Eatonella		White-margined Wax Plant	
Route	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 Species

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). However, areas designated as potential habitat for slickspot peppergrass near Indian Bath are likely not actually potential habitat based on information provided by the USFWS (Schmidt 2016); therefore, estimates of impacts to potential habitat for Route 9K are likely overestimated. 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 FEIS Proposed 9 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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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 nor 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The Helicopter-Assisted Construction Variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of Route 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

Helicopter-assisted construction is intended to reduce long-term disturbance. This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction. This variation would utilize low-impact vehicles and ground equipment to support the construction of foundations and tower erection. Helicopter-assisted construction may result in a minimization of vegetation impacts during construction because the disturbance would generally be completed with low-impact construction vehicles utilizing overland access. The main difference between this variation and the proposed construction methods for Alternative 5 is that there would be no permanent roads built under this variation and all temporary roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent roads along this variation). Disturbances related to the use of ground based construction equipment in the area and the initial disturbance to vegetation during construction (as described above for the proposed construction methods) would still occur under this variation.

It is possible that operational long-term impacts to TES plant species under this variation could be reduced compared to the proposed methods if the temporary roads are successfully restored following construction. However, it is also possible that operation of the Project under this variation could have an increased potential for impacts to vegetation if new roads need to be constructed at a later time (after construction is completed) in order to support necessary repairs to the Project during operation.

ESA Species

There are no ESA-listed or candidate species within the Analysis Area for the Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5.

Other Special Status Plant Species

There are 6 other special status plant species that would be impacted by construction and operations along the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 (Table 3.7-12). The greatest impacts from both the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 would be to white-margined wax plant and Mulford's milkvetch. Construction of the comparison portion of Alternative 5 would result in slightly greater impacts to Mulford's milkvetch, Snake River milkvetch, and white-margined wax plant than the Helicopter-Assisted Construction Variation, whereas impacts to desert pincushion would be slightly greater under the Helicopter-Assisted Construction Variation (Table 3.7-12). Construction impacts to Janish's penstemon and white eatonella would be the same under the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5. Permanent impacts from operation would be slightly greater to desert pincushion, Snake River milkvetch, white eatonella, and white-margined wax plant under the comparison portion of Alternative 5 than the Helicopter-Assisted Construction Variation. Operational impacts to Janish's penstemon and Mulford's milkvetch would be the same under the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5.

Table 3.7-12. Potential Impacts to Other Special Status Plant Species along the Helicopter-Assisted Construction Variation

Variation	Acres 1/							
	Desert Pincushion		Janish's Penstemon		Mulford's Milkvetch		Snake River Milkvetch	
	Const	Op 2/	Const	Op 2/	Const	Op 2/	Const	Op 2/
Comparison portion for Alternative 5 Helicopter-Assisted Construction Variation	12	1	t 3/	t 3/	96	8	68 [5]	8 [2]
Helicopter-Assisted Construction Variation	25	<1	t 3/	t 3/	94	8	67 [5]	6 [2]

Variation	Acres 1/			
	White Eatonella		White-margined Wax Plant	
	Const	Op 2/	Const	Op 2/
Comparison portion for Alternative 5 Helicopter-Assisted Construction Variation	2	<1	123	12
Helicopter-Assisted Construction Variation	2	t 3/	118	9

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/ Value is less than 0.1 acre.

Impacts to one other special status plant species, Snake River milkvetch, would occur on BLM-managed land within the SRBOP during construction and operation of the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5

(Table 3.7-12). The SRBOP's 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 Helicopter-Assisted Variation and the comparison portion of Alternative 5 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. 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 the Helicopter-Assisted Construction Variation would ensure that special status plants would be identified and impacts avoided and minimized during construction and operations.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

<u>ESA Species</u>

There are no ESA-listed or candidate species within the Analysis Area for the WWE Corridor Variation or the comparison portion of Alternative 5.

<u>Other Special Status Plant Species</u>

There are 7 other special status plant species that would be impacted by construction and operations along the WWE Corridor Variation (Table 3.7-13). The greatest impacts would be to Mulford's milkvetch, Snake River milkvetch, and white-margined wax plant. Construction of the WWE Corridor Variation would result in greater impacts to Mulford's milkvetch, rigid threadbush, Snake River milkvetch, and white eatonella than the comparison portion of Alternative 5, whereas impacts to desert pincushion and white-margined wax plant would be greater under the comparison portion of Alternative 5 (Table 3.7-13). Construction impacts to Janish's penstemon would be the same under the WWE Corridor Variation and the comparison portion of Alternative 5. Permanent impacts from operation would be slightly greater to rigid threadbush and Snake River milkvetch under the WWE Corridor Variation than the comparison portion of Alternative 5, whereas operations impacts to desert pincushion and white-margined wax plant would be slightly greater under the comparison portion of Alternative 5 than the WWE Corridor Variation. Operations impacts to Janish's penstemon, Mulford's milkvetch, and white eatonella would be the same under the WWE Corridor Variation and the comparison portion of Alternative 5.

Impacts to five special status plant species (desert pincushion, rigid threadbush, Snake River milkvetch, white eatonella, and white-margined wax plant) would occur on BLM-

managed land within the SRBOP during construction of the WWE Corridor Variation (Table 3.7-13). 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 WWE Corridor Variation to be in conformance with the RMP (see Chapter 2, Section 2.3.5).

Table 3.7-13. Potential Impacts to Other Special Status Plant Species along the WWE Corridor Variation

Variation	Acres 1/							
	Desert Pincushion		Janish's Penstemon		Mulford's Milkvetch		Rigid Threadbush	
	Const	Op2/	Const	Op2/	Const	Op2/	Const	Op2/
Comparison portion for Alternative 5 WWE Corridor Variation	12	1	t3/	t3/	96	8	–	–
WWE Corridor Variation	<1 [<1]	<1 [<1]	t3/	t3/	117	8	2 [1]	<1 [t3/]

Variation	Acres 1/					
	Snake River Milkvetch		White Eatonella		White-margined Wax Plant	
	Const	Op2/	Const	Op2/	Const	Op2/
Comparison portion for Alternative 5 WWE Corridor Variation	68	8 [2]	2	<1	123	12
WWE Corridor Variation	148 [38]	13 [5]	5 [2]	<1 [<1]	97 [5]	11 [<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.
3/ Value is less than 0.1 acre.

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 habitats (BLM 2008a, p. 2-7). Additionally, pre-construction clearance surveys along the WWE Corridor Variation would ensure that special status plants would be identified and impacts avoided and minimized during construction and operations.

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 3.7-14 and Table 3.7-15 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 3.7-14. 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][4/]	40 [3][4/]	17 [10]	4 [2]
4	–	–	–	–	–	–	11 [2][4/]	1 [<1][4/]	–	–
5	–	–	–	–	–	–	17[4/]	1[4/]	–	–
6	–	–	–	–	–	–	9 [9]	<1 [<1]	–	–
7	–	–	–	–	–	–	15 [7] [4/]	1 [<1] [4/]	–	–

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).

4/ Areas designated as "Potential Habitat" for slickspot peppergrass near Indian Bath are likely not actually "Potential Habitat" for slickspot peppergrass based on information provided by the USFWS (Schmidt 2016) and estimates of impacts to this habitat for Routes 8G and 9K are likely overestimated.

Table 3.7-15. 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]
Mourning milkvetch	Const	6	6	6	–	–	–	–
	Op[2/]	1	1	1	–	–	–	–

Table 3.7-15. 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
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. However, areas designated as potential habitat for slickspot peppergrass near Indian Bath are likely not potential habitat based on information provided by the USFWS (Schmidt 2016); therefore, estimates of impacts to potential habitat for Route 9K are likely overestimated. 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 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).

There would be no impacts to known occurrence, occupied habitat, slickspot peppergrass habitat, potential habitat, or critical habitat for slickspot peppergrass during construction or operation under the Helicopter-Assisted Construction Variation, WWE Corridor Variation, or the comparison portion of Alternative 5. The Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 would impact known occurrences of six other special status plant species during construction and operation; whereas the WWE Corridor Variation would impact known occurrences of seven other special status plant species. Total impacts to other special status plant species during construction of the WWE Corridor Variation would be greater (369 acres of total impacts) than under the Helicopter-Assisted Construction Variation (306 acres of total impacts) or the comparison portion of Alternative 5 (301 acres of total impacts). During operations, the WWE Corridor Variation would also result in greater total impacts (32 acres of impacts) to other special status plant species than the Helicopter-Assisted Construction variation (23 acres of impacts) and the comparison portion of Alternative 5 (30 acres of impacts).

The WWE Corridor Variation would also result in greater impacts to other special status plant species on BLM-managed land within the SRBOP during construction and operation than either the Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, are directly related to TES plants and would be applicable to Segments 8 and 9[1]:

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

[1] TESPL-1 and TESPL-2 do not apply to this SEIS, as these EPMs address species that are not found along Segments 8 and 9.

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. The Proponents' 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 Appendix M) 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

No additional compensatory mitigation is needed outside the SRBOP. However, as discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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.

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

In addition to the design features and EPMs meant to avoid and minimize impacts to TES plants (as described above and as listed in Appendix M), 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 the framework plans in the POD, 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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. No additional compensatory mitigation is needed outside the SRBOP:

- what impacts would occur to the values that 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 Appendix M of this FSEIS. 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 and Variation

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.

<u>Impacts on the SRBOP</u>
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).

Variations

Toana Road Variations 1 and 1-A and the Comparison Portion of the Segment 9 Revised Proposed Route 9

Toana Road Variation 1 to the Segment 9 Revised Proposed Route, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

Helicopter-assisted construction is intended to reduce ground long-term disturbance. This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction. This variation would utilize low-impact vehicles and ground equipment to support the construction of foundations and tower erection. Helicopter-assisted construction may result in a minimization of vegetation impacts during construction because the disturbance would generally be completed with low-impact construction vehicles utilizing overland access. The main difference between this variation and the proposed construction methods for Alternative 5 is that there would be no permanent roads built under this variation and all temporary roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent roads along this variation). Disturbances related to the use of ground based construction equipment in the area and the initial disturbance to vegetation during construction (as described above for the proposed construction methods) would still occur under this variation.

Approximately 17 percent of the total length of both the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 cross previously disturbed, developed, or agricultural lands (Appendix D, Table D.6-1). Construction of the Helicopter-Assisted Construction Variation would result in about 1,029 acres of total

ground disturbance, of which 783 acres (76 percent) would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2). The comparison portion of Alternative 5 would impact more total vegetation (1,133 acres of total ground disturbance) and more natural vegetation (882 acres; 78 percent) than the Helicopter-Assisted Construction Variation. Therefore, the comparison portion of Alternative 5 would likely have a slightly greater potential for the spread or introduction of invasive plant species than the Helicopter-Assisted Construction Variation.

Impacts on the SRBOP

Of the 1,029 acres of ground disturbance along the Alternative 5 Helicopter-Assisted Construction Variation, 10 acres would occur on BLM-managed lands within the SRBOP. Approximately 6 acres of this disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Approximately 23 percent of the total length of the WWE Corridor Variation crosses previously disturbed, developed, or agricultural lands, while 17 percent of the comparison portion of Alternative 5 crosses previously disturbed, developed, or agricultural lands (Appendix D, Table D.6-1). Construction of the WWE Corridor Variation would result in about 1,112 acres of total ground disturbance, of which 879 acres (79 percent) would correspond to disturbances to previously undisturbed areas (Appendix D, Table D.6-2). The comparison portion of Alternative 5 would impact more total vegetation (1,133 acres of total ground disturbance) and slightly more previously undisturbed vegetation (882 acres) than the WWE Corridor Variation. Therefore, the comparison portion of Alternative 5 would likely result in a slightly greater potential for the spread or introduction of invasive plant species.

Impacts on the SRBOP

Of the 1,112 acres of ground disturbance along the WWE Corridor Variation, 138 acres would occur on BLM-managed lands within the SRBOP. Approximately 118 acres (86 percent) of the disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas (Table D.6-2).

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.

The Alternative 5 Helicopter-Assisted Construction Variation would result in less total ground disturbance (1,029 acres of total ground disturbance) than the comparison portion of Alternative 5 (1,133 acres of total ground disturbance). Additionally, as shown in Appendix D, Table D.6-2, the Helicopter-Assisted Construction Variation would result in fewer impacts (99 acres less) to previously undisturbed areas than the comparison portion of Alternative 5. The WWE Corridor Variation would also result in less total ground disturbance (1,112 acres of total ground disturbance) and slightly less impacts (3 acres less) to previously undisturbed areas than the comparison portion of Alternative 5.

Construction of either the Alternative 5 Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5 would result in approximately 10 acres of ground disturbance on BLM-managed lands within the SRBOP, whereas the WWE Corridor Variation would result in approximately 138 acres of ground disturbance on BLM-managed lands within the SRBOP. Under the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5, about 6 acres of this ground disturbance would occur to previously undisturbed land on BLM-managed lands within the SRBOP. Under the WWE Corridor Variation, 118 acres of the total 138 acres of ground disturbance on BLM-managed lands within the SRBOP would occur to previously undisturbed areas.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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.

WEED-5 Where feasible, construction will begin in weed-free areas before operating in weed-infested areas. The feasibility of this measure will be determined after survey data is completed to identify weed-free and weed-infested areas.

WEED-6 All movement of construction vehicles outside of the ROW will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads, including overland access routes, will be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed their activities must be confined within the marked or flagged areas.

WEED-7 Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative.

WEED-8 When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations.

WEED-9 Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment.

WEED-10 Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D – Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds.[2]

[2] The appendices referred to in the text of this EPM are from the ROD, not this SEIS.

WEED-11 Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.

WEED-12 Implement preventive measures, such as quarantine and closure, to reduce and contain existing noxious weed populations. Flagging will alert personnel and prevent access into areas where noxious weeds occur. Construction disturbance will be minimized in these areas until control measures have been implemented (with the exception of reclamation treatments, as applicable).

WEED-13 If discing or tilling is an appropriate and feasible weed treatment method, it will only be permitted in bladed areas.

WEED-14 Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives.

WEED-15 Additional weed and/or erosion control measures recommended during monitoring will follow the preventive and control measures outlined in the Noxious Weed Plan. Continued cooperation with the current BLM, BOR, or USFS noxious weed coordinator and local weed management areas is also encouraged.

WEED-16 A certified pesticide applicator, approved in the states of Wyoming or Idaho, will perform the application using pesticides selected and approved by BLM or USFS in accordance with applicable laws, regulations, and permit stipulations. All pesticide applications must follow U.S. Environmental Protection Agency label instructions. Application of pesticides will be suspended in accordance with the Proponents vegetation management specifications (e.g., strong winds, etc.).

WEED-17 Pesticides will be transported to the Project site daily with the following provisions:

- Only the quantity needed for that day's work will be transported.
- Concentrate will be transported only in approved containers in a manner that will prevent tipping or spilling, and in a location isolated from the vehicle's driving compartment, food, clothing, and safety equipment.
- Mixing will be done offsite, over a drip catching device and at the following distances from open or flowing water, wetlands, or other sensitive resources: 100 feet for practically non-toxic to slightly toxic pesticides; 250 feet for moderately toxic or label advisory for ground/surface water; and 250 feet for highly toxic to very highly toxic

pesticides. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies.
- All pesticide equipment and containers will be inspected for leaks daily.
- Disposal of spent containers will be in accordance with the pesticide label.

WEED-18 Pesticide contractors will be state-certified to apply pesticides and will obtain, and have readily available, copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.

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.

Some of these EPMs are tied directly to the BLM's authority on federally managed lands (e.g., WEED-4). In these cases, the BLM would not have the authority to require EPMs on private or state lands (see Appendix M for a list of the land-ownerships/management-areas where each EPM would be applicable). Similar measures may be required on state and private lands as part of the state's permitting process. However, if the state does not require similar measures on state or private lands, the benefits of these EPMs would not occur on these lands, and additional impacts could occur.

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. The Proponents' 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; 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 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

No additional compensatory mitigation is needed outside the SRBOP. However, as discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features discussed above, some Project-related impacts would likely remain within the SRBOP. 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.

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

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 the framework plans in the POD, 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.

The BLM recognizes that many areas have weed seeds in the soil and that creating fuel breaks disturbs the soil, which may lead to these weed seeds germinating. The BLM would sow seeds in the fuel breaks to establish desired vegetation and use herbicide and other standard practices to treat undesirable vegetation. Fuel breaks are discussed in more detail in Appendix K. Appendix K also contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 that 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 2009a) 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 Appendix M of this FSEIS. 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 would not have changed as they relate to the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), the Toana Road Variations, as well as the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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 as they would apply to the Revised Proposed Routes, the other routes (8G, 8H, 9K, and FEIS Proposed 9), the Toana Road Variations, or the Helicopter-Assisted Construction and WWE Corridor Variations for Alternative 5 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 and Variation

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.

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.

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		Riparian Areas	
	Due to Const. Facilities[2/]	Due to ROW Clearing in Forests[3/]	Due to Const. Facilities[2/]	Due to ROW Clearing in Forests[3/]	Due to Operation Facilities	Due to ROW Maintenance in Forests[4/]	Due to Operation Facilities	Due to ROW Maintenance in Forests[4/]
Segment 8 Revised Proposed	3.2	–	2.8	1.6	0.4	–	0.2	1.6
Existing 500-kV Removal	–	–	–	–	–	–	–	–
Route 8G	0.6 [0.3]	–	0.9	1.0	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]	t	0.3 [0.2]	–	0.7 [t]	t
Route 9K	0.7 [0.3]	–	1.4	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	–	–	–	–	–	–	–	–
Alternative 5 Comparison portion for the Helicopter-Assisted Construction and WWE Corridor Variations	–	–	0.2	2.4	–	–	–	2.4
Alternative 5 Helicopter-Assisted Construction Variation	–	–	0.2	2.4	–	–	–	2.4
Alternative 5 WWE Corridor Variation	–	–	0.3	–	–	–	–	–

1/ Numbers reported in brackets are on BLM-managed land within the SRBOP.
"t" indicates only a trace amount (<0.1 acre).
2/ Construction facilities = clearing for facilities such as infrastructure, roads, temporary multipurpose yards, and fly yards. Note that this does not include ROW clearing.
3/ ROW = right-of-way clearing during construction. ROW values for wetlands and riparian areas include only forested areas.
4/ ROW = right-of-way maintenance during operations. ROW values for wetlands and riparian areas include only forested areas. Note that the values for ROW clearing during construction and maintenance during operations are not cumulative (i.e., ROW clearing affects the same areas during construction and operation).

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.

Variations

Toana Road Variations 1 and 1-A and the Comparison Portion for the Segment 9 Revised Proposed Route

Toana Road Variation 1 to the Segment 9 Revised Proposed Route. as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The Helicopter-Assisted Construction Variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of Route 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

Helicopter-assisted construction is intended to reduce long-term ground disturbance. This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction. This variation would utilize low-impact vehicles and ground equipment to support the construction of foundations and tower erection. The main difference between this variation and the proposed construction methods for Alternative 5 is that there would be no permanent roads built under this variation and all temporary roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no

permanent roads along this variation). Disturbances related to the use of ground-based construction equipment in the area and the initial disturbance to wetlands and riparian areas during construction (as described above for the proposed construction methods) would still occur under this variation.

Construction

There are no anticipated impacts to wetlands from the Helicopter-Assisted Construction Variation or the equivalent portion of Alternative 5. Construction of either the Helicopter-Assisted Construction Variation or the equivalent portion of Alternative 5 would affect about 2.4 acres of forested riparian areas for ROW clearing, and an additional 0.2 acre of shrub riparian areas impacted from construction of the Project facilities, for a total of 2.6 acres of construction impacts to riparian areas. This disturbance would result in vegetation removal and soil disturbance, as well as potential bedrock fracturing and water withdrawal.

For either the Helicopter-Assisted Construction Variation or the equivalent portion of Alternative 5, approximately 2.5 of the 2.6 total acres of riparian impacts from construction and ROW clearing would be on private land and 0.1 acre would be on BLM-managed land. There would be no impacts to wetland or riparian areas on BLM-managed land within the SRBOP under either the Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5.

Operations

There would be no impacts to wetlands from operation of either the Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5. Approximately 2.4 acres of forested riparian areas would be impacted by operations for ROW maintenance under either the Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5. All 2.4 acres of impacts to riparian areas from ROW maintenance would be on private land. There would be no impacts to wetlands or riparian areas on BLM-managed land within the SRBOP during operations of either the Helicopter-Assisted Construction Variation or the equivalent portion of Alternative 5.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Construction

There are no anticipated impacts to wetlands from the WWE Corridor Variation or the equivalent portion of Alternative 5. Approximately 0.3 acre of riparian areas would be disturbed during construction of the WWE Corridor Variation, which would result in vegetation removal and soil disturbance, as well as potential bedrock fracturing and water withdrawal. This is approximately 2.3 fewer acres of riparian impacts than the comparison portion of Alternative 5. All impacts to riparian areas from the WWE

Corridor Variation would be to shrub riparian areas and all impacts would be associated with construction facilities. There would be no impacts to forested riparian areas under the WWE Corridor Variation, while the comparison portion of Alternative 5 would impact approximately 2.4 acres of forested riparian areas during ROW clearing. Approximately half of the riparian impacts from construction under the WWE Corridor Variation would be on private land and the other half would be on BLM-managed land. There would be no impacts to wetland or riparian areas on BLM-managed land within the SRBOP under either the WWE Corridor Variation or the equivalent portion of Alternative 5.

Operations

There would be no impacts to wetlands or riparian areas from operation of the WWE Corridor Variation. There would also be no impacts to wetlands from the equivalent portion of Alternative 5; however, approximately 2.4 acres of forested riparian areas would be impacted by ROW maintenance under the comparison portion of Alternative 5, which would not be impacted by this variation. There would be no impacts to wetlands or riparian areas on BLM-managed land within the SRBOP during operations of either the WWE Corridor Variation or the comparison portion of Alternative 5.

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 wetlands than Alternative 1, but 0.5 acre more riparian area 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 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 of riparian areas (none of which would be within the SRBOP), which is 2.8 fewer acres of wetlands 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.

There would be no impacts to wetlands from construction or operation of the Helicopter-Assisted Construction Variation, the WWE Corridor Variation, or the comparison portion of Alternative 5. Construction of the Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 would result in similar impacts to riparian areas (2.4 acres of forested riparian areas impacted for ROW clearing and ROW maintenance, and 0.2 acre of shrub riparian impacted for construction facilities). The WWE Corridor Variation would result in 0.3 acre of impact to shrub riparian area for construction facilities. No riparian areas would be impacted during operation of the WWE Corridor Variation, while 2.4 acres would be impacted during operation of the Helicopter - Assisted Construction Variation and the comparison portion of Alternative 5.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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.

WET-5 Limit construction equipment operating in streams and wetlands to that needed to clear temporary access, erect towers, pull conductor, and perform ground-disturbing activities.

WET-6 Limit clearing of vegetation at the edges of a stream or wetland to the minimal area necessary for required conductor clearance and vehicle

passage. Reclaim at least 70 percent of potential ground cover within 100 feet from the edges of all perennial streams, lakes, and other water bodies, or to the outer margin of the riparian ecosystem where wider than 100 feet.

WET-7 Salvage and respread topsoil in areas subject to temporary disturbance where grading and excavation will occur.

WET-8 Prohibit the use of imported soil, tree stumps, riprap, or brush to stabilize the construction corridor within wetlands.

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. The Proponents' 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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 Compensatory Mitigation Framework 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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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; and
- 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 Appendix M of this FSEIS. 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 and Variation

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	–
Comparison portion for Alt. 5 WWE Corridor and Helicopter-Assisted Construction Variations	1	-	-	783 [9]	825 [5]	-
Alt. 5 WWE Corridor Variation	1	-	-	658 [103]	996 [140]	-
Alt. 5 Helicopter-Assisted Construction Variation	1	-	-	698 [9]	809 [5]	-

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).

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).

[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.

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).

<u>Operations</u>

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). 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.

<u>Impacts on the SRBOP</u>

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

[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.

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 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). 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].

[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.
[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.

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 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). 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

[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.

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 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). 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.

<u>Operations</u>

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). 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). 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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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). 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 more permanent 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction of the Project (see Chapter 2). The main difference between this variation and the proposed construction methods for Alternative 5 is that all Project roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent

Project related roads along this variation). As a result, the disturbances related to the use/presence of ground-based construction equipment in the area and the initial disturbance to habitats during construction (as described above for the proposed construction methods) would still occur to wildlife under this variation; however, wildlife would also be exposed to disturbances related to increased helicopter use under this variation. The Proponents have estimated that up to 1,600 helicopter flights would be required, for a period of 2 to 3 months, in order to construct the Project under this variation. It is possible that the increased use of helicopters under this variation could result in added disturbances to wildlife near the helicopter staging areas, at the construction sites, as well as along paths located between these areas. Therefore, because this alternative would still incorporate similar levels of initial (yet temporary) ground disturbance for roads, similar numbers of ground-based vehicles, but additional helicopters flights, this variation would likely have increased construction-related impacts to wildlife compared to the proposed construction methods.

It is possible that operational long-term impacts to wildlife under this variation could be reduced compared to the proposed methods if the temporary roads are successfully restored following construction. However, it is also possible that operation of the Project under this variation could have an increased potential for impacts to wildlife if new roads need to be constructed at a later time (after construction is completed) in order to support necessary repairs to the Project during operation.

In summary, this variation would likely have increased impacts to wildlife compared to the proposed construction methods. The quantitative impacts from this variation are discussed in the following subsections.

Construction

Big Game

Construction of the Alternative 5 Helicopter-Assisted Construction Variation would directly impact 1 acre of bighorn sheep habitat and about 698 acres of pronghorn winter range. The comparison portion of Alternative 5 would result in more impacts to pronghorn winter range compared to this variation, but the same acreage of bighorn sheep habitat (see Tables 3.10-1 and D.10-6). Although the exact flight paths that would be taken by helicopters during construction is unknown, it is possible that additional big game ranges could be indirectly impacted by the use of helicopter as they fly from local airports to the staging areas, and then on to the construction sites (likely intersecting multiple areas used by big game). As discussed in the FEIS, helicopter use would be restricted by the timing and seasonal restrictions outlined in the FEIS Appendix I to minimize these impacts.

Raptors

As shown in Table D.10-2, the centerline for the Alternative 5 Helicopter-Assisted Construction Variation would pass within 1 mile of 65 currently documented raptor nests. The majority of these nests are golden eagle nests (48 nests). The number of nests recorded within 1 mile of Alternative 5 Helicopter-Assisted Construction Variation is identical to the number found along the comparison portion of Alternative 5.

Table D.10-7 lists the acreage of direct impacts that would occur within 1 mile of known raptor nests. As shown in this table, the Alternative 5 Helicopter-Assisted Construction Variation would impact more habitats within 1 mile of raptor nests compared to the comparison portion of Alternative 5 for the following species: golden eagles, northern harriers, and red-tailed hawks. It would have fewer impacts for the following species: burrowing owl, ferruginous hawk, and prairie falcon.

Although the direct impacts to habitats between this variation and the comparison portion of Alternative 5 (e.g., ground clearing) are mixed, with impacts greater for some species and less for others, indirect impacts (e.g., general disturbance to avian species) from this variation would likely be higher. This variation would involve the increased use of helicopters during construction; although the exact flight paths that would be taken by helicopters during construction is unknown, it is likely that these helicopter flight paths would intersect with and potentially impact additional raptor nests and territories beyond those impacted by the comparison portion of Alternative 5. As discussed in the FEIS, helicopter use would be restricted by the timing and seasonal restrictions outlined in the FEIS Appendix I to minimize these impacts.

Fish

No perennial stream would be crossed by the Alternative 5 Helicopter-Assisted Construction Variation or by the comparison portion of Alternative 5. Both the variation and the comparison portion of Alternative 5 would impact less than 1 acre of riparian vegetation.

Operations

Habitat Fragmentation

Construction of the Project along the Alternative 5 Helicopter-Assisted Construction Variation would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation). The levels of fragmentation that would occur to various habitat types along the Alternative 5 Helicopter-Assisted Construction Variation are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands and agricultural areas 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). Grasslands and riparian area would also experience some fragmentation.

Big Game

The Project's operations footprint for the Alternative 5 Helicopter-Assisted Construction Variation would impact less than 1 acre of bighorn sheep habitat, and about 42 acres of pronghorn winter range (see Table D.10-8). The comparison portion of Alternative 5 would result in more operational impacts to pronghorn winter range compared to this variation, but the same acreage of bighorn sheep habitat (see Table D.10-8).

Raptors

The comparison portion of Alternative 5 would have more permanent impacts to habitats within 1 mile of raptor nests compared to the Alternative 5 Helicopter-Assisted Construction Variation for all of the raptor species listed in Table D.10-9 except for the

burrowing owl (which would have similar impacts under the comparison portion and the variation).

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 the Alternative 5 Helicopter-Assisted Construction Variation would occur outside of the SRBOP. Of the 698 total acres of pronghorn winter range that would be impacted along this variation, only 9 acres would be impacted on the SRBOP (see Tables 3.10-1 and D.10-6). No other big game ranges would be impacted along the portion of the Alternative 5 Helicopter-Assisted Construction Variation located on the SRBOP.

As shown in Table D.10-7, the Alternative 5 Helicopter-Assisted Construction Variation would directly impact 5 acres of habitats within 1 mile of burrowing owl nests. No other raptor nests (or areas within 1 mile of known nests) would be directly impacted on the SRBOP by this variation; however, as discussed above, the helicopter flight paths may intersect with additional raptor nests or habitats within 1 mile of nests, and could result in additional impacts to raptors on the SRBOP.

No perennial streams would be impacted on the SRBOP along Alternative 5 Helicopter-Assisted Construction Variation.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Construction

Big Game

The Alternative 5 WWE Corridor Variation would cross through 39.8 miles of pronghorn winter range (see Table D.10-1). Construction of the Project in these areas would result in 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), and about 658 acres of impact to pronghorn winter range. The comparison portion of Alternative 5 would result in more impacts to pronghorn winter range compared to this variation, but the same acreage of bighorn sheep habitat (see Tables 3.10-1 and D.10-6).

Raptors

As shown in Table D.10-2, the centerline for Alternative 5 WWE Corridor Variation would pass within 1 mile of 71 currently documented raptor nests. The majority of these

nests are golden eagle nests (49 nests). The number of nests recorded within 1 mile of Alternative 5 WWE Corridor Variation is greater than the number found along the comparison portion of Alternative 5.

Table D.10-7 lists the acreage of direct impacts that would occur within 1 mile of known raptor nests. As shown in this table, the Alternative 5 WWE Corridor Variation would impact more habitats within 1 mile of raptor nests compared to the comparison portion of Alternative 5 for the following species: burrowing owl, ferruginous hawk, prairie falcon, and red-tailed hawk. It would have fewer impacts for the following species: golden eagle and northern harrier.

Fish

No perennial stream would be crossed by the Alternative 5 WWE Corridor Variation or by the comparison portion of Alternative 5. Both the Alternative 5 WWE Corridor Variation and the comparison portion of Alternative 5 would impact less than 1 acre of riparian vegetation.

Operations

Habitat Fragmentation

Construction of the Project along the Alternative 5 WWE Corridor Variation would result in the fragmentation of habitats (see Section 3.10 of the FEIS for a detailed discussion of the effects of habitat fragmentation). The levels of fragmentation that would occur to various habitat types along the Alternative 5 WWE Corridor Variation are shown in Tables D.10-3 through D.10-5. As shown in these tables, shrublands and agricultural areas 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). Grasslands and riparian area would also experience some fragmentation.

Big Game

The Project's operations footprint for the Alternative 5 WWE Corridor Variation 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), and about 48 acres of pronghorn winter range (see Table D.10-8). The comparison portion of Alternative 5 would result in more operational impacts to pronghorn winter range compared to this variation, but the same acreage of bighorn sheep habitat (see Table D.10-8).

Raptors

The Alternative 5 WWE Corridor Variation would have more permanent impacts to habitats within 1 mile of raptor nests than the comparison portion of Alternative 5 for the following species: burrowing owl, ferruginous hawk, and prairie falcon. It would have fewer permanent impacts for the following species: bald eagle, golden eagle, and northern harrier (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.

Impacts on the SRBOP

Most of the impacts to big game ranges along the Alternative 5 WWE Corridor Variation would occur outside of the SRBOP. Of the 658 total acres of pronghorn winter range that would be impacted along this variation, 103 acres would be impacted on the SRBOP, which would be a substantial increase in impacts on the SRBOP over those from the comparison portion of Alternative 5 (see Tables 3.10-1 and D.10-6). No other big game ranges would be impacted along the portion of the Alternative 5 WWE Corridor Variation located on the SRBOP.

The Alternative 5 WWE Corridor Variation would result in a total of 140 acres of impacts to habitats within 1 mile of raptor nests on the SRBOP (Table 3.10-1). This consists of 89 acres of impacts near burrowing owl nests, 30 acres of impacts near ferruginous hawk nests, 17 acres of impacts near golden eagle nests, and 4 acres of impacts near prairie falcon nests on the SRBOP, which would be a substantial increase in impacts on the SRBOP over those from the comparison portion of Alternative 5 (Table D.10-7).

No perennial streams would be impacted on the SRBOP along the Alternative 5 WWE Corridor Variation.

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.

As discussed in Section 3.10.2.3, inclusion of the Alternative 5 Helicopter-Assisted Construction Variation or the Alternative 5 WWE Corridor Variation would alter the

extent of impacts that could occur. In general, inclusion of the Alternative 5 Helicopter-Assisted Construction Variation would increase the extent of construction impacts (when considering the increased indirect impacts that would occur as a result of increased helicopter use in the area), and may increase the extent of operational impacts if it is determined that new roads need to be constructed during operation in order to facilitate Project repairs at a later time. Inclusion of the Alternative 5 WWE Corridor Variation would decrease impacts to big game habitats but would increase impacts to raptors in general (see Table 3.10-1). Neither variation would have a substantial differential effect on fish compared to the unaltered Alternative 5.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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 Vehicular speeds during construction and operations will be limited to 25 mph on all unsurfaced access roads. Crew and vehicle travel will be restricted to designated routes while on state 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. *[Note: Although this EMP specifically mentions federal lands, the*

Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]

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-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.

Some of these EPMs are tied directly to the BLM's authority on federally managed lands (e.g., WILD-12). In these cases, the BLM would not have the authority to require EPMs on private or state lands (see Appendix M for a list of the land ownerships/management areas where each EPM would be applicable). Similar measures may be required on state and private lands as part of the state's permitting process. However, if the state does not require similar measures on state or private lands, the benefits of these EPMs would not occur on these lands, and additional impacts to wildlife could occur.

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. The Proponents' 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

Additional mitigation beyond what is described above will be required. As discussed above, the MEP does not contain sufficient information to determine if implementation of the Proponents' plan would successfully mitigate Project impacts in the SRBOP. Therefore, the BLM has worked with the Proponents to develop a framework for compensatory mitigation within the SRBOP that replaces the MEP (refer to Appendix K to this document). Outside the SRBOP, mitigation beyond the currently required EPMs, existing plans (e.g., migratory bird mitigation plan and sage-grouse mitigation plan), and design features is not necessary.

This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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.

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

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 the framework plans in the POD, as well as the existing Project-wide compensatory mitigation plans (which are described in detail below). The BLM will then design mitigation options that address applicable remaining impacts within the SRBOP (see Section 3.0 for a discussion of the BLM's policy regarding mitigation as well as Appendix K, which contains the BLM's Compensatory Mitigation Framework). These mitigation options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, and that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Much of the BLM's Compensatory Mitigation Framework focuses on restoration and rehabilitation of raptor and prey habitats within the SRBOP, which will in turn benefit most general wildlife species found within the SRBOP.

The design features and EPMs that would be required Project-wide to avoid and minimize impacts to wildlife and fish species (including areas outside of the SRBOP) are described above in Section 3.10.2.5. In addition to these EPMs and design features, two existing mitigation 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 implemented Project-wide and 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.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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).

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 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.

- The Columbia spotted frog (*Rana luteiventris*) was considered as a candidate species under the ESA during the FEIS. However, the USFWS removed this species from the candidate list as of October 2015 (80 *Federal Register* 60834).
- 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.

[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.

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 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).

In September 2015, the BLM approved amendments to the resource management plans in Idaho and other Western states specifically to address management for conservation of greater sage-grouse. The land use plan amendments designated greater sage-grouse habitat areas, i.e., primary, important, and general habitat management areas, changed management objectives including realty actions such as transmission rights-of-way, and established a standard of "net conservation gain" for designated primary and important habitat management areas. See *BLM Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region* (BLM 2015b) at Management Decision Lands and Realty 12 (MD LR 12). The BLM's ROD and Approved RMP amendments, however, specifically indicated that the land use plan amendments and the management directions for realty actions decision do not apply to several ongoing transmission proposals being analyzed by the BLM, including the Gateway West Project. In particular, this management decision states:

> *MD LR 12: PHMA (Idaho and Montana) and IHMA (Idaho), and GHMA (Montana only) are designated as avoidance areas for high voltage transmission line and large pipeline ROWs, except for Gateway West and Boardman to Hemingway Transmission Project. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this proposed plan, including the RDFs and avoidance criteria presented in MD SSS 29 and MD SSS 30 of this document. The BLM is currently processing an application for Gateway West and Boardman to Hemingway Transmission Projects and the NEPA review for this project is well underway. Conservation measures for GRSG* [greater sage-grouse] *are being analyzed through the*

project's NEPA review process, which should achieve a net conservation benefit (gain) for the GRSG.

Although the conservation management standard for greater sage-grouse of "net conservation gain" in PHMA and IHMA from the 2015 land use plan amendments does not apply to the Gateway West Project, the BLM would seek to apply mitigation, including compensatory mitigation, to achieve an overall "net conservation gain" in connection with the Project. These mitigation measures would follow the process set forth in the Greater Sage-Grouse Habitat Mitigation Plan.

Note that the FEIS also considered issues related to the Project's potential impacts to Forest Service sensitive species and Management Indicator Species; 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 Appendix M of this FSEIS. 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 and Variation

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 and Alternative 5 Helicopter-Assisted and WWE Corridor 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 potentially suitable yellow-billed cuckoo habitat (with 2 acres of construction and operations impacts, although the BLM has determined that the impacted area does not have the characteristics needed for breeding habitat; 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.

Surveys to determine habitat suitability would be required prior to construction, and the BLM would consult with the USFWS if suitable habitat for any species not covered by the BO, including the yellow-billed cuckoo, is identified (TESWL-2).

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).
- 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,

[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.

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 (in an area that contains a mix of riparian shrubs, farm lands, and trees), with no in-water work conducted and no new roads constructed, 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 (see Tables D.11-3 through D.11-8). Two areas that may contain habitat for the yellow-billed cuckoo would be crossed by Route 8G, of which approximately 0.5 acre of potentially suitable habitat may be impacted at each area by construction. However, the BLM has determined that neither of the impacted areas has the characteristics needed for breeding habitat. Surveys to determine suitability for yellow-billed cuckoo, and any other species not covered in the BO, would be required prior to construction in which the BLM would consult with the USFWS if suitable habitat is identified. Following final engineering and design, micrositing to avoid impacts to the species would be implemented, to the extent practicable, if suitable habitat is identified (TESWL-2 and TESWL-7).

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, and northern leopard frog 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

[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.

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-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. The impacts that the Project could have on listed aquatic invertebrates due to this 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 recovery areas (i.e., at RM 572.75), Route 8G would have greater impacts to ESA listed aquatic invertebrates than the Revised Proposed Route.

<u>Impacts on the SRBOP</u>
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.

Surveys to determine habitat suitability would be required prior to construction, and the BLM would consult with the USFWS if suitable habitat for any species not covered by the BO is identified (TESWL-2).

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 RMs 460.0 and 493.4, in areas that contains disturbed grassland, shrubland, and irrigated farmland riparian vegetation. Although these areas are 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 crossings at RM 460.0 and 493.4, even though these areas are 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 some recovery areas(i.e., at RM 572.75), 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.

Surveys to determine habitat suitability would be required prior to construction, and the BLM would consult with the USFWS if suitable habitat for any species not covered by the BO is identified (TESWL-2).

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

[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

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).

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.

Impacts on the SRBOP

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 that may be suitable would be disturbed during construction; however, the BLM has determined that the area does not have the characteristics needed for breeding habitat (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.

Surveys to determine habitat suitability would be required prior to construction, and the BLM would consult with the USFWS if suitable habitat for any species not covered by the BO, such as yellow-billed cuckoo, is identified (TESWL-2).

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, and sage-grouse 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. This route would cross the Bruneau River at approximately RM 13.0, in an area that contains disturbed grassland and greasewood riparian vegetation; however, this area is outside of any designated recovery areas.

Impacts on the SRBOP

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.

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 (see Tables D.11-3 through D.11-8). As discussed under Route 8G, two areas that may contain habitat for the yellow-billed cuckoo would be crossed by Route 9K, of which approximately 0.5 acre of potentially suitable habitat may be impacted at each area by construction. However, the BLM has determined that neither of the impacted areas has the characteristics needed for breeding habitat. Surveys to determine suitability for the yellow-billed cuckoo, and any other species not covered in the BO, would be required prior to construction in which the BLM would consult with the USFWS if suitable habitat is identified. Following final engineering and design, micrositing to avoid impacts to the species would be implemented, to the extent practicable, if suitable habitat is identified (TESWL-2 and TESWL-7).

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, and sage-grouse 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 0.6 mile of 1 sage-grouse leks that has 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.

Neither Route 9K nor the Revised Proposed Route for Segment 9 would cross the recovery areas designated for ESA listed aquatic invertebrate species, or areas known to contain these 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 or variation 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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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).

Neither of the two Route Variations nor the comparison portion of the Revised Proposed Route for Segment 9 would cross the recovery areas designated for ESA listed aquatic invertebrate species, or areas known to contain these species.

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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between milepost 141.0 and the Hemingway Substation and 32.9 miles of 8G between milepost 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction of the Project (see Chapter 2). The main difference between this variation and the proposed construction methods for

Alternative 5 is that all Project roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent Project-related roads along this variation). As a result, the disturbances related to the use/presence of ground-based construction equipment in the area and the initial disturbance to habitats during construction (as described above for the proposed construction methods) could still occur to TES species under this variation; however, TES species could also be exposed to disturbances related to increased helicopter use under this variation. The Proponents have estimated that up to 1,600 helicopter flights would be required, for a period of 2 to 3 months, in order to construct the Project under this variation. It is possible that the increased use of helicopters under this variation could result in added disturbances to TES species near the helicopter staging areas, at the construction sites, as well as along paths located between these areas (thereby intersecting additional areas occupied by TES species). Therefore, because this alternative would still incorporate similar levels of initial (yet temporary) ground disturbance for roads, similar numbers of ground-based vehicles, but additional helicopters flights, this variation would likely have increased construction-related impacts to TES species compared to the proposed construction methods.

It is possible that operational long-term impacts to TES species under this variation could be reduced compared to the proposed methods if the temporary roads are successfully restored following construction. However, it is also possible that operation of the Project under this variation could have an increased potential for impacts to TES species if new roads need to be constructed at a later time (after construction is completed) in order to support necessary repairs to the Project during operation.

In summary, this variation would likely have increased impacts to TES species compared to the proposed construction methods. The quantitative impacts from this variation are discussed in the following text.

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia spotted frog, northern goshawk, northern leopard frog, sage-grouse, pygmy rabbit, and yellow-billed cuckoo could occur along the Alternative 5 Helicopter-Assisted Construction Variation.

The Alternative 5 Helicopter-Assisted Construction Variation would cross 3.7 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 55 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 56.6 miles of burrowing owl habitat (with 846 acres of construction impacts and 46 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), less than 1 mile of northern leopard frog habitat (with 2 acres of construction impacts and less than 1 acre of operations impacts), 43.1 miles of sage-grouse habitat (with 617 acres of construction impacts and 36 acres of operations impacts), 47.9 miles of pygmy rabbit habitat (with 711 acres of construction impacts and 36 acres of operations impacts), and less than 1 mile of yellow-billed cuckoo habitat (with 2 acres of construction or operations impacts, although the BLM has determined that the impacted area does not have the characteristics needed for breeding habitat; see Tables D.11-3 through D.11-8). Although the northern goshawk's range overlaps

the Analysis Area for the Alternative 5 Helicopter-Assisted Construction Variation, 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; increased disturbance impacts as a result of increased use of helicopters during construction; 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 Alternative 5 Helicopter-Assisted Construction Variation, 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 the Alternative 5 Helicopter-Assisted Construction Variation would be IHMA (with 650 acres of construction impacts) and PGH (with 338 acres of construction impacts).

The centerline for the Alternative 5 Helicopter-Assisted Construction Variation would pass within 0.6 mile of 1 sage-grouse lek that has 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 37 leks when considering a distance of 11 miles (with 34 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for Alternative 5 Helicopter-Assisted Construction Variation (see Table D.11-10).

Neither the Alternative 5 Helicopter-Assisted Construction Variation nor the comparison portion of Alternative 5 would cross the recovery areas designated for ESA listed aquatic invertebrate species, or areas known to contain these species.

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, Alternative 5 Helicopter-Assisted Construction Variation would result in impacts on BLM-managed lands within the SRBOP to habitats for the burrowing owl (7 acres during construction), sage-grouse (8 acres during construction), and pygmy rabbit (3 acres during construction).

Approximately 9 acres of GHMA, 4 acres of Key and PPH sage-grouse habitats, 1 acre of IHMA, and less than 1 acre of PGH would be impacted on BLM-administered lands on the SRBOP by Alternative 5 Helicopter-Assisted Construction Variation during construction (see Table D.11-14).

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of

8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Of the TES species for which quantitative species-specific data/parameters are available, the bald eagle, burrowing owl, Columbia spotted frog, northern goshawk, northern leopard frog, sage-grouse, pygmy rabbit, and yellow-billed cuckoo could occur along the Alternative 5 WWE Corridor Variation.

The variation would cross 3.1 miles of habitat within 1 mile of bald eagle nests (Table D.11-4), and would result in 55 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 50.0 miles of burrowing owl habitat (with 912 acres of construction impacts and 67 acres of operations impacts), less than 1 mile of Columbia spotted frog habitat (with 4 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 less than 1 acre of operations impacts), 44.0 miles of sage-grouse habitat (with 774 acres of construction impacts and 54 acres of operations impacts), 32.6 miles of pygmy rabbit habitat (with 629 acres of construction impacts and 45 acres of operations impacts), and less than 1 mile of yellow-billed cuckoo habitat (with 2 acres of construction or operations impacts, although the BLM has determined that the impacted area does not have the characteristics needed for breeding habitat; see Tables D.11-3 through D.11-8). Although the northern goshawk's range overlaps the Analysis Area for the Alternative 5 WWE Corridor Variation, 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).

Table D.11-11 lists the miles of each agency designated sage-grouse habitat type that would be crossed by Alternative 5 WWE Corridor Variation, 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 the Alternative 5 WWE Corridor Variation would be IHMA (with 614 acres of construction impacts), PGH (with 285 acres of construction impacts), and GHMA (with 265 acres of construction impacts).

The centerline for the Alternative 5 WWE Corridor Variation would pass within 1 mile of 1 sage-grouse lek that has an undetermined management status. This value increases to 6 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 37 leks when considering a distance of 11 miles (with 34 of these leks located on federally managed lands; see Table D.11-9). No sharp-tailed grouse leks occur near the centerline for Alternative 5 WWE Corridor Variation (see Table D.11-10).

Neither the Alternative 5 WWE Corridor Variation nor the comparison portion of Alternative 5 would cross the recovery areas designated for ESA-listed aquatic invertebrate species, or areas known to contain these species.

Impacts on the SRBOP

As shown in Tables D.11-5 and D.11-6, Alternative 5 WWE Corridor Variation would result in impacts on BLM-managed lands within the SRBOP to habitats for the burrowing owl (124 acres during construction), sage-grouse (106 acres during construction), and pygmy rabbit (111 acres during construction).

Approximately 91 acres of GHMA, 40 acres of IHMA, 6 acres of PGH, and 1 acre of PPH and Key sage-grouse habitats would be impacted on BLM-administered lands on the SRBOP by the Alternative 5 WWE Corridor Variation during construction (see Table D.11-14).

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, and sage-grouse 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, and sage-grouse 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 (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, and Columbia spotted frog 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).

As discussed in Section 3.11.2.3, there are two variations to Alternative 5 (i.e., the Alternative 5 Helicopter-Assisted Construction Variation and the Alternative 5 WWE Corridor Variation).

In general, the Alternative 5 Helicopter-Assisted Construction Variation would have fewer direct impact on TES species (i.e., direct acreage of habitat impacted) than the comparison portion of Alternative 5 (see Tables D.11-5 through D.11-8). However, indirect impacts may be larger under this variation because, although the exact flight paths that would be taken by helicopters during construction is unknown, it is possible that additional areas occupied by TES species (beyond those directly impacted by the Project) could be indirectly impacted as helicopters fly from local airports to the staging areas and then on to the construction sites. For example, the helicopter flight paths between airports, fly yards, and the Project area would likely intersect additional agency designated sage-grouse habitat (beyond those directly impacted by construction) thereby exposing more sage-grouse and sensitive areas to potential disturbance.

In general, the Alternative 5 WWE Corridor Variation would have fewer impact on TES species habitats than the comparison portion of Alternative 5 overall (see Tables D.11-5 through D.11-8). However, the impacts that would occur to the TES species habitats on the SRBOP would be substantially higher under the Alternative 5 WWE Corridor Variation than those from the comparison portion of Alternative 5 (see Tables D.11-5, D.11-6, and D.11-14).

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, and sage-grouse 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 and sharp-tailed grouse 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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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.

Some of these EPMs are tied directly to the BLM's authority on federally managed lands (e.g., TESWL-14). In these cases, the BLM would not have the authority to require EPMs on private or state lands (see Appendix M for a list of the land-ownerships/management-areas where each EPM would be applicable). Similar measures may be required on state and private lands as part of the state's permitting process. However, if the state does not require similar measures on state or private lands, the benefits of these EPMs would not occur on these lands, and additional impacts to sensitive species could occur.

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. The Proponents' 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-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).

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

Additional mitigation beyond the EPMs (which are described above), existing plans (e.g., Migratory Bird Mitigation Plan, and the 2013 Greater Sage-Grouse Habitat Mitigation Plan), and design features will be required within the SRBOP. As discussed above, the Proponents' MEP does not contain sufficient information to determine if implementation of the Proponent's plan would successfully mitigate Project impacts in the SRBOP. Therefore, the BLM has worked with the Proponents to develop a framework for compensatory mitigation within the SRBOP that replaces the MEP (refer to Appendix K to this document).

Outside the SRBOP, mitigation beyond the currently required EPMs, existing plans, and design features is not necessary; however, modification to the existing 2013 Gateway West Greater Sage-Grouse Habitat Mitigation Plan (to include compensation for indirect

impacts) will be required for Project-wide implementation (discussed in more detail below).

This section describes the process that would be followed to determine the mitigation that may be 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 other design features discussed above, 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.

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

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 the framework plans in the POD, as well as the existing Project-wide compensatory mitigation plans (which are described in detail below). The BLM will then design mitigation options that address applicable remaining impacts within the SRBOP (see Section 3.0 for a discussion of the BLM's policy regarding mitigation; as well as Appendix K which contains the BLM's Compensatory Mitigation Framework). These mitigation options will contain components that will ensure that impacts to resources and values on the SRBOP that require mitigation are compensated for, and that enhancement of these resources is provided in order to comply with the enabling statute of the SRBOP. Much of the BLM's Compensatory Mitigation Framework (i.e, Appendix K) focuses on restoration and rehabilitation of wildlife habitats within the SRBOP, which will in turn, benefit most wildlife species found within the SRBOP.

The design features and EPMs that would be required Project wide in order to avoid and minimize impacts to TES species (including areas outside of the SRBOP) are described above in Section 3.11.2.5. In addition to these EPMs and design features, two existing 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) 2013 Gateway West Greater Sage-Grouse Habitat Mitigation Plan and 2) the Migratory Bird Habitat Mitigation Plan. These plans would be implemented Project wide, and would be applicable to Segments 8 and 9, if these segments are approved.

- The 2013 Gateway West 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 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 (see the 2013 FEIS Appendix C-3, Sections 2.1 and 2.1.1 for more detail). Additional documentation for how the HEA is used to determine greater sage-grouse compensatory mitigation that provides a net conservation gain can be found in Appendix J-2 of the 2013 FEIS. To ensure that these projects/efforts are successful, a monitoring plan would be developed and approved by the authorized officer. 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. The authorized officer may include the participation of a working group with involvement of the monitoring entity in an effort to obtain a net conservation gain.

- The Migratory Bird Habitat Mitigation Plan outlined the Proponents' proposal to mitigate for all wildlife habitats not already covered by the 2013 Gateway West 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 the 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 working group that protect, conserve, or enhance forested habitats. To ensure that the plan fully compensates for Project-related impacts, the Proponents propose the establishment of a working group that may provide guidance and oversight for the management and implementation of the fund, with the authorized officer's approval, in an effort to obtain a net benefit to resources.

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, the Migratory Bird Habitat Mitigation Plan would have little effect on the overall impacts that would occur along Segments 8 and 9 or on the SRBOP.

The 2013 Gateway West 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 additional 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 2013 Gateway West Greater Sage-Grouse Habitat Mitigation Plan will address mitigation for direct and some indirect impacts that would occur to sage-grouse Project-wide, and the agencies anticipate that this plan would fully compensate for direct impacts to sage-grouse; however, the current plan is not considered complete at this time because it does not address all potential indirect impacts. Prior to the sage-grouse listing determination, the BLM, USFWS, and state wildlife agencies collaborated on an evaluation of the entire Project's sage-grouse effects analysis and proposed mitigation measures via the Conservation Objectives Team report checklist. The report checklist found that the proposed mitigation plan did not address the indirect effects of "avoidance" and "increased avian predator presence and predation" on sage-grouse. 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. This full proposal and final plan (which will compensate for all direct and indirect impacts to sage-grouse) will be referred to in this SEIS as the "Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan." 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" [August 2016]) that provides an outline of potential acceptable methods to calculate the compensatory mitigation obligation related to additional indirect impacts omitted from the HEA and the original 2013 Gateway West Sage-Grouse Habitat Mitigation Plan. These unaddressed indirect impacts include avoidance behavior (reduced use) and increased avian predator presence and predation (which affect vital rates including reproduction, recruitment and survival).

The Proponents have committed to completing an HEA and continuing to develop the Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan based on a similar process currently being developed for Energy Gateway South (EGS) where Rocky Mountain Power is also a BLM applicant. The approach outlined in the white paper (described above) was updated by a subgroup (consisting of the BLM and USFWS representatives) to incorporate new science and site-specific data, as well as to make the analytical approach compatible with the HEA models developed for mitigation planning for the EGS project. Two of the original authors of the white paper (i.e., Heather McPherron and Jason Sutter) participated in this subgroup. The final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan will be modeled after similar components outlined in the EGS Sage-Grouse Mitigation Framework Plan and HEA, with the intent to demonstrate and achieve a net conservation gain for the species. The final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan (which will apply project wide to all Gateway West segments) will be based upon guidance from the efforts currently being developed for EGS by the BLM, USFWS, and Rocky Mountain Power's consultants with further review by state, federal, and other agencies with sage-grouse expertise. It will be adapted for Idaho and Wyoming-specific circumstances and ultimately adopted for the Gateway West Project.

The following is a summary of the process that will be followed while developing the final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan for the Project. After completion of site-specific engineering and design, the Gateway West Proponents will develop a final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan that is consistent with the nation-wide Greater Sage-Grouse Habitat Mitigation Plan as well as the 2013 ROD Stipulations, which will offset impacts across all affected land ownerships and jurisdictions. The BLM will review the final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan (as well as any other sage-grouse mitigation plans proposed for other projects such as EGS) to ensure that it contains the following additional components (beyond what is currently included in the 2013 Gateway West Greater Sage-Grouse Habitat Mitigation Plan): 1) consistent methodology for quantifying and addressing indirect effects due to avoidance behavior and increased avian predator presence and predation; 2) consistent methodology for quantifying and addressing direct effects including impacts from typical disturbance footprints, construction, operation, and disturbance considerations in steep terrain, and consideration of vegetation disturbance types; and 3) methodology for quantifying and addressing direct and indirect effects that is consistent with the Project's FEIS (including supplemental) analysis and, in Wyoming, the Governor's Corridor Core Area Strategy. Subject to each federal, state, and local agency's determination that the final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan is sufficient, and that its implementation is consistent with applicable laws and government policies, each agency may use the final Comprehensive Gateway West Sage-Grouse Habitat

Although the conservation management standard for greater sage-grouse of "net conservation gain" in PHMA and IHMA from the 2015 land use plan amendments does not apply to the Project, the BLM would seek to apply mitigation, including compensatory mitigation, to achieve an overall "net conservation gain" in connection

with the Project. These mitigation measures would follow the process set forth in the Greater Sage-Grouse Habitat Mitigation Plan.

Mitigation Plan for its project authorizations (e.g., for the BLM, the final Plan implementation will be developed by the terms and conditions of ROW grants and permits issued to the Proponents). With respect to the BLM, the final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan will be presented to the BLM's Authorized Officer to review and recommend modifications for or approve the plan, based on the totality of the information and analysis provided, prior to issuing a Notice to Proceed. Because the final Comprehensive Gateway West Sage-Grouse Habitat Mitigation Plan's overall success may be dependent on the successful implementation of each mitigation Project component, each applicable agency would retain discretion to suspend or terminate its authorization in the event that any mitigation effort is not successfully implemented or in compliance with the grant terms and conditions, regardless of that mitigation effort's location or jurisdictional considerations.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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 Appendix M of this FSEIS. 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, Alternative 5 Helicopter-Assisted Construction, and WWE Corridor 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 2009a) 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 and Variation

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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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	–	–	–	–	–	–	–	–
8/9	Comparison portion for the Alt. 5 WWE Corridor and Helicopter-assisted Construction Variations	1,130	--	--	--	--	--	22	--	--
	Alt. 5 WWE Corridor Variation	1,112	--	--	--	--	--	189	--	--
	Alt. 5 Helicopter-assisted Construction Variation	1,027	--	--	--	--	--	22	--	--

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	–	–	–	–	–	–	–	–
8/9	Comparison portion for the Alt. 5 WWE Corridor and Helicopter-assisted Construction Variations	90	--	--	--	--	--	6	--	--
	Alt. 5 WWE Corridor Variation	86	--	--	--	--	--	17	--	--
	Alt. 5 Helicopter-assisted Construction Variation	60	--	--	--	--	--	6	--	--

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

Tables 3.12-1 and 3.12-2 present the active mineral acreages for construction and operations disturbance areas, respectively. The Helicopter-Assisted Construction Variation would affect nearly the same amount of total land and the same amount of saleable minerals (22 acres) as the comparison portion of Alternative 5. There would be no additional affects to minerals by selection of the Helicopter-Assisted Construction Variation.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

Tables 3.12-1 and 3.12-2 present the active mineral areas for construction and operations disturbance areas, respectively. When compared to the comparison portion of Alternative 5, the WWE Corridor Variation would affect nearly the same amount of total land during construction, but would affect much more saleable mineral acreage (189 acres compared to 22 acres). The variation would affect 17 acres of saleable minerals in the operations area, compared to only 6 acres in the comparison portion of Alternative 5. No other minerals are present within the WWE Corridor Variation or the comparison portion of Alternative 5.

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.

<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 3.12.2.3, 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.

Inclusion of the Helicopter-Assisted Construction Variation into Alternative 5 would result in similar effects to minerals compared to the unmodified version of Alternative 5.

Inclusion of the WWE Corridor Variation in Alternative 5 would result in an additional 167 acres of saleable minerals being impacted during construction and 11 more acres of saleable minerals impacted during operations. No other minerals would be affected.

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 Appendix M. 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. The Proponents' 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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

There is no need for compensatory mitigation, either inside or outside 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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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.

<u>Morley Nelson Snake River Birds of Prey National Conservation Area</u>

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 2009a) 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 Appendix M of this FSEIS. 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 and Alternative 5 Helicopter-

Assisted Construction and WWE Corridor 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 and Variation

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 Variations. 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	–
8/9	Comparison portion for the Alt. 5 WWE Corridor and Alt. 5 Helicopter-assisted Construction Variations	66.1	225.1	21.6	28.9
	Alternative 5 WWE Corridor Variation	62.2	211.9	14.9	30.0
	Alternative 5 Helicopter-assisted Construction Variation	61.1	225.1	21.6	28.9

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).

Variations

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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The Alternative 5 Helicopter-Assisted Variation would be the same length as the comparison portion of Alternative 5. The routes would be identical; only the construction method would change. The paleontology risk factor for both was calculated at 225.1 (see Table D.13-1). Both would cross 21.6 miles of PFYC Class 3 and 28.9 miles of PFYC Classes 4 and 5. However, the Helicopter-Assisted Construction Variation may have less total ground disturbance.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

The Alternative 5 WWE Corridor Variation is approximately 3.9 miles shorter than the comparison portion of Alternative 5. The paleontology risk factor for the WWE Corridor

Variation was calculated at 211.9, which is slightly less than the comparison portion of Alternative 5 (see Table D.13-1). However, the WWE Corridor Variation would cross 1.1 miles more bedrock with PFYC Classes 4 and 5. The potential impacts to fossil resources for the WWE Corridor Variation are very similar to those for the comparison portion of Alternative 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.

As discussed in Section 3.13.2.3, inclusion of the Alternative 5 Helicopter-Assisted Construction Variation or the Alternative 5 WWE Corridor Variation would alter the extent of impacts that could occur under this alternative. The Helicopter-Assisted Construction Variation would have the least potential impacts to paleontological resources because this variation would minimize ground disturbance. The WWE Corridor Variation would have similar potential paleontological effects as the comparison portion of Alternative 5.

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 Appendix M.

The following measures, which are identified in Appendix M, 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. *[Note: Although this EPM specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9.]*

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.

Some of these EPMs are tied directly to the BLM's authority on federally managed lands (e.g., PALEO-4 and PALEO-5). In these cases, the BLM would not have the authority to require EPMs on private or state lands (see Appendix M for a list of the land ownerships/management areas where each EPM would be applicable). Similar measures may be required on state and private lands as part of the state's permitting process. However, if the state does not require similar measures on state or private lands, the benefits of these EPMs would not occur on these lands, and additional impacts to paleontological resources could occur.

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 Proponents' 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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; as a result, Sections 3.13.2.2, 3.13.2.3, and 3.13.2.4 take these measures and their impact offsets into consideration.

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.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Helicopter-Assisted Construction and WWE Corridor Variations for Alternative 5. 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 2009a) 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 further discussed here.

We received further comments from the Proponents expressing concern over the potential for lava tubes in the area. It is possible that lava tubes are present in areas of basalt along Segments 8 and 9. However, individual lava tubes are of limited size and extent, are not mapped, and would not result in the types of large-scale subsidence experienced in some previously mined areas. Contact with a lava tube could be significant if directly under a load-bearing structure (i.e, transmission line tower). If present, it would require relocation of the structure or special geotechnical considerations. However, significant subsidence from lava tubes is not likely.

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 Appendix M of this FSEIS. 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, the Toana Road Variations, and the Alternative 5 Helicopter-Assisted Construction and the WWE Corridor 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 and Variation

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; the Toana Road Variations, and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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.

Variations

Toana Road Variations 1 and 1-A to 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.

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 (see Tables D.14-1, D.14-2, and D.14-3). Neither of the Toana Road Variations are at greater geologic hazard risk than the equivalent portion of Revised Proposed Route in Segment 9.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The data in Tables D.14-1, D.14-2, and D.14-3 in Appendix D indicate that the Helicopter-Assisted Construction Variation is located in areas with low risks from earthquakes and landslides, and geologic risks would be similarly low compared to the comparison portion of Alternative 5. Geologic hazards are present and could impact the Project regardless of the construction method used.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow FEIS 9 for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

The WWE Corridor Variation in Routes 8G and 9K is located in areas with low risks from earthquakes and landslides (see Tables D.14-1, D.14-2, and D.14-3). Selection of this variation would not result in a differential risks from geologic hazards compared to the comparison portion of Alternative 5.

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	–	–

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 3.14.2.3, 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.

Alternative 2 – Revised Proposed 8 and FEIS Proposed 9

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.

The entire distance of the Helicopter-Assisted Construction Variation is located in areas of low risks from landslides and earthquakes. Therefore, selection of this variation would not affect the geologic hazard risks associated with Alternative 5.

The WWE Corridor Variation (which consists of two transmission lines) is approximately 4 miles shorter than the original Alternative 5 which means there would be 4 miles less distance to be affected by geologic hazards. This variation is also located in areas of low risks from landslides and earthquakes. Therefore, selection of this variation would not affect the geologic hazard risks associated with Alternative 5.

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 Appendix M.

The following measure, which is identified in Appendix M, is related to geologic hazards and would be applicable to Segments 8 and 9. The other geohazard EPM for geological resources (i.e., GEO-1) is related to active mining operations, and as such, would not likely be applicable to this portion of the Project.

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.

GEO-2 is tied directly to the BLM's authority on federally managed lands. The BLM would not have the authority to require this EPM on private or state lands (see Appendix M for a list of the land-ownerships/management-areas where each EPM would be applicable). A similar measure may be required on state and private lands as part of the state's permitting process. However, if the state does not require a similar measure on state or private lands, the benefits of this EPM would not occur on these lands, and additional impacts could occur.

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 Proponents' 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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.

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 the framework plans in the POD, 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.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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 that 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 Appendix M of this FSEIS. 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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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.

Construction

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, Routes, 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 Appendix M 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 Appendix M of this FSEIS 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 includes 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 where practicable.

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 Appendix M.

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. Appendix M 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 Appendix M 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 and Variation

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.

Soil Disturbance the SRBOP

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation

considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

During the construction phase, the Helicopter-Assisted Construction Variation would disturb approximately 1,027 acres of soil, compared to 1,130 for the comparison portion of Alternative 5. This would include 309 acres of prime farmland, 493 acres of highly wind-erodible soils, 740 acres of soils with high K factor, 926 acres of soils with a low T factor, 287 acres of droughty soil, and 818 acres of shallow bedrock (Table D.15-1). The Helicopter-Assisted Construction Variation would affect fewer total acres and result in less soil impacts than the comparison portion of Alternative 5.

During the operations phase, this variation would disturb approximately 69 acres of soil. This disturbance would include 16 acres of prime farmland, 29 acres of highly wind-erodible soils, 48 acres of soils with high K factor, 61 acres of soils with a low T factor, 21 acres of droughty soil, and 59 acres of shallow bedrock (Table D.15-2). There would be a total of 69 acres of soil lost to other uses for the operational life of the Project. Overall during the operations phase, this variation would result in less disturbance acreage, soil effects, and permanent soil loss than the comparison portion of Alternative 5.

Disturbance in the SRBOP

The Helicopter-Assisted Construction Variation could disturb 17 acres within the SRBOP due to road construction and work area disturbances along the boundary near the Sinker Butte portion of the NCA. The same areas would be disturbed for the comparison portion of Alternative 5. All of the SRBOP construction acres contain high K factor, low T factor, and shallow bedrock. There is no highly wind-erodible soil, prime farmland, stony-rocky soil, or droughty soil in the SRBOP construction disturbance area (Table D.15-1). It is likely that these impacts could be minimized by micrositing during the design phase.

This variation would disturb 5 acres on the SRBOP during operations, the same as the comparison portion of Alternative 5. All of the SRBOP operations acres contain high K factor, low T factor, and shallow bedrock. There is no highly wind-erodible soil, prime farmland, stony-rocky soil, or droughty soil in the SRBOP operations disturbance area (Table D.15-2). Within the SRBOP, the Helicopter-Assisted Construction Variation construction and operations disturbance areas effects to soil are the same as for the comparison portion of Alternative 5.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

During the construction phase, the WWE Corridor Variation would disturb approximately 1,112 acres of soil, which is slightly less than the 1,130 acres disturbed by the comparison portion of Alternative 5. This would include 383 acres of prime farmland, 599 acres of highly wind-erodible soils, 815 acres of soils with high K factor, 1,031 acres of soils with a low T factor, 297 acres of droughty soil, and 808 acres of shallow bedrock (Table D.15-1). The WWE Corridor Variation construction phase would disturb slightly less acreage than the comparison portion of Alternative 5, but would contain more acreage of highly wind-erodible soil, high K factor soil, and prime farmland.

The WWE Corridor Variation operations phase would disturb approximately 86 acres of soil. This would include 30 acres of prime farmland, 45 acres of highly wind-erodible soils, 61 acres of soils with high K factor, 76 acres of soils with a low T factor, 25 acres of droughty soil, and 65 acres of shallow bedrock (Table D.15-2). There would be a total of 86 acres of soil lost to other uses for the operational life of the Project. During the operations phase, the WWE Corridor Variation would disturb 13 acres less area than the comparison portion, and have fewer impacts to high K factor soil, low T factor soil, droughty soil, shallow bedrock, and permanent soil loss.

Disturbance in the SRBOP

The construction disturbance area for the WWE Corridor Variation on the SRBOP would be 184 acres, which is much greater than the 17 acres found in the comparison portion of Alternative 5. All of the SRBOP construction acres contain high K factor and low T factor. The WWE Corridor Variation contains 81 acres of highly erodible soil and 81 acres of prime farmland, while these soil factors are not found in the comparison portion of Alternative 5. The WWE Corridor Variation in the SRBOP contains 25 fewer acres of droughty soil, but 87 more acres of shallow bedrock (Table D.15-1). Within the SRBOP, the WWE Corridor Variation contains more soil impacts than the comparison portion of Alternative 5.

The operations disturbance area for the WWE Corridor Variation of the SRBOP would be 16 acres, which is 11 acres more than the comparison portion of Alternative 5. All of the SRBOP construction acres contain high K factor and low T factor soils. The WWE Corridor Variation in the SRBOP operations area contains more potential effects to all of the soil parameters than the comparison portion of Alternative 5.

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, 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.

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.

The Helicopter-Assisted Construction Variation would affect the least amount of total acres and contain less soil impacts than the comparison portion of Alternative 5. Within the SRBOP, the Helicopter-Assisted Construction Variation construction and operations disturbance areas effects to soil are very similar to those for the comparison portion of Alternative 5.

The WWE Corridor Variation construction phase would disturb slightly less acres than the comparison portion of Alternative 5, but would contain more acres of highly wind-erodible soil, high K factor soil, and prime farmland. During the operations phase, the WWE Corridor Variation would disturb 13 acres less area and have fewer impacts to high K factor soil, low T factor soil, droughty soil, shallow bedrock, and permanent soil loss. However, soil effects under the WWE Corridor Variation are generally greater than the comparison portion of Alternative 5 within the SRBOP.

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 is 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 as 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 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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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-8 When feasible, reroute all construction or maintenance activities around wet areas so long as the route does not cross into sensitive resource areas and at the approval of the CIC.

SOIL-9 Limit access of construction equipment to the minimum area feasible, remove and separate topsoil in wet or saturated areas subject to temporary disturbance, and stabilize subsurface soils with a combination of one or more of the following: perform grading to dewater problem areas, utilize weight dispersion mats, and maintain erosion control measures such as surface drilling and back-dragging. After construction is complete, regrade and recontour the area, replace topsoil, and reseed to achieve the success standard desirable plant covers as stated in the Reclamation Plan.

SOIL-10 Vegetation removal and soil disturbances (including temporary road improvements) will be minimized in areas where soil constraints occur. In areas of overland construction, where vegetation removal is required, mowing or cutting and/or back-dragging a cat blade will be the primary method used (also refer to Appendix D –Framework Reclamation Plan).

SOIL-11 Prior to construction, soils will be evaluated to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the Project's geotechnical engineer, such as excavation and replacement of the expansive soils with compacted backfill, will be required. If imported backfill material is used, it must be from a BLM/USFS-approved source

and certified as free of invasive weeds and propagules (i.e., seeds and root fragments).

SOIL-12 Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.

SOIL-13 Inform all construction personnel, before they are allowed to work on the Project, of environmental concerns, pertinent laws and regulations, and elements of the erosion control plan.

SOIL-14 Slope and berm graded material, where possible, to reduce surface water flows across the graded area.

SOIL-15 Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling.

SOIL-16 Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.

SOIL-17 Re-establish native vegetation cover in highly erodible areas as quickly as possible following construction where determined necessary (refer to Appendix D –Framework Reclamation Plan).

SOIL-18 Construction water and water used for dust control will come from permitted sources identified by the Construction Contractor and a map showing the locations of these sources will be provided to the CIC. If the quality of the water is found to be causing any environmental changes (i.e., dying vegetation, excessively hard crusting of soils), the Construction Contractor will test the quality of the water and provide the results to the BLM for review.

SOIL-19 All Project personnel will be educated on dust control procedures.

SOIL-20 To prevent accelerated wind or water erosion on dirt roads, gravel mulches may be added if other mitigation measures are not adequate or if the area is not in a sensitive receptor zone. Gravel of approximately 0.75 to 1.5 inches in diameter should be used and cover a minimum of 90 percent of the soil surface. Slopes steeper than 3:1 may require additional sediment and erosion control structures.

SOIL-21 Surface roughening aids establishment of vegetative cover, reduces runoff velocities, increases infiltration, and reduces erosion by providing sediment trapping. Graded areas with smooth surfaces increase the potential for accelerated erosion; therefore, surfaces should be left in a roughened condition whenever possible.

SOIL-22 On steep slopes (greater than 30 percent) or in areas of concentrated flows (e.g., waterways) erosion control matting or riprap may be used to stabilize the surface and increase infiltration times.

SOIL-23 Areas graveled for stabilization will be inspected to ensure depressions caused by vehicle traffic are filled and runoff is not being directed toward wetlands or other receiving waters.

SOIL-24 Roughened surfaces should be periodically inspected for rills and washes. Areas exhibiting accelerated erosion will be filled and reseeded as necessary or determined by the BLM or USFS Authorized Officer or his/her designated representative.

SOIL-25 Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.

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. The Proponents' 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.

3.15.2.6 BLM Compensatory Mitigation Measures

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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.

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

There is no need for compensatory mitigation outside the SRBOP. The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources inside 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 the framework plans in the POD, as well as the existing compensatory mitigation plans discussed above in Section 3.15.2.5. The compensatory mitigation plans 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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 Appendix M of this FSEIS. 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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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 and Variation

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.

There are seven Rivers and Harbors Act (RHA) Section 10 navigable waterways as regulated by the USACE located within the Project limits. The Revised Proposed Route for Segment 8 (which is included in Alternatives 1, 2, and 3) crosses the Snake River at Noble Island, which is within the navigable segment of the river that extends upstream

of the island to RM 445.5. Section 10 of the RHA prohibits the creation of any obstruction to the navigable capacity of any waters of the United States without specific approval of the USACE.

As this segment is regulated by the USACE, authorization under Section 10 of the RHA would be required prior to construction of that crossing. The Proponents would comply with conditions in the RHA Section 10 permit obtained from the USACE.

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.

<u>Operations</u>

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).

<u>Operations</u>
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).

Operations

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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

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 1-A 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).

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart in this portion of the alternative. The variation considers helicopter-assisted construction for the 33.8 miles of Route 9K between MP 141.0 and the Hemingway Substation and 34.8 miles of 8G between MP 112.0 and the substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana

Construction

The Alternative 5 Helicopter-Assisted Construction Variation would use a similar road network as the comparison portion of Alternative 5; however the roads would be temporary rather than permanent. In order to reduce ground disturbance, the proposed road layout has been modified. In some cases, these changes have resulted in different stream crossing locations and methods.

Surface Water

The Alternative 5 Helicopter-Assisted Construction Variation would have 63 total crossings compared to 58 for the comparison portion of Alternative 5 (Table D.16-1 in Appendix D).

This variation would have a slightly higher percent of the construction disturbance area located within the moderate- and high-risk flood zone (31 percent; see Table D.16-2 in Appendix D) than the comparison portion of Alternative 5 (29 percent).

The helicopter-assisted construction variation would have the same number of surface water diversions (119) as the comparison portion of Alternative 5 (Table D.16-5 in Appendix D).

This variation would have a lower percentage of stream crossings on non-listed ephemeral streams than the comparison portion (Table D.16-6 in Appendix D). Of the 63 crossings for the variation, 55 are non-listed ephemeral streams. Of the 58 crossings for the comparison portion for Alternative 5, 51 are non-listed ephemeral streams. There are 3 crossings on TMDL or 303(d) listed streams for sediment or temperature by the Alternative 5 Helicopter-Assisted Construction Variation as well as the comparison portion (Table D.16-6 in Appendix D).

The Analysis Area for both the Alternative 5 Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 includes 4 stream segments that have 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 variation or the comparison portion of Alternative 5.

The variation would have 3 fewer acres of disturbance within 100 feet of ephemeral streams than the comparison portion of Alternative 5 (Table D.16-14 in Appendix D).

Groundwater

The construction disturbance area for the Alternative 5 Helicopter-Assisted Construction Variation would overlay 25 more acres of shallow groundwater than the comparison portion of Alternative 5 (Table D.16-7 in Appendix D). The variation and the comparison portion of Alternative 5 have the same number of potable water wells within 0.5 mile of the centerline (Table D.16-10 in Appendix D). The helicopter-assisted construction variation and the comparison portion of Alternative 5 do not cross the ESRP Aquifer (Table D.16-11 in Appendix D). The variation would require a similar duration of construction and similar volume of water as the comparison portion of Alternative 5 due to a similar length in transmission line (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 the Alternative 5 Helicopter-Assisted Construction Variation or the comparison portion of Alternative 5.

This variation would have 3 percent fewer acres in the moderate- and high-risk flood zone (Table D.16-3 in Appendix D) than the comparison portion of Alternative 5.

The variation would include 1 fewer acre of operations disturbance area within 100 feet of ephemeral streams than the comparison portion (Table D.16-15 in Appendix D).

The operations disturbance area for the Alternative 5 Helicopter-Assisted Construction Variation would overlay about the same number of acres of shallow groundwater as the comparison portion of Alternative 5 (Table D.16-8 in Appendix D).

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart in this portion of the alternative. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 33.8 miles of Route 9K between MP 141.0 and the Hemingway Substation and 34.8 miles of 8G between MP 112.0 and the substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE corridor.

Construction

Surface Water

The Alternative 5 WWE Corridor Variation would have the same number of stream crossings as the comparison portion of Alternative 5. These include 27 fewer drive-

through crossings and 20 more ford crossings than the comparison portion of Alternative 5 (Table D.16-1 in Appendix D).

This variation would have a lower percent of the construction disturbance area located within the moderate- and high-risk flood zone (22 percent; see Table D.16-2 in Appendix D) than the comparison portion of Alternative 5 (29 percent).

The variation would have 3 more surface water diversions (122) than the comparison portion of Alternative 5 (119; Table D.16-5 in Appendix D).

The Alternative 5 WWE Corridor Variation would have a lower percentage of stream crossings on non-listed ephemeral streams than the comparison portion (Table D.16-6 in Appendix D). Of the 62 crossings for the variation, 58 are non-listed ephemeral streams. Of the 66 crossings for the comparison portion for Alternative 5, 58 are non-listed ephemeral streams. There is 1 crossing on TMDL or 303(d) listed streams for sediment or temperature by the Alternative 5 WWE Corridor Variation and 3 on the comparison portion of Alternative 5 (Table D.16-6 in Appendix D).

The Analysis Area for the Alternative 5 WWE Corridor Variation crosses 1 less stream segment that has a TMDL for temperature than the comparison portion of Alternative 5 (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 either the Alternative 5 WWE Corridor Variation or its comparison portion.

This variation would have 15 more acres of disturbance within 100 feet of ephemeral streams than the comparison portion of Alternative 5 (Table D.16-14 in Appendix D).

Groundwater

The construction disturbance area for the Alternative 5 WWE Corridor Variation would overlay 3 fewer acres of shallow groundwater than the comparison portion of Alternative 5 (Table D.16-7 in Appendix D). The variation has 4 more potable water wells within 0.5 mile of the centerline than the comparison portion (Table D.16-10 in Appendix D), and neither the variation nor the comparison portion cross the ESRP Aquifer (Table D.16-11 in Appendix D). The Alternative 5 WWE Corridor Variation would require a similar duration of construction and similar volume of water as the comparison portion of Alternative 5 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 Alternative 5 WWE Corridor Variation or the comparison portion.

The variation would have 1 percent fewer acres in the moderate- and high-risk flood zone (Table D.16-3 in Appendix D) than the comparison portion of Alternative 5.

This variation would include the same number of acres of operations disturbance area within 100 feet of ephemeral streams as the comparison portion of Alternative 5 (Table D.16-15 in Appendix D).

The operations disturbance area for the Alternative 5 WWE Corridor Variation would overlay about the same number of acres of shallow groundwater as the comparison portion of Alternative 5 (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 9 Revised 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.

The Alternative 5 Helicopter-Assisted Construction Variation

The Alternative 5 Helicopter-Assisted Construction Variation would have 5 more stream crossings and more construction disturbance in a moderate- and high-risk flood hazard areas. Both the variation and the comparison portion of Alternative 5 would cross the 1 stream segment with a TMDL for sediment and 2 for temperature. The variation would impact more acres within 500 feet of perennial, intermittent, and TMDL or 303(d) listed streams, but have more crossings on non-listed ephemeral streams, fewer surface water diversions and fewer disturbance acres within 100 feet of ephemeral streams than the comparison portion of Alternative 5.

The Alternative 5 Helicopter-Assisted Construction Variation would disturb more acres in areas of shallow groundwater but fewer acres with potable wells located within 0.5 mile of the centerline than the comparison portion of Alternative 5. Other key parameters are the similar for both the variation and the comparison portion.

The Alternative 5 WWE Corridor Variation

The Alternative 5 WWE Corridor Variation would have the same number of stream crossings as the comparison portion of Alternative 5. The variation would not cross any stream segments with a TMDL for sediment, while the comparison portion of Alternative 5 would cross 1; the variation would cross 1 stream segment with a TMDL for temperature compared to 2 for the comparison portion of Alternative 5.

This variation would have a slightly lower percent of the construction disturbance area located within the moderate- and high-risk flood zone than the comparison portion of Alternative 5 but cross 3 more surface water diversions than the comparison portion of Alternative 5.

No acres of woody vegetation located within 500 feet of a temperature-impaired stream would be disturbed due to construction of either the Alternative 5 WWE Corridor Variation or its comparison portion. This variation would have 15 more acres of disturbance within 100 feet of ephemeral streams than the comparison portion of Alternative 5.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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 multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC 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 and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site

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 Storage of 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. *[Note: Although this EMP specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9 unless the landowner has different requirements.]*

WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

WQA-30 In the event of a spill, cleanup will be immediate. The Construction Contractor will keep spill kits in their vehicles to allow for quick and effective response to spills. Items to be included in the spill kit at a minimum are:

- Protective clothing and gloves
- Absorptive clay, “kitty litter,” or other commercial absorbents
- Plastic bags and a bucket
- Shovel
- Fiber brush and screw-in handle
- Dust pan

- Caution tape
- Highway flares (use on established roads only)
- Detergent

WQA-31 The response to a hazardous material spill will vary with the size and location of the spill, but general procedures include:

- CIC and BLM, BOR, or USFS notification
- Traffic control
- Dressing the cleanup team in protective clothing
- Stopping any leaks
- Containing spilled material
- Cleaning up and removing spilled pesticide and contaminated absorptive material and soil
- Transporting spilled pesticide and contaminated material to an authorized disposal site

WQA-32 Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will:

- Attempt to identify the source, composition, and hazard of the spill.
- Notify appropriately trained personnel immediately.
- Isolate and stop the spill, if possible, and begin cleanup (if it is safe).
- Initiate evacuation of the area, if necessary.
- Initiate reporting actions.

WQA-33 Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.[1]

WQA-34 In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will

[1] The appendices referred to in the text of this EMP are from the Record of Decision, not this SEIS.

be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Proponents.

WQA-35 If construction activity occurs within a wetland with standing water or a flowing stream, prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and "wet" wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F – Framework Stormwater Pollution Prevention Plan).[2]

WQA-36 Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations:

- Shovels
- Absorbent pads/materials
- Personal protective gear
- Medical first-aid supplies
- Bung wrench (nonsparking)
- Phone list with emergency contact numbers
- Storage containers
- Communications equipment

WQA-37 The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel. Persons accountable for carrying out spill response activities will be designated prior to construction and informed of their specific duties and responsibilities with respect to environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous Materials Management Plan. At a minimum, this training shall include the following:

- An overview of regulatory requirements
- Methods for the safe handling/storage of hazardous materials

[2] The appendices referred to in the text of this EPM are from the ROD, not this SEIS.

- Spill prevention procedures
- Emergency response procedures
- Use of personal protective equipment
- Use of spill cleanup equipment
- Procedures for coordinating with emergency response teams
- Procedures for notifying agencies
- Procedures for documenting spills
- Identification of sites/areas requiring special treatment, if any

WQA-38 Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.

WQA-39 Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible, including:

- current threats to human health and safety, include known injuries, if any
- spill location, including landmarks and nearest access route
- reporter's name and phone number
- time spill occurred
- type and estimated amount of hazardous materials involved
- potential threat to property and environmental resources, especially streams and waterways
- status of response actions

WQA-40 The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site.

- Wyoming DEQ (24 hours) at (307) 777-7781.
- Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610.

- If spill threatens human health, call 911, and the appropriate county response center.
- National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171.

The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.

WQA-41 When a spill poses a direct and immediate threat to health and safety and/or property, the land management agency and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.

WQA-42 The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.

WQA-43 The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident):

- time and date of each log entry
- name of individual recording log entry
- list of all agencies notified, including name of individual notified, time, and date
- type and amount of material spill
- resources affected by spill
- list of response actions taken, including relative success
- copies of letters, permits, or other communications received from government agencies throughout the duration of the spill
- copies of all outgoing correspondence related to the spill
- photographs of the response effort (and surrounding baseline photographs if relevant)

WQA-44 During the Project's operation and maintenance phase, the Proponents will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Proponents and all operations and maintenance

subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.

WQA-45 Reclaim stream channels/bottoms and wetlands to their approximate preconstruction configuration/contours, unless the original stream bank contours are excessively steep and/or unstable and a more stable final contour can be specified or where permanent stream crossings must be created to maintain access throughout the life of the Project.

WQA-46 Stabilize stream banks, wetlands, and adjacent upland areas by establishing permanent erosion control measures and vegetation cover after the completion of construction (refer to Appendix N – Framework Erosion, Dust Control, and Air Quality Plan and Appendix D – Framework Reclamation Plan).[3]

WQA-47 Use permanent waterbars, if needed, on slopes above streams or wetland boundaries, on travel routes, and along the ROW to minimize sediment flow from adjacent uplands into the stream or wetland.

WQA-48 Remove all prefabricated equipment pads, swamp mats, and geotextile fabric used for stream and wetland crossings on completion of construction.

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.

Although WQA-24 specifically mentions federal lands, the Proponents have agreed to apply this EPM to all lands in Segments 8 and 9 unless the landowner has different requirements. If a landowner does not want to install culverts that exceed the stream gradient, this could result in stream flow blockage and/or washout of streambed material in the culvert. Stream flow blockage could potentially create flooding upstream of the culvert. Washout of material in the culverts would create a sediment plume downstream during fast flows, disrupting habitat substrate continuity for aquatic species. However, it is not considered likely that a landowner would object to this measure.

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. The Proponents' 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

[3] The appendices referred to in the text of this EPM are from the ROD, not this SEIS.

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, 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 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.

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 Appendix M) 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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. However, the Proponents have committed to Project design features and EPMs that would minimize or avoid impacts on environmental resources. Therefore, there is no need for additional compensatory mitigation for water resources, either inside or outside the SRBOP.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 2009a) 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.

The Alternative 5 Helicopter-Assisted Construction Variation would follow the same alignment as the comparison portion of Alternative 5. The majority of this variation and the comparison portion of Alternative 5 would cross BLM-managed lands (87 percent). The majority of the Alternative 5 WWE Corridor Variation would also cross BLM-managed lands, with 80 percent of this variation located on BLM-managed land and 16 percent located on private land compared to 8 percent for the comparison portion.

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
Route 8H – Existing 500-kV Removal	117	23	0	77	0

Table 3.17-1. Existing Land Ownership within the Analysis Area (continued)

Route	Analysis Area Total (Acres)[1/]	Percent of Analysis Area			
		BLM	State[2/]	Private	Other[3/]
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
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
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations[4/]	4,531	87	4	8	0
Alternative 5 Helicopter-Assisted Construction Variation[4/]	4,539	87	4	8	0
Alternative 5 WWE Corridor Variation[5/]	4,215	80	4	16	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.
4/ This comparison portion and variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.
5/ This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

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

Route	Total Miles
Revised Proposed	11.4
Route 8G	13.5
Route 8H	14.3
Route 8H – Existing 138-kV Removal	3.2
Revised Proposed	7.5
Revised Proposed – Existing 138-kV Removal	3.2
FEIS Proposed Route	4.6
Route 9K	4.6

Table 3.17-2. Idaho Endowment Land (continued)

Route	Total Miles
Comparison portion for Toana Road Variations 1/1-A	0.0
Toana Road Variation 1	0.3
Toana Road Variation 1-A	1.0
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations[1/]	2.5
Alternative 5 Helicopter-Assisted Construction Variation[1/]	2.5
Alternative 5 WWE Corridor Variation[2/]	2.4

1/ This comparison portion and variation consist of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.
2/ This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

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) and variations 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[1/2/]	8G, 8H, Segment 9 Revised Proposed, FEIS Proposed 9, 9K
SRBOP[1/]	Segment 8 and 9 Revised Proposed, FEIS Proposed 9, 8G, 8H, 9K	Twin Falls	Segment 9 Revised Proposed, FEIS Proposed 9, 9K
Owyhee[1/2/]	Segment 8 and 9 Revised Proposed, FEIS Proposed 9, 8G, 8H, 9K		
Cassia	Segment 9 Revised Proposed, FEIS Proposed 9, 9K		

1/ The Alternative 5 WWE Corridor Variation would cross lands managed under these plans.
2/ The Alternative 5 Helicopter-Assisted Construction Variation would cross lands managed under these plans.

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 Project 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. Recreation on the SRBOP is discussed in more detail in Section 3.24 – Morley Nelson Snake River Birds of Prey National Conservation Area.

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. Recreation activities on the SRBOP include guided horseback rides and annual equestrian endurance rides. Approximately two equestrian endurance rides pass through the SRBOP each year, testing the strength and endurance of the participants in a 50-mile ride, with the number of riders typically ranging from 20 to 40. The staging and start/finish areas for these races are located on private property in Oreana, Idaho (Homan 2016). Recreation on the SRBOP is discussed in more detail in Section 3.24 – Morley Nelson Snake River Birds of Prey National Conservation Area.

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 FEIS Proposed 9, 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 FEIS Proposed 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	–
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations[1/]	66.1	–	54.6	3.8	–
Alternative 5 Helicopter-Assisted Construction Variation[1/]	66.1	–	54.6	3.8	–
Alternative 5 WWE Corridor Variation[2/]	62.2	–	46.7	3.4	–

1/ This comparison portion and variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

2/ This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

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 Appendix M of this FSEIS. 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, Alternative 5 Helicopter-Assisted Construction, and Alternative 5 WWE Corridor 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 and Variation

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 the four 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.

<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.

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 IDARNG indicated their preference for the line to avoid a portion of the “Alpha” Maneuver Sector, OCTC. The IDARNG 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 IDARNG 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. Route 8G would pass slightly more than 1 mile southwest of the Mud Flat ACEC, also known as the Shoofly Oolite ACEC.

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. Route 9K would pass slightly more than 1 mile southwest of the Mud Flat ACEC.

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.

Variations

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, as well as Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The combined total length (8G plus 9K) would consist of 66.1 miles. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The Alternative 5 Helicopter-Assisted Construction Variation would follow the same alignments as the portions of 8G and 9K it would replace, but would employ helicopter-assisted construction to reduce ground disturbance. This variation would only apply to Alternative 5; therefore, the direct and indirect effects of this variation are discussed in Section 3.17.2.4 as part of the Alternative 5 evaluation.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

This variation would consist of 31.0 miles of 8G and 31.2 miles of 9K, replacing 32.9 miles of 8G and 33.2 miles of 9K in the comparison portion of these routes. The combined total length (8G plus 9K) would consist of 62.2 miles, which would be 3.9 miles shorter than the comparison portion of Alternative 5. This variation would only

apply to Alternative 5; therefore, the direct and indirect effects of this variation are discussed in Section 3.17.2.4 as part of the Alternative 5 evaluation.

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 MFP	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 (Lands Map 3) and allow an additional major powerline ROW as applicable with laws and values for which the SRBOP NCA was designated. (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. (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)[1/]	x	x	x	x	x	x	x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow additional major transmission line ROWs as applicable with laws and values for which the SRBOP NCA was designated. Allow two additional 500 kV transmission line ROWs to leave the WWE corridor and exit the SRBOP NCA due south of Bruneau Dunes State Park. (SEIS-13)[2/]					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)	x					x	x
	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. (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. (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. (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			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

1/ SEIS-8 would also apply to the Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations.

2/ SEIS-13 would also apply to the Alternative 5 WWE Corridor Variation.

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 270.7 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. Alternative 5 would pass slightly more than 1 mile southwest of the Mud Flat ACEC.

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.

Helicopter-Assisted Construction Variation

The Alternative 5 Helicopter-Assisted Construction Variation would consist of 32.9 miles of 8G and 33.2 miles of 9K, for a combined total length of 66.1 miles. This variation would follow the same alignments as the portions of Alternative 5 it would replace, but would employ helicopter-assisted construction to reduce ground disturbance related to road construction. Construction impacts on land ownership, special land uses, and recreational resources would be very similar. In the operations phase, the transmission line effects on these resources would be the same under the variation and the comparison portion of Alternative 5 with the exception of the access roads, which would be restored following construction.

Land Ownership

The Helicopter-Assisted Construction Variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, cross the same lands as the comparison portion of Alternative 5 (Table 3.17-27).

Table 3.17-27. Miles Crossed by Land Ownership – Alternative 5 Variations

Route/Variation	Total	BLM	NFS	Other[1/]	State	Private
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations[2/]	66.1	58.4	–	–	2.5	5.2
Alternative 5 WWE Corridor Variation[3]	62.2	50.2	–	–	2.4	9.6
Alternative 5 Helicopter-Assisted Construction Variation[2/]	66.1	58.4	–	–	2.5	5.2

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.
2/ This comparison portion and variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, each built adjacent to each-other but approximately 250 feet apart.
3/ This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

Designated Corridors and Existing ROW

The Helicopter-Assisted Construction Variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, be within or adjacent to the same designated corridors and existing ROW as the comparison portion of Alternative 5 (Table 3.17-28).

Table 3.17-28. Miles Within the WWE Corridor or Within or Adjacent to Existing Transmission Corridors

Route/Variation	Within WWE Corridor (Federal ONLY)	Within or adjacent to Existing Transmission Corridor
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations	6.9	2.1
Alternative 5 WWE Corridor Variation	31.9	2.1
Alternative 5 Helicopter-Assisted Construction Variation	6.9	2.1

Specific Land Uses and Recreational Resources

Land Use

The Helicopter-Assisted Construction Variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, cross the same land uses as the comparison portion of Alternative 5 (Table 3.17-29). This variation would also cross and pass within 1,000 feet of the same land use features as the comparison portions of Alternative 5. Both the WWE Corridor Variation and the comparison portion of Alternative 5 would pass within 1,000 feet of 25 residences, 2 of which would be within 300 feet of the proposed transmission line (Table 3.17-30).

Table 3.17-29. Miles Crossed by Land Use – Alternative 5 Variations

Route / Variation	Total	Range-land	Agri-culture	Forest	Water / Wetlands	ROW[1/]	Developed	Other
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations[2/]	66.1	63.2	1.3	--	0.2	0.5	0.0	0.9
Alternative 5 WWE Corridor Variation[3/]	62.2	59.1	1.7	--	0.4	0.9	0.0	0.0
Alternative 5 Helicopter-Assisted Construction Variation[2/]	66.1	63.2	1.3	--	0.2	0.5	0.0	0.9

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.
2/ This comparison portion and variation consists of approximately 32.9 miles of Route 8G and 33.2 miles of Route 9K, each built adjacent to each-other but approximately 250 feet apart.
3/ This variation consists of approximately 31.0 miles of Route 8G and 31.2 miles of Route 9K, each built adjacent to each other but approximately 250 feet apart.

Table 3.17-30. Residences Within 300 and 1,000 feet of the Transmission Lines

Route/Variation	Residences within 1,000 feet	Residences within 300 feet
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations	25	2
Alternative 5 WWE Corridor Variation	37	5
Alternative 5 Helicopter-Assisted Construction Variation	25	2

Special Management Areas

The Helicopter-Assisted Construction Variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, cross the same special management areas as the comparison portion of Alternative 5.

Historic Trails

Neither the comparison portion of Alternative 5 nor the Helicopter-Assisted Construction Variation would cross any historic trails.

OHV Use

The Helicopter-Assisted Construction Variation would follow the same alignments as the portions of Alternative 5 it would replace and would, therefore, have the same potential impacts on OHV use as the comparison portion of Alternative 5. Neither the comparison portion of Alternative 5 nor the Helicopter-Assisted Construction Variation would cross any trails closed to OHV use.

WWE Corridor Variation

The Alternative 5 WWE Corridor Variation would generally follow the WWE Corridor, leaving it briefly near Murphy to avoid impacting a pivot irrigation system. This variation would consist of 31.0 miles of 8G and 31.2 miles of 9K, replacing 32.9 miles of 8G and 33.2 miles of 9K in the comparison portion of these routes. The combined total length

(8G plus 9K) would be 62.2 miles, which would be 3.9 miles shorter than the comparison portion of Alternative 5.

Land Ownership

The two transmission lines in the WWE Corridor Variation would be approximately 3.9 miles shorter than the comparison portion of Alternative 5, crossing 50.2 miles of BLM-managed land, 9.6 miles of private land, and 2.5 miles of state land. This variation would cross 8.2 fewer miles of BLM-managed land, 0.1 mile less of State land, and 4.4 miles more of private lands than the comparison portion of Alternative 5 (Table 3.17-27).

Designated Corridors and Existing ROW

Both the comparison portion of Alternative 5 and the WWE Corridor Variation would be within or adjacent to existing transmission line corridors for 2.1 miles. A much larger share of the WWE Corridor Variation would be within the WWE corridor, with 39 miles of the variation (63 percent) within the corridor compared to just 8.4 miles of the comparison portion of Alternative 5. The majority of the miles of this variation within the WWE corridor would cross federal lands (31.9 miles), with the remaining 7.1 miles crossing other lands. In addition, 4.7 miles of the WWE Corridor Variation would be adjacent to the WWE corridor compared to 11.6 miles of the comparison portion of Alternative 5.

Specific Land Uses and Recreational Resources

Land Use

The WWE Corridor Variation would be 3.9 miles shorter than the comparison portion of Alternative 5. Like the comparison portion of Alternative 5, this variation would mainly be located on rangeland (59.1 miles; 95 percent), with the remainder of the variation crossing agricultural lands (1.7 miles; 2.8 percent), and less than a mile each of existing ROW (1.4 percent) and water and wetlands (0.6 percent).

The WWE Corridor Variation would pass within 1,000 feet of 37 residences, including 5 residences located within 300 feet. The comparison portion of Alternative 5 would pass within 1,000 feet of 25 residences, 2 of which would be within 300 feet of the proposed transmission line (Table 3.17-30).

The variation would cross one center-pivot used for agriculture and pass within about 700 feet of another. The comparison portion of Alternative 5 would not cross or pass within 1,000 feet of any center-pivots. Like the comparison portion, the WWE Corridor Variation would not cross any CAFOs. The variation would pass within about 150 feet of a CAFO, while the comparison portion of Alternative 5 would pass within about 340 feet. Both the comparison portion of Alternative 5 and the WWE Corridor Variation would pass within 1,000 feet of a dam and a clay pit.

Special Management Areas

Both the comparison portion of Alternative 5 and the Alternative 5 WWE Corridor Variation would cross similar amounts of the Black Mountain HMA. Unlike the comparison portion of Alternative 5, this variation would also cross the Owyhee Front SRMA and the SRBOP.

Historic Trails

Neither the comparison portion of Alternative 5 nor the WWE Corridor Variation would cross any historic trails.

OHV Use

The comparison portion of Alternative 5 would cross 54.6 miles of public land where OHV use is limited and 3.8 miles of public land open to OHV use. The Alternative 5 WWE Corridor Variation would cross fewer miles of public land in both categories: 46.7 miles where OHV use is limited and 3.4 miles open to OHV use. Neither the comparison portion of Alternative 5 nor the WWE Corridor Variation would cross any trails closed to OHV use.

Alternative 6 – The 8H Route and FEIS Proposed 9

Alternative 6 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 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 mile 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 Appendix M. 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 Appendix M).

The following measure, which is identified in Appendix M, 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 that contains design features specific to the SRBOP. The Proponents' 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 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).

Land Use

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

There is no need for compensatory mitigation outside the SRBOP. However, as discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features 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.

BLM Compensatory Mitigation

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 the framework plans in the POD, as well as the existing compensatory mitigation plans discussed above in Section 3.17.2.5. The compensatory mitigation plans 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. Appendix K contains the BLM's Compensatory Mitigation Framework.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 that 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 2009a) 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

Table 3.18-1. Grazing Allotments and Leases within the Analysis Area by Segment and Route (continued)

Segment/Route	BLM Allotment (Range)	Grazing Lease
Route 8H – Existing 138-kV Removal	Battle Creek, Bruneau Arm, Chattin Hill, Sunnyside Winter	G600085, G600100, G6152, G6466
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

Table 3.18-1. Grazing Allotments and Leases within the Analysis Area by Segment and Route (continued)

Segment/Route	BLM Allotment (Range)	Grazing Lease
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 Appendix M of this FSEIS. 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 and Variation

This section evaluates the impacts of the Revised Proposed Routes, other routes (FEIS Proposed 9, 8G, 8H, and 9K), and the Route 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).

Variations

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, as well as to Route 9K and FEIS Proposed 9, 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation would use a combination of light, medium, and heavy lift helicopters to transport personnel, equipment, and construction materials. Some equipment would also be transported by conventional methods via temporary roads. The Helicopter-Assisted Construction Variation and the comparison portion of Alternative 5 would affect the same grazing allotments, rangeland, prime farmland, and other farm lands during construction, but because the roads would only be temporary, fewer acres of farmland would be affected by operations under the Helicopter-Assisted Construction Variation. No dairies would be affected by either option.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

The WWE Corridor Variation and the comparison portion of Alternative 5 would affect the same grazing allotments; however, the Alternative 5 WWE Corridor would only affect one grazing lease, G6255. The comparison portion of Alternative 5 would affect G600062, as well as G6255. The WWE Corridor Variation would affect more prime farmland (383 acres compared to 309 acres) and slightly more irrigated farmland (15 acres compared to 12 acres) than the comparison portion of Alternative 5. No dairies would be affected by either option.

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. Refer to Section 3.18.2.3 for a comparison of the four variations and the corresponding alternatives.

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 Appendix M of this FSEIS. The following measure identified in Appendix M 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 Appendix M 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 Appendix M).

Proponent-Proposed MEP

The Proponents have developed an MEP that contains design features specific to the SRBOP. The Proponents' 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 MEP was not designed to mitigate for Project effects on agriculture, which generally occur on non-federal lands. However, the MEP includes the removal of some existing infrastructure, which may impact agricultural lands.

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, restoration, and reconstruction 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

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and Alternative 5 the Helicopter-Assisted Construction and WWE Corridor Variations. 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 that 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 2009a) 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); and
- 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 Appendix M of this FSEIS. 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 land 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 to 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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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 and Variation

Table 3.19-1 lists the number of highways, roads, and railroads crossed by the Revised Proposed Routes, other routes, the Toana Road Variations, and the Alternative 5 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 – 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
Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations	66.1	0	44	0
Alternative 5 WWE Corridor Variation	62.2	0	72	0
Alternative 5 Helicopter-Assisted Construction Variation	66.1	0	44[2/]	0

Source: Esri StreetMap 2002, Esri - Rail (June 2013), Esri - Roads/Streets (June 2013), Project Data - Access Roads, Routes (version 6/10/2016)
1/ Miles are rounded to the nearest tenth of a mile.
2/ Temporary roads

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.

The Segment 8 Revised Proposed Route crosses the railroad on BLM-managed land. The Revised Proposed Route would not parallel the railroad within 300 feet of the railroad track. The Proponents would be responsible for coordinating with the railroad on the crossing.

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. Route 8G would cross an Eastern Idaho Railroad (EIRR) line on private property. The Proponents would be responsible for coordinating with the railroad on the crossing.

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 Route 8H; however, there would be three landing strips within 3 miles, in addition to one 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. Route 8H would cross an Eastern Idaho Railroad (EIRR) line on private property. The Proponents would be responsible for coordinating with the railroad on the crossing.

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. The Segment 9 Revised Proposed Route (as well as FEIS Proposed 9 and Route 9K) would cross a north-south spur line that connects the EIRR near Twin Falls, Idaho, to the Union Pacific line in northeastern Nevada, on private property. The Proponents would be responsible for coordinating with the railroad on the crossing.

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. This route has the same railroad crossing as the Revised Proposed Route in Segment 9.

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. This route has the same railroad crossing as the Revised Proposed Route in Segment 9.

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.8 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

This variation would still use ground-based vehicles and temporary roads, but would also incorporate the use of helicopters for construction of the Project (see Appendix B-2). The main difference between this variation and the proposed construction methods for Alternative 5 is that all Project roads in this area would be reclaimed at a level sufficient to meet underlying land management objectives (i.e., there would be no permanent roads along this variation). The Proponents have estimated that up to 1,600 helicopter flights would be required, for a period of 2 to 3 months in order to construct the Project under this variation.

Alternative 5 WWE Corridor Variation

Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The variation would begin approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor, leaving it briefly near Murphy to avoid impacting a pivot irrigation system. Impacts to transportation would be similar to those described for FEIS Proposed 9. While two lines would be built, the same road

network would be used for both. The variation would cross 72 roads compared to 44 for the comparison portion of Alternative 5. Neither the variation nor the comparison portion of the alternative would cross a railroad (Table 3.19-1). The variation would require less new road construction than the comparison portion of Alternative 5 (23.7 miles versus 34 miles, respectively).

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 Road to be Improved	Miles of New Road to be Constructed
		Within 1 mile	Within 3 miles		
Alternative 1	377 (41[1/])[2/]	1	9 (2[5/])	294.3	210.1
Alternative 2	355 (2[1/])[2/]	4	7 (1[5/])	312.9	222.5
Alternative 3	335 (2[1/])[2/]	2	10 (1[5/])	328.6	253.8
Alternative 4	340 (5[1/])[2/, 3/]	2	7[6/]	305.9	235.3
Alternative 5	320 (5[1/]) [2/, 4/, 7/]	1	6	254.2[7/]	203.6[7/]
Alternative 6	368 (43[1/])[2/, 3/]	3	7[6/]	279.0	189.9
Alternative 7	348 (43[1/])[2/, 3/]	1	8[6/]	300.4	225.4

1/ Additional crossings associated with removal of existing 500-kV and/or 138-kV lines.
2/ Inclusion of the Toana Road Variation 1 would add three 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 routes overlap and may be overestimating impacts for this alternative.
7/ See Table 3.17-3 below for the Alternative 5 Variations.

<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 approximately 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 approximately 210.1 miles of new road construction for Alternative 1.

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 approximately 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).

There would be approximately 222.5 miles of new road construction for Alternative 2, 12.4 miles more than 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).

There would be approximately 253.8 miles of new road construction for Alternative 3, 43.7 miles more than 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 approximately 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.

There would be approximately 235.3 miles of new road construction for Alternative 4, 25.2 miles more than Alternative 1.

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 approximately 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.

There would be approximately 203.6 miles of new road construction for Alternative 5, 6.5 miles less than Alternative 1.

Inclusion of the Toana Road Variations (1 or 1-A) into Alternative 5 would result in three more road crossings than the comparison portion of Route 9K. The WWE Corridor Variation would cross 72 roads compared to 44 for the comparison portion of Alternative 5. Neither the variation nor the comparison portion of the alternative would cross a railroad (Table 3.19-1). The variation would require less new road construction than the comparison portion of Alternative 5 (23.7 miles versus 34 miles, respectively). The Helicopter-Assisted Construction Alternative would use a similar road system as the comparison portion of Alternative 5; however, all roads for the variation would be temporary. Roads were also adjusted to reduce impacts to sage-grouse habitat. Table 3.19-3 compares road construction and road improvements for the Alternative 5 variations the comparison portion of Alternative 5.

Table 3.19-3. Comparison of Impacts to Transportation from the Alternative 5 Variations and the Comparison Portion of the Alternative

Route/Variation	Road Crossings	Miles of Road to be Improved	Miles of New Road to be Constructed
Alternative 5 Comparison Portion	44	56.8	33.4
Helicopter-Assisted Construction Variation	44	50.4	35.2
WWE Corridor Variation	72	49.8	25.9

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 approximately 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 (because 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.

There would be approximately 189.9 miles of new road construction for Alternative 6, 20.2 miles less than Alternative 1.

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 approximately 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.

There would be approximately 225.4 miles of new road construction for Alternative 7, 15.3 miles more than Alternative 1.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, are directly related to transportation and would be applicable to Segments 8 and 9:

TRANS-1 A Final 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. The Final Traffic and Transportation Management 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, without blocking residential traffic.

TRANS-10 Roads negatively affected by construction and as identified by the agencies will be returned to pre-construction condition. The method of preconstruction condition documentation will be coordinated by the Construction Contractor and the applicable jurisdictional agency and/or landowner.

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 when existing maintained (e.g., gravel or asphalt) roads are not available.

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 the Proponents' use in accordance with the ROW grants/special use authorization.

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.

TRANS-16 All temporary culverts and associated fill material will be removed from stream crossings after construction. All permanent culverts will be engineered by the Construction Contractor and approved by the Proponents prior to installation.

TRANS-17 The road or highway within the ROW corridor shall be used to the maximum extent possible for construction and maintenance of the new ROW.

TRANS-18 To help set public expectations for when temporary access roads are decommissioned, signs shall be posted on all temporary roads and overland access routes identifying them as reclamation areas. Signs will state "Restoration in Progress – No Vehicle Traffic Allowed."

TRANS-19 During wet road conditions, any ruts deeper than 4 inches remaining on the roads from the Project will be repaired.

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 that contains design features specific to the SRBOP. The Proponents' 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 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, 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.

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

Summary of Remaining Impacts

After implementation of the EPMs and other design features 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

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

No additional mitigation plans were developed specifically for transportation resources.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 that 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 2009a) 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.

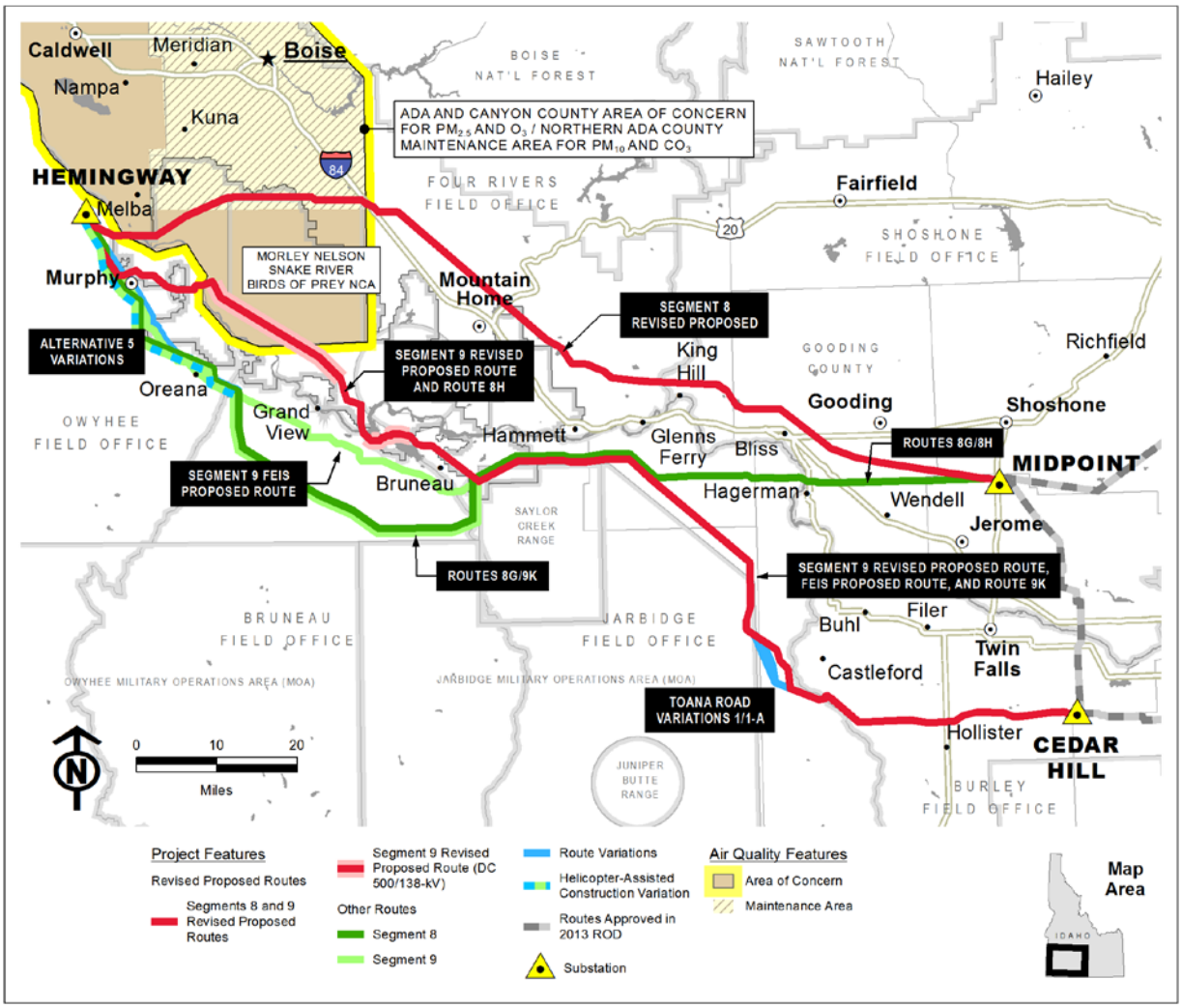

Figure 3.20-1. Nonattainment Areas in Idaho

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 Appendix M of this FSEIS. 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.

<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. 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 Appendix M 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 Appendix M).

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's *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 and Route Variation

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 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. Two additional variations have been proposed for Alternative 5, the Helicopter-Assisted Construction Variation and the WWE Corridor Variation.

The Helicopter-Assisted Construction Variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The variation would use a combination of light, medium, and heavy lift helicopters to transport personnel, equipment, and construction materials. Some equipment would also be transported by conventional methods via temporary roads. The Proponents have not quantified the type and amount of helicopter use beyond stating that a mix of light, medium, and heavy helicopters would be used and approximately 1,600 helicopter trips would be needed. Therefore, the combined construction emissions cannot be quantified for this Variation. Light-lift helicopters such as the Bell 206L4, which could be used to transport personnel, may get approximately 3.6 miles per gallon (mpg; Bell Helicopter n.d.) while a van may get 11 or 12 mpg. A heavy-lift helicopter, such as a 234 Chinook, may get 1.6 mpg (Columbia Helicopters n.d.) while tractor-trailer trucks average 6 mpg (Sharpe and Muncrief 2015). Based on these fuel use ratios, it is likely that helicopter-assisted construction would result in considerably more emissions than conventional construction.

The WWE Corridor Variation also applies only to Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor. Each of the two lines in this variation would be 2 miles shorter than the two lines in the comparison portion of Alternative 5. Therefore, the variation would result in approximately 6 percent fewer emissions of all types than the comparison portion of Alternative 5 (Table 3.20-9).

Table 3.20-9. Comparison of Emissions for the WWE Corridor Variation and the Comparison Portion of Alternative 5

Alternative	~Length miles[1/]	NO_x (tons)	CO (tons)	VOC (tons)	SO_x (tons)	PM_{10} (tons)[1/]	$PM_{2.5}$ (tons)[1/]	CO_2 (tons)
Alternative 5 Comparison	66.1	135.7	58.4	14.6	0.6	39.8	13.2	15,384.8
WWE Corridor Variation	62.2	127.3	55.0	13.8	0.6	37.4	13.4	14,458.0

1/ 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

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 Appendix M. 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 are identified in Appendix M, 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. The Proponents' 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 3.20-10 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 3.20-10 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

Summary of Remaining Impacts

After implementation of the EPMs and other design features 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

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 mitigation plans were developed specifically for air quality.

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; the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations; 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 Appendix M of this FSEIS. 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 and Variation

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.

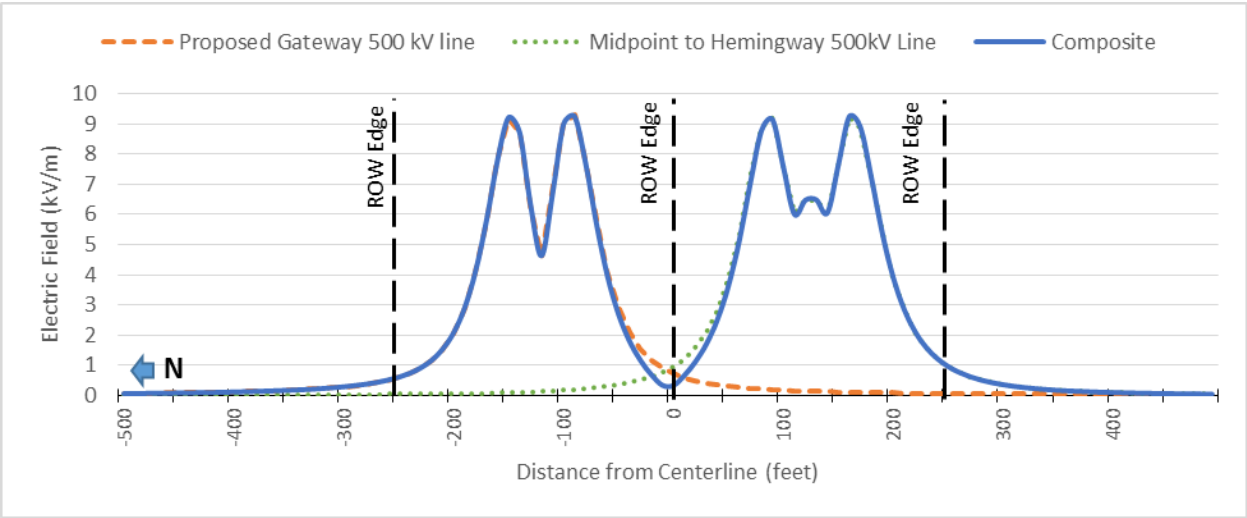

Figure 3.21-1. Electric Field Profiles at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

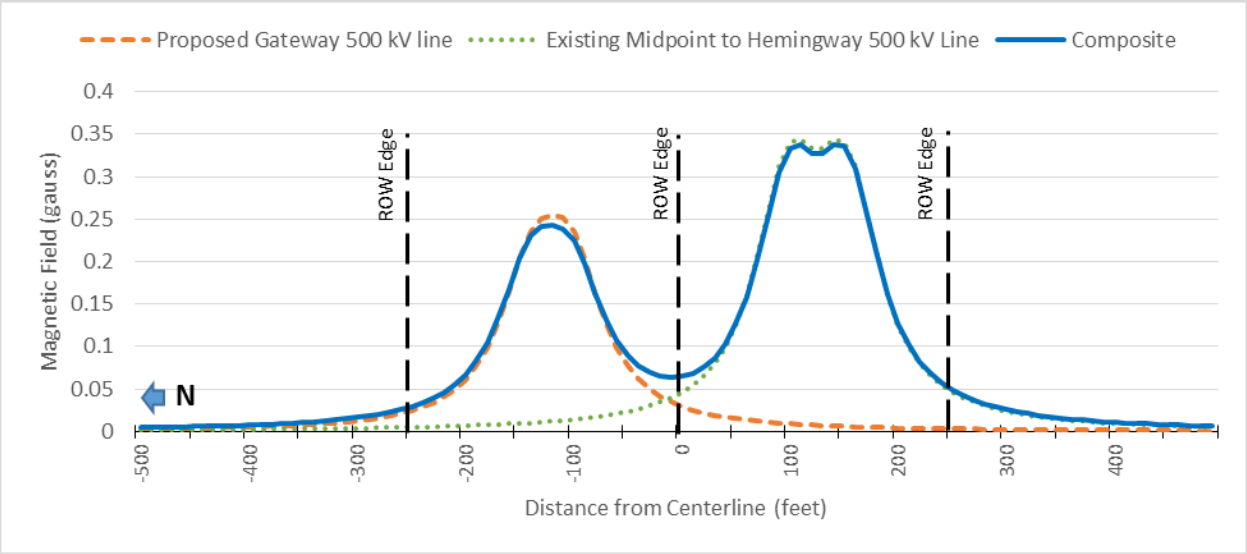

Figure 3.21-2. Magnetic Field Profiles at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

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.

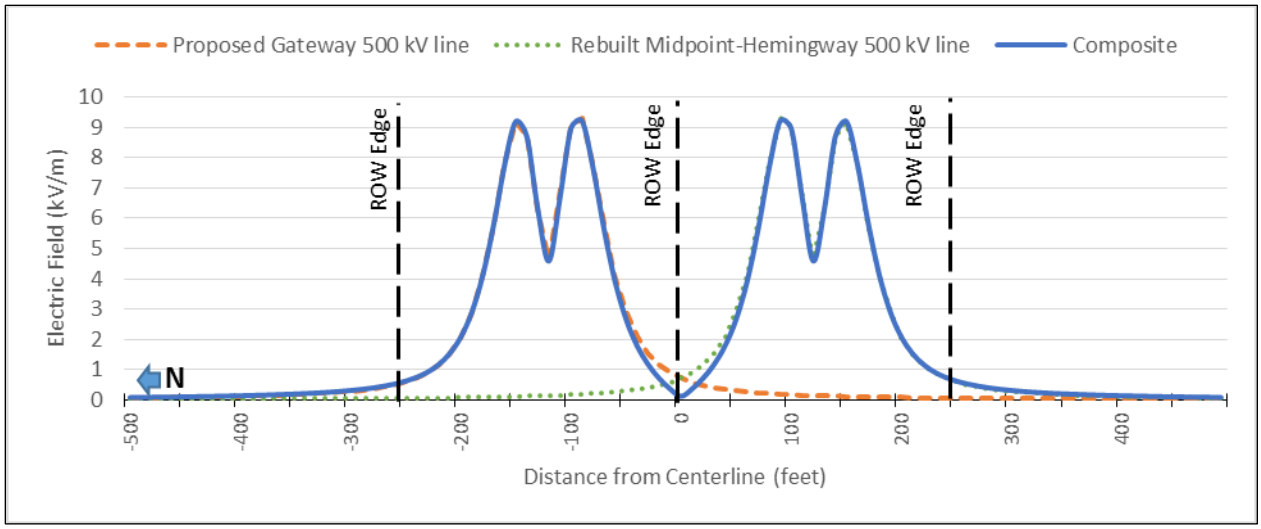

Figure 3.21-3. Electric Field Profiles at Midspan, Route 8G 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

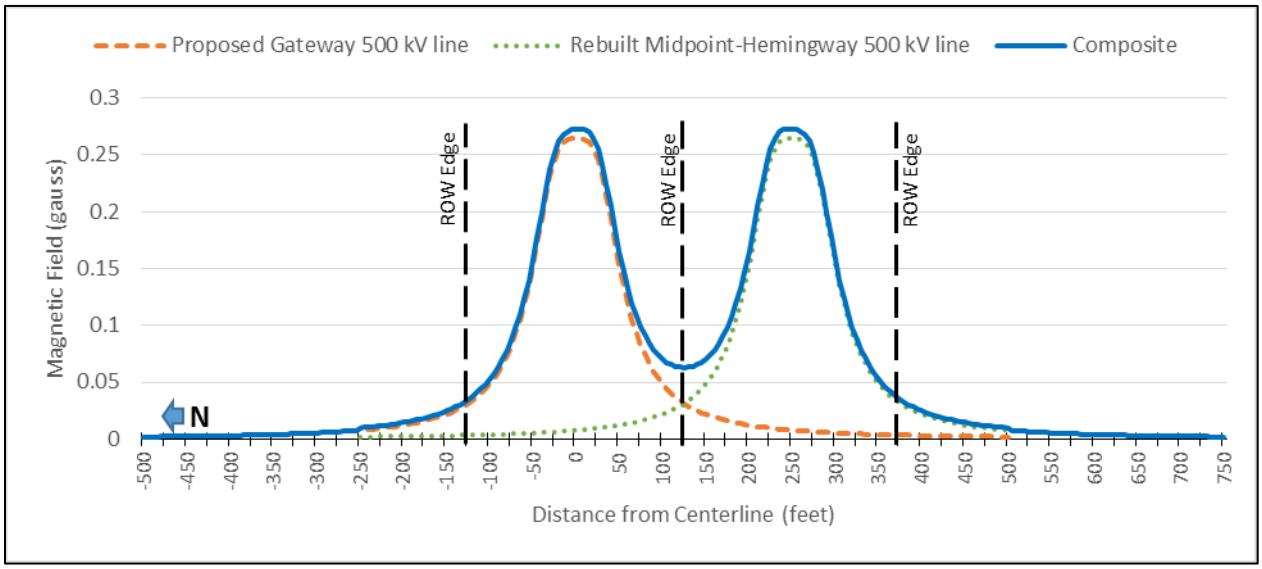

Figure 3.21-4. Magnetic Field Profiles at Midspan, Route 8G 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

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.

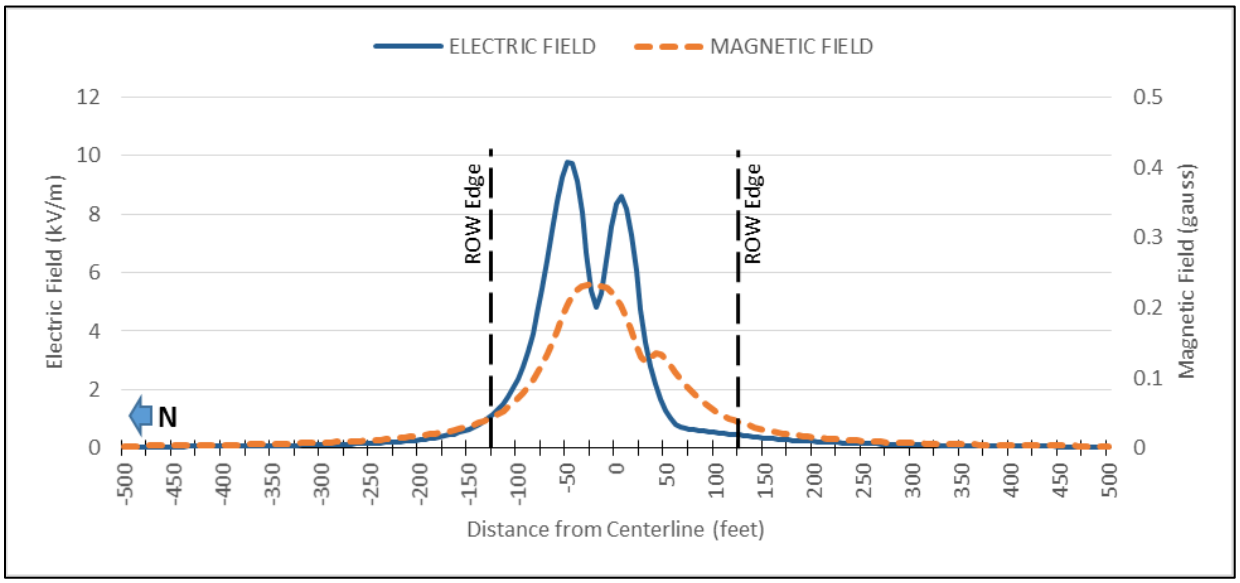

Figure 3.21-5. Electric and Magnetic Field Profiles at Midspan, Route 8H and Segment 9 Revised Proposed Route, Double-Circuit 500/138-kV Section

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.

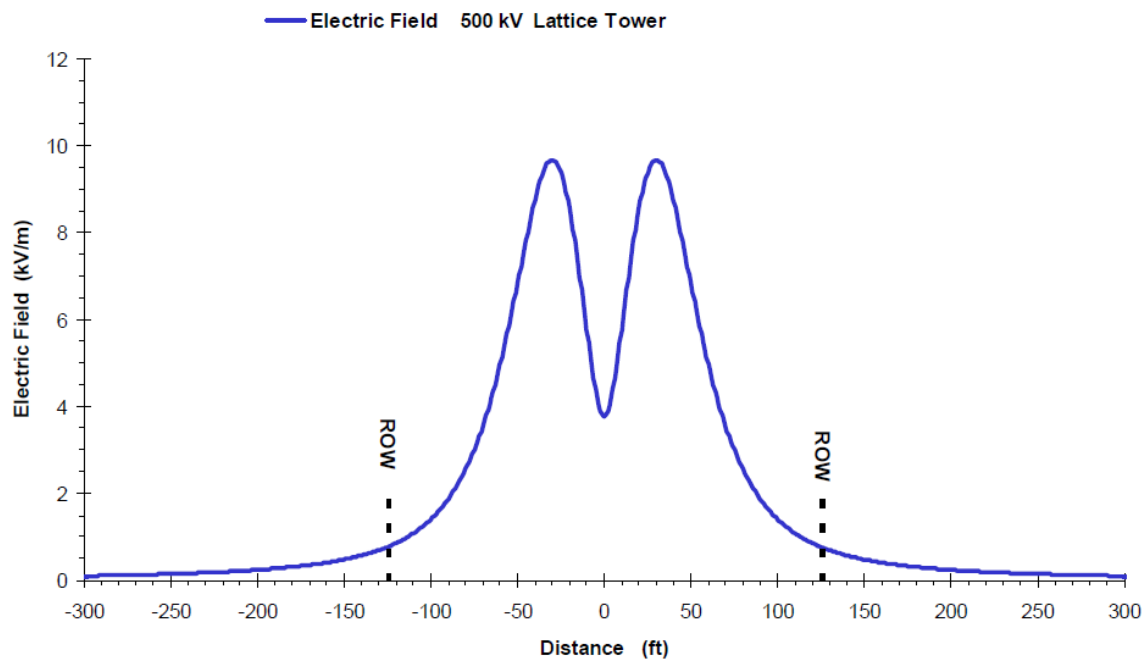

Figure 3.21-6. Electric Field Profiles at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV

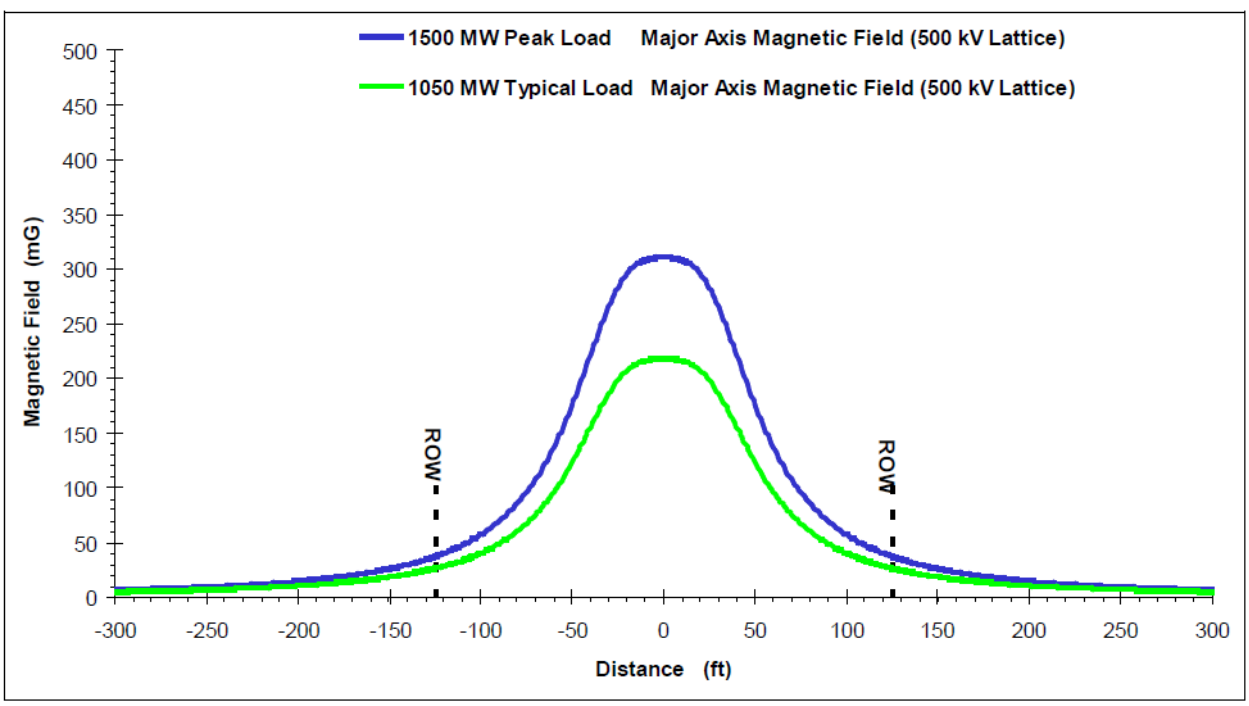

Figure 3.21-7. Magnetic Field Profiles at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV

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.

Variations

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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The Helicopter-Assisted Construction Variation would use a combination of light, medium, and heavy lift helicopters to transport personnel, equipment, and construction materials. Some equipment would also be transported by conventional methods via temporary roads. The tower and line locations would be the same as the comparison portion of Alternative 5; therefore, the effects on the electrical environment would be the same.

Alternative 5 WWE Corridor Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this

variation, the 9K/8G alignment would follow the FEIS 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

The WWE Corridor Variation includes two adjacent transmission lines; together, they would be approximately 3.9 miles shorter than the comparison portion of Alternative 5 but would cross more agricultural areas and other developments, including slightly more irrigated farmland (15 acres compared to 12 acres). No dairies would be affected by either the variation or the comparison portion of Alternative 5. Overall, the effects on the electrical environment would be similar.

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.

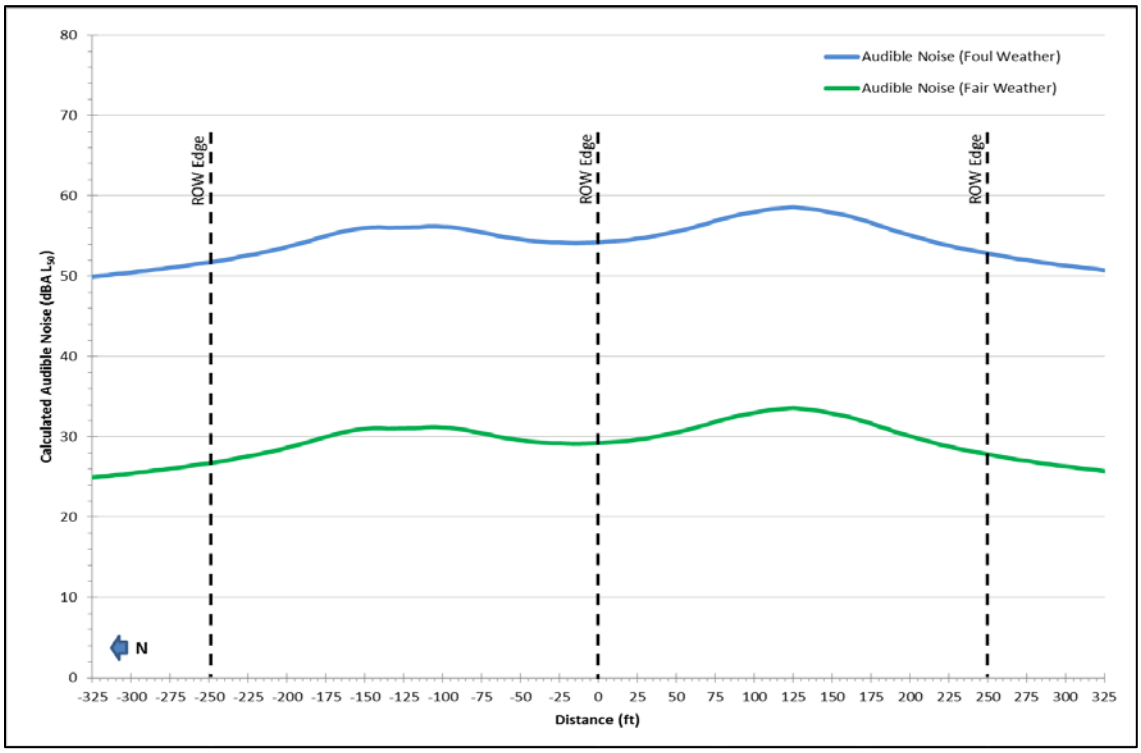

Figure 3.21-8. Audible Noise Profile at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Existing Midpoint – Hemingway 500-kV Line

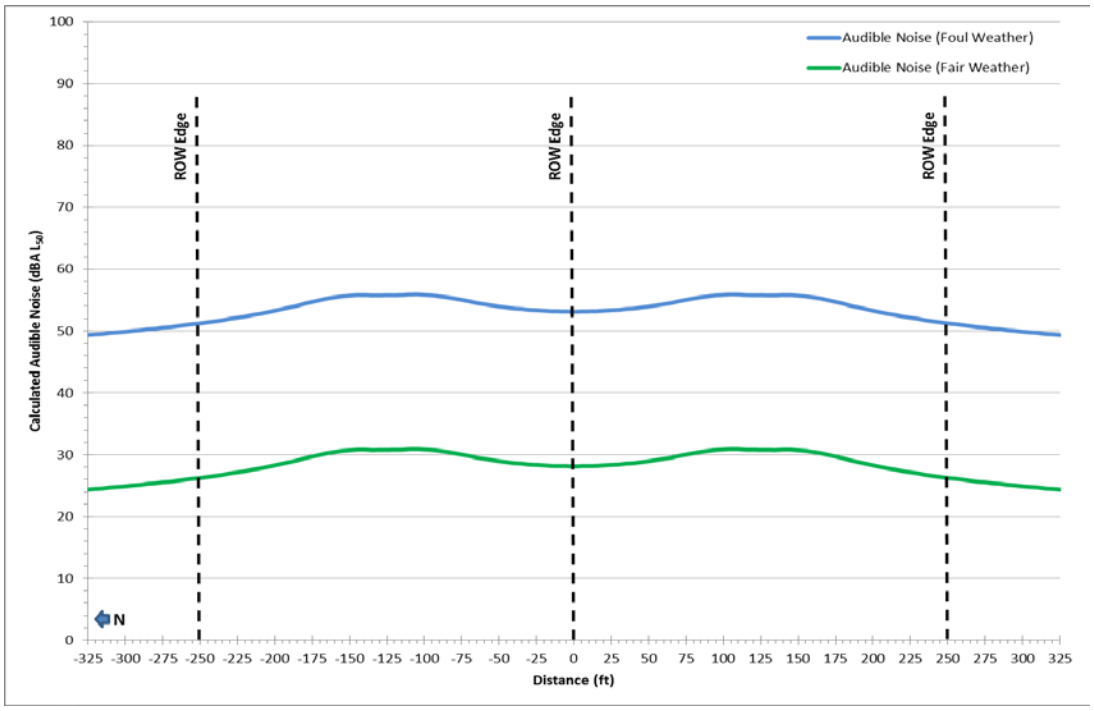

Figure 3.21-9. Audible Noise Profile at Midspan, Segment 8 Revised Proposed Route 500-kV Lattice and Rebuilt Midpoint – Hemingway 500-kV Line

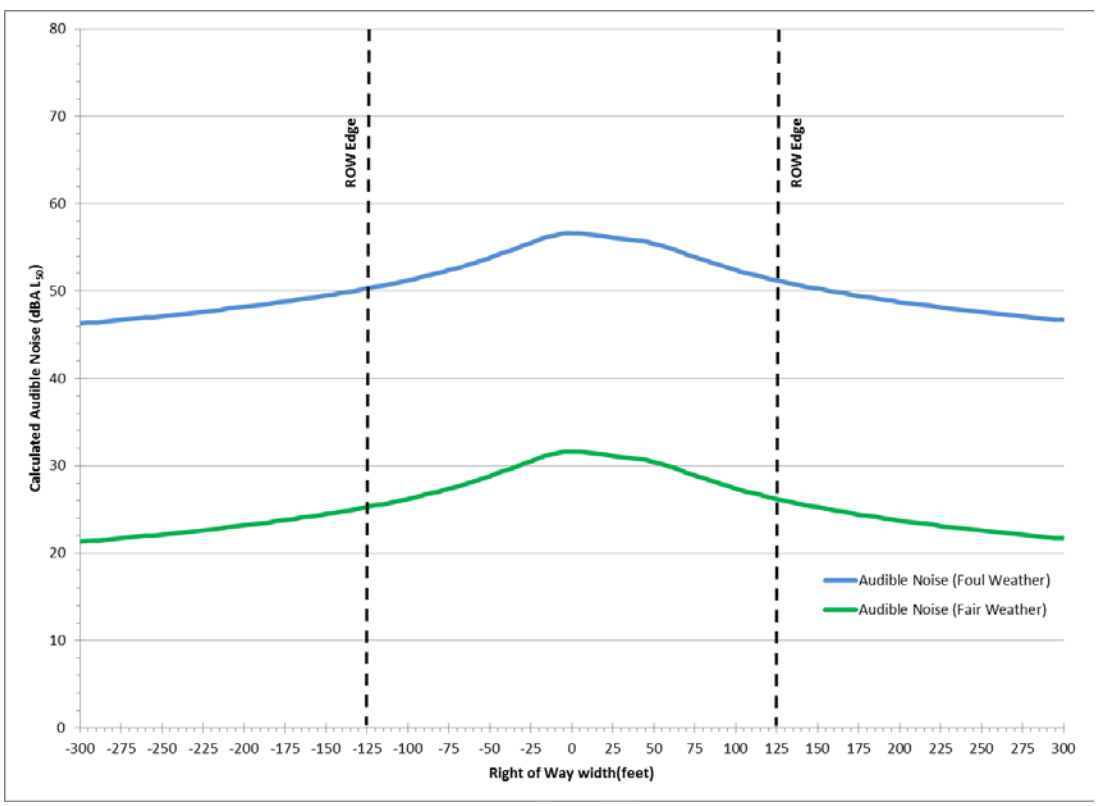

Figure 3.21-10. Audible Noise Profile at Midspan, Route 8H and Segment 9 Revised Proposed Route, Double-Circuit 500/138-kV Section

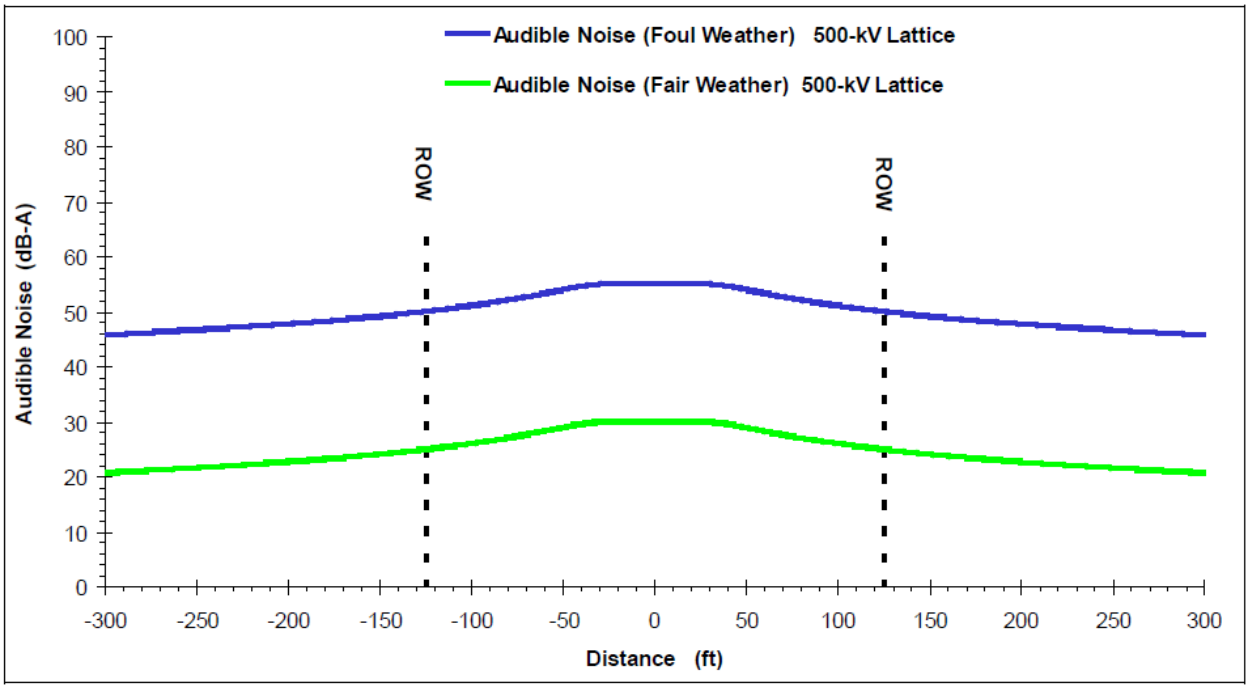

Figure 3.21-11. Audible Noise Profile at Midspan, FEIS Proposed 9 and 9K, Single-Circuit 500-kV Section

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

Table 3.21-4. Audible Noise in Foul and Fair Weather (continued)

Segment	ROW Width (feet)	North/West ROW Edge (dBA)	Maximum within ROW (dBA)	South/East ROW Edge (dBA)
Segment 9 Revised Proposed Route (500/138-kV double circuit) 3/	250	25.5	31.6	26.2
Segment 9 FEIS Proposed Route, Route 9K3/	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.

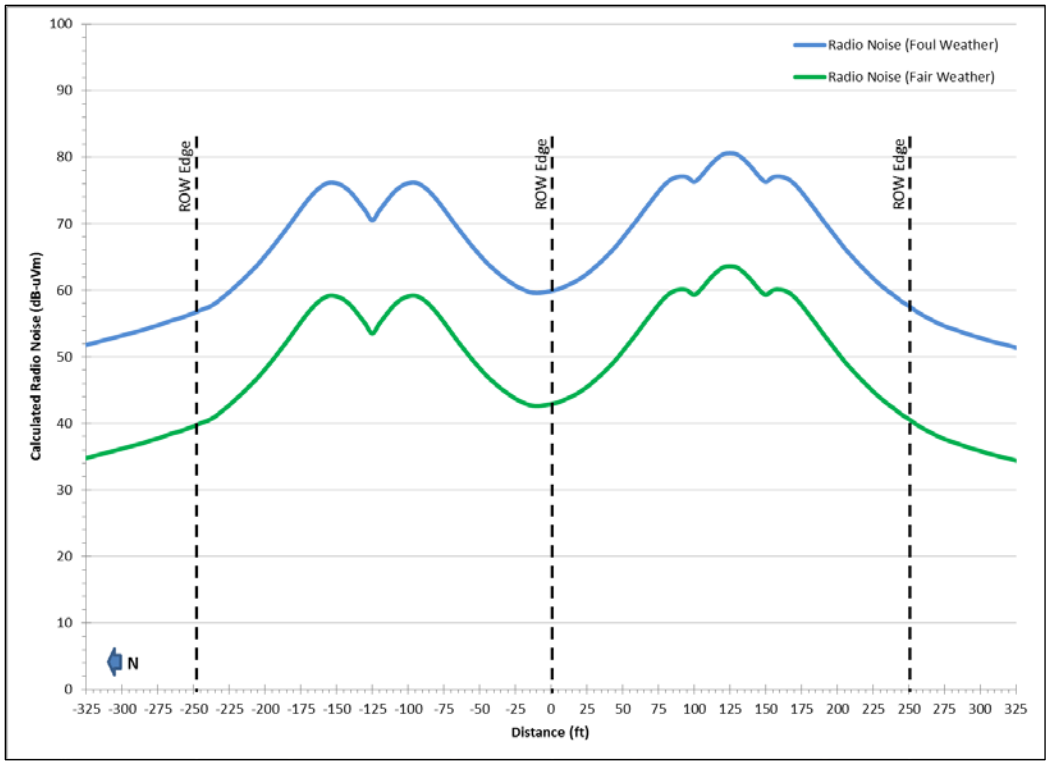

Figure 3.21-12. Radio Noise, Segment 8 Revised Proposed Route 500-kV line and Existing 500-kV Line

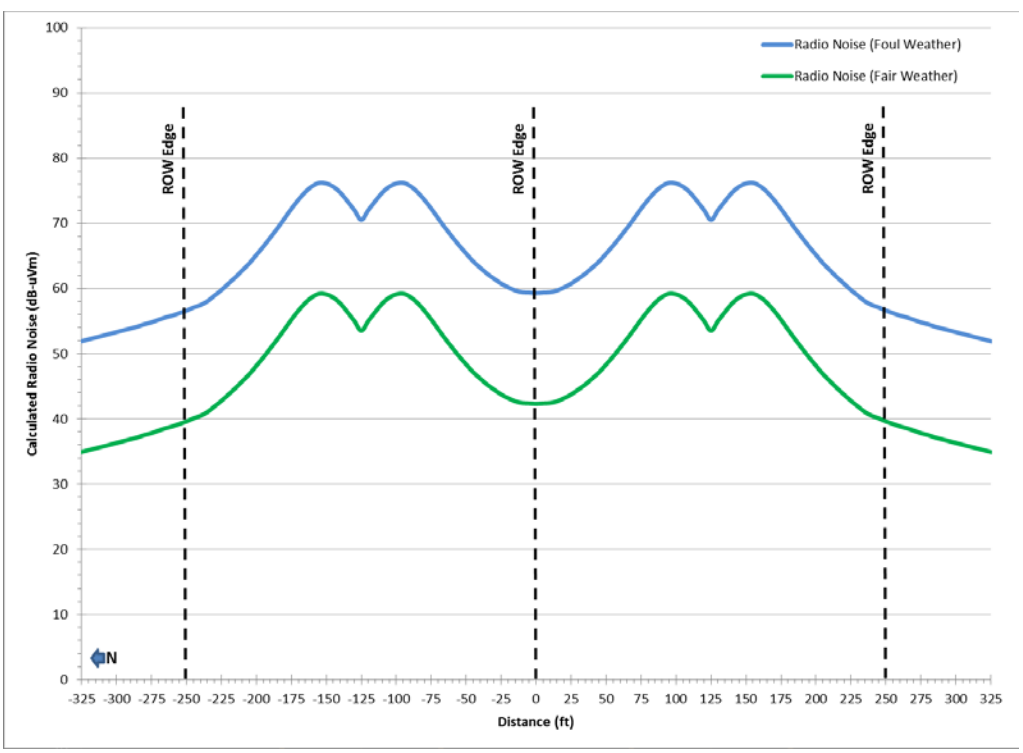

Figure 3.21-13. Radio Noise, Routes 8G and 8H 500-kV line and Existing 500-kV Line

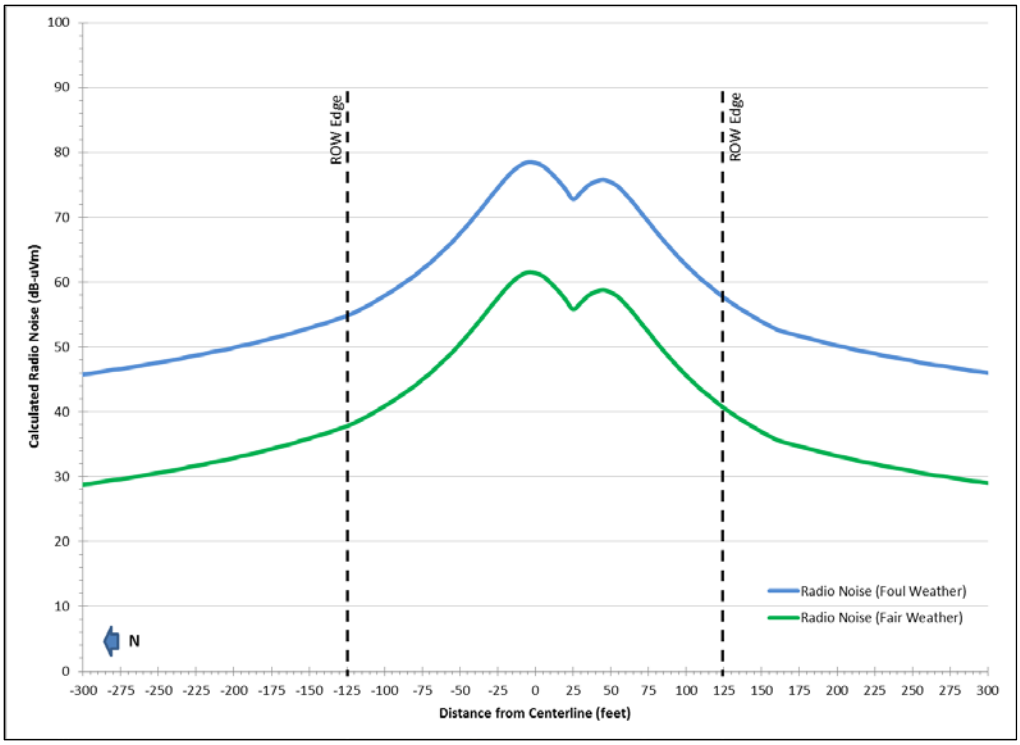

Figure 3.21-14. Radio Noise, Route 8H and Segment 9 Revised Proposed Route Double-Circuit 500-kV/138-kV

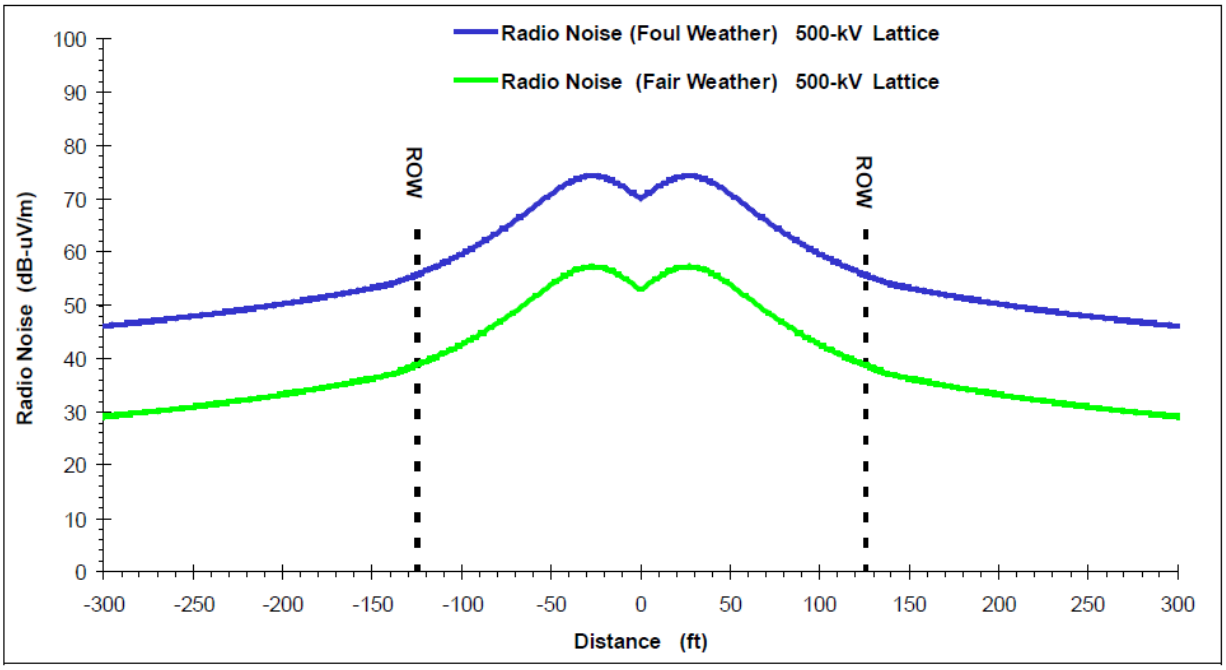

Figure 3.21-15. Radio Noise, FEIS Proposed 9 and 9K Single-Circuit 500-kV

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
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.

Two additional variations are proposed for Alternative 5, the Helicopter-Assisted Construction Variation and the WWE Corridor Variation. No additional effects to the electrical environment are expected for either variation.

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 Appendix M. 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).

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.

The measures EE-1 through EE-3 listed, which are identified in Appendix M, 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. The Proponents' 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, 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.

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

Summary of Remaining Impacts

After implementation of the EPMs and other design features discussed above, some Project-related impacts would likely remain. The impact assessment found in this section incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Section 3.21.2 takes these measures and their impact offsets into consideration.

BLM Compensatory Mitigation

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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.

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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 Appendix M of this FSEIS. The draft MEP submitted by the Proponents is included in Appendix C.

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, the Toana Road Variations and the Alternative 5 WWE Corridor Variation, 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. The Alternative 5 Helicopter-Assisted Construction Variation includes approximately 1,600 helicopter flights. This may increase the risk of a construction accidents due to the increased use of helicopters.

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 and Variation

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 Appendix M of this FSEIS. No measures directly apply to public safety; however, 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 Appendix M). 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, 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.

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

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be 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 other design features discussed above, some Project-related impacts would likely remain. The impact assessment found in this section incorporates the avoidance and minimization contributions of the EPMs in the impact analysis; as a result, Section 3.22.2 takes these measures and their impact offsets into consideration.

BLM Compensatory Mitigation

No additional mitigation measures have been developed specifically for public safety outside the SRBOP.

The BLM may require additional mitigation for some remaining impacts of the Project on environmental resources inside 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 the framework plans in the POD, 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. Appendix K contains the BLM's Compensatory Mitigation Framework. Measures included in Appendix K intended to improve law enforcement and fire protection would contribute to public safety.

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; the Toana Road Variations to the Segment 9 Revised Proposed Route; and the Alternative 5 Helicopter-Assisted Construction and WWE Corridor Variations. 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 study 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.

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Portions of the Project would cross through the SRBOP. The acoustic environment is not one of the environmental resources and values that 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 2009a) 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 were reviewed and, where new data were available, they were 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 Appendix M of this FSEIS. 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 was approved. Amendments that alter land management designations could change future use of those areas. No amendments specific to noise are proposed for the Project, and no noise impacts 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 and Alternative 5 Helicopter-Assisted Construction and WWE Corridor 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. In addition, helicopter use would be a major factor in the Alternative 5 Helicopter-Assisted Construction Variation.

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	–	–	–	–	–	–

Table 3.23-2. Noise Sensitive Areas within Construction Analysis Area of the Revised Proposed Routes, Other Routes, and Toana Road Variations (continued)

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		
8/9	Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations	66.1	–	2	3	18	–	3
	Alternative 5 WWE Corridor Variation	62.2	1	5	6	27	2	6
	Alternative 5 Helicopter-Assisted Construction Variation	66.1	–	2	3	18	–	3

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[2/]
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

Table 3.23-3. Noise Sensitive Areas within the Operations Analysis Area of the Revised Proposed Routes, Other Routes, and Variations (continued)

Segment	Revised Proposed Route, Other Routes, and Variations	Length (Colocated Length)[1/]	NSAs from Centerline of 500-kV ROW[2/]
9 (cont.)	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	--
8/9	Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations - Routes 8 and 9 colocated	66.1 (30.8)	2 (1)
	Alternative 5 WWE Corridor Variation - Routes 8 and 9 colocated	62.2 (28.8)	5 (4)
	Alternative 5 Helicopter-Assisted Construction Variation - Routes 8 and 9 colocated	66.1 (30.8)	2 (1)

1/ Mileages are rounded to nearest tenth of a mile

2/ Number in parentheses equals the number of NSAs within the colocated length of the route.

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 29 NSAs during construction activities (Table 3.23-2) and 3 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 31 NSAs compared to 29 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 27 NSAs compared to 29 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).

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 11 NSAs during construction activities (Table 3.23-2) and 2 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 25 NSAs compared to 11 for the Revised Proposed Route during construction activities (Table 3.23-2) and 5 NSAs during operations compared to 2 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 11 NSAs compared to 11 for the Revised Proposed Route during construction activities (Table 3.23-2) and 2 NSAs during operations, which is the same as the Revised Proposed Route (Table 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, as well as to Route 9K and FEIS Proposed 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 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.

Alternative 5 Helicopter-Assisted Construction Variation

This variation applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. The variation considers helicopter-assisted construction for the 33.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 32.9 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana.

The Helicopter-Assisted Construction Variation could potentially impact 18 NSAs during construction activities (Table 3.23-2) and 2 NSAs during operations (Table 3.23-3), the same as the comparison portion of Alternative.

Alternative 5 WWE Corridor Variation

This variation also applies only to Alternative 5, which considers placing Routes 9K and 8G approximately 250 feet apart along the affected portion of Alternative 5. Under this variation, the 9K/8G alignment would follow the FEIS Proposed 9 route for the 31.2 miles of Route 9K between MP 141.0 and the Hemingway Substation and 31.0 miles of 8G between MP 112.0 and the substation. The beginning of this variation is located approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana. This variation generally follows the WWE Corridor.

The WWE Corridor Variation could potentially impact 27 NSAs during construction activities (Table 3.23-2) and 5 NSAs during operations (Table 3.23-3), more than those affected by the comparison portion of Alternative 5.

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 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		
	Comparison portion for Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations	66.1	66.1 (61.6)	2 (1)
	Alternative 5 WWE Corridor Variation	62.2	62.2 (57.7)	5 (4)
	Alternative 5 Helicopter-Assisted Construction Variation	66.1	66.1 (61.6)	2 (1)
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 has a combined transmission line 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. 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. Two additional variations have been proposed for Alternative 5, the Helicopter-Assisted Construction Variation and the WWE Corridor Variation.

The Helicopter-Assisted Construction Variation would follow the same route as the comparison portion of Alternative 5, both approximately 66.1 miles long. The variation would use a combination of light, medium, and heavy lift helicopters to transport personnel, equipment, and construction materials. Some equipment would also be transported by conventional methods via temporary roads. The Proponents have not quantified the type and amount of helicopter use beyond stating that a mix of light, medium, and heavy helicopters would be used and approximately 1,600 helicopter trips would be needed. Therefore, the change in noise levels associated with this variation cannot be specified. Table 3.23-2 identifies the number of potentially impacted receptors that may exceed the U.S. Department of Transportation and USEPA guidelines for helicopter construction; however, considering the increase in number of helicopters and trips anticipated during construction, reported impacts would likely increase. During operations, there would be a total of two potential impacts along the Helicopter-Assisted Construction Variation. Of those NSAs, one is colocated along both Routes 8G and 9K.

The WWE Corridor Variation would follow the FEIS Proposed 9 route from near Oreana to the Hemingway Substation for approximately 62.2 miles. The variation would be approximately 3.9 miles shorter that the comparison portion of Alternative 5. There would be a total of five potential operational impacts along the WWE Corridor Variation. Of those NSAs, four are colocated along both Routes 8G and 9K.

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 Appendix M. 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 Appendix M).

The following measures, which are identified in Appendix M, 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 that contains design features specific to the SRBOP. The Proponents' 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'

[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.

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.

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, 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.

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

Summary of Remaining Impacts

After implementation of the EPMs and other design features 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.

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

No additional mitigation plans have been developed specifically for noise.

3.24 MORLEY NELSON SNAKE RIVER BIRDS OF PREY NATIONAL CONSERVATION AREA

This section provides a description of the resources and values associated with the SRBOP identified in P.L. 103-64 and discusses the impacts that may result from implementing the Segments 8 and 9 Revised Proposed Routes, FEIS Proposed 9, and Routes 8G, 8H, or 9K. Effects on the resources in the SRBOP are analyzed in the applicable section of this chapter and summarized here. Neither of the two Toana Road Variations would affect the SRBOP. 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). In addition, there are two Variations to Alternative 5, one of which (i.e., the Alternative 5 WWE Corridor Variation) could affect the SRBOP. This section discloses how these would affect the values of that the SRBOP was established to manage and protect.

3.24.1 Affected Environment

The SRBOP is located in southwestern Idaho, within a 30-minute drive of Boise. It includes portions of Ada, Canyon, Elmore, and Owyhee Counties, and encompasses approximately 483,700 public land acres, extending 81 miles along the Snake River. The SRBOP includes the 138,000-acre Orchard Training Area used by the IDARNG for military training since 1953. There are approximately 41,200 state acres, 4,800 privately owned acres, 1,600 military acres, and 9,300 acres covered by water within the NCA boundary (BLM 2008f).

The SRBOP was established in 1993 by P.L. 103-64. Public activities and uses that existed when the legislation was enacted are allowed to continue to the extent that they are compatible with the purposes for which the NCA was established – i.e., to provide for the conservation, protection, and enhancement of raptor (birds of prey) populations and habitats 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.

The SRBOP contains the greatest concentration of nesting raptors in North America. About 700 raptor pairs, representing 16 species, nest in the SRBOP each spring, including golden eagles, burrowing owls, and the greatest density of prairie falcons in the world (BLM 2008f). Eight other raptor species use the area during various seasons. The SRBOP provides a unique habitat for birds of prey because the cliffs of the Snake River Canyon provide ideal nesting sites, while the adjacent upland plateau supports large populations of small mammal prey species. The SRBOP is noted for having one of the highest densities of ground squirrels recorded. The Piute ground squirrel is a critical food source during late winter, spring, and early summer for many of the raptor species, most notably, prairie falcons (BLM 2008f). Since 1979, over 300,000 acres of upland shrub habitat has been lost to fire.

The SRBOP is managed by the BLM under the concept of dominant use rather than multiple uses. This means that prior to authorizing uses, the BLM must determine the compatibility of those uses with the purposes for which the SRBOP was established.

The 2008 SRBOP RMP divided the NCA into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential (see Figure 3.24-1). The 2008 SRBOP RMP described the following conditions:

- *Area 1 encompasses approximately 31 percent of the NCA, and is located in the western portion of the NCA 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). This higher percentage of shrub cover allows Area 1 to support a greater amount of raptor prey base per unit area than can be supported in the other two areas. Raptor populations nesting along the downstream half of the stretch of the Snake River Canyon adjacent to Area 1 tend to be more stable and productive than those that nest along other stretches of the Snake River Canyon in the NCA.*
- *Area 2 comprises 43 percent of the NCA, and encompasses the eastern portion of the NCA and the portion south of the Snake River. The shrub component has been reduced to approximately 34 percent of the overall vegetative cover. Approximately 44 percent of Area 2 has burned. Snake River Canyon segments that support raptor nest sites are also present in Area 2.*
- *Area 3 encompasses the remaining 26 percent of the NCA and is generally located in the center of the NCA, north of the Snake River. Approximately 21 percent, of Area 3 supports shrub cover. Virtually all of Area 3 within the OCTC and about 69 percent of the area outside the OCTA has burned.*

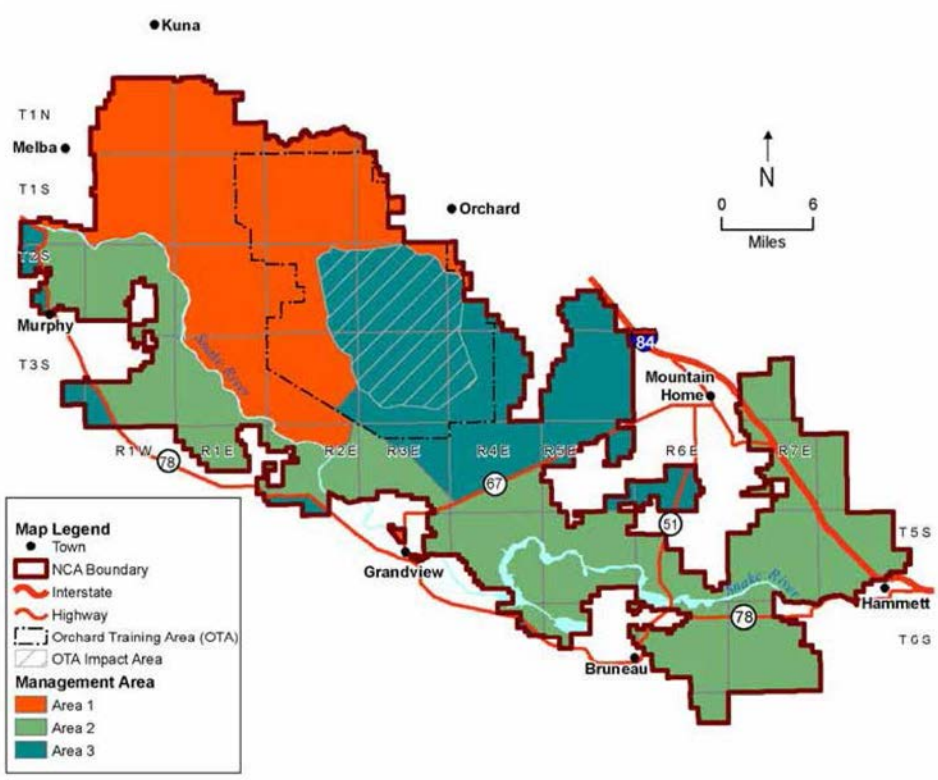

Figure 3.24-1. SRBOP Management Areas

Additional areas have burned since the 2008 RMP. Table D.6-7 in Appendix D lists the fires that have occurred along the Gateway West Project in recent years.

3.24.1.1 Analysis Area

The Analysis Area includes the entire SRBOP, as designated by Congress.

3.24.1.2 Issues Related to the SRBOP

The following issues specific to the SRBOP were identified by the public during public scoping (Tetra Tech 2009), in comments on the EIS, 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 would the Project affect the SRBOP?
- How would the requirements of the enabling legislation for the SRBOP (P.L. 103-64) be implemented?
- Would there be conflicts with the existing management plan?
- What are the long-term effects of transmission lines on raptors?
- How would Native American cultural and religious sites be impacted by the Project?
- How would impacts to the Oregon Trail be avoided?
- How would the BLM protect the visitor experience at the Oregon National Historic Trail?
- Would appropriate mitigation be applied to compensate for impacts to trails and cultural resources if impacts could not be otherwise avoided?
- How would visual resources in the SRBOP be affected?

3.24.1.3 Manual 6220—National Monuments, National Conservation Areas, and Similar Designations

Manual 6220 provides guidance on managing BLM-managed public lands that are components of the BLM's National Landscape Conservation System (NLCS) and that have been designated by Congress or the President as National Monuments, National Conservation Areas, and similar designations. This designation includes the SRBOP. National program policies that are generally applicable to BLM-managed public lands apply to NLCS components to the extent that they are consistent with the designating proclamation or legislation, other applicable law, and BLM policy.

The BLM's objectives in implementing this policy are to:

- Comply with designating Acts of Congress and presidential proclamations by conserving, protecting, and restoring the objects and values for which Monuments and NCAs were designated for the benefit of present and future generations.
- Effectively manage valid existing rights and compatible uses within Monuments and NCAs.

- Manage discretionary uses within Monuments and NCAs to ensure the protection of the objects and values for which the Monuments and NCAs were designated.
- Utilize science, local knowledge, partnerships, and volunteers to effectively manage Monuments and NCAs.
- Provide appropriate recreational opportunities, education, interpretation, and visitor services to enhance the public's understanding and enjoyment of the Monuments and NCAs.

3.24.1.4 Methods

Information sources for the SRBOP used in this analysis included the enabling legislation, the 2008 SRBOP RMP FEIS and ROD, the 2014 RAC Report, scoping comments, public comments on the DSEIS, GIS coverages, route alignment maps, and other maps from various reports and websites of the affected state and local agencies. These analyses provide information to the decision-maker regarding possible effects on the SRBOP values, and are located in the Administrative Record.

3.24.2 Existing Conditions

Upland Habitat/Vegetation

Upland vegetation on the SRBOP is a broad category that has been divided into six specific types by the SRBOP RMP: (1) greasewood, (2) salt desert shrub, (3) winter-fat, (4) big sagebrush, (5) grassland, and (6) rock. The vegetation types presented in this SEIS were based on a detailed remote sensing-based vegetation mapping study conducted specifically for this Project (see Section 3.6.1.4 of the FEIS), and were grouped into types that are applicable Project-wide (which included parts of Wyoming). As a result, the vegetation types addressed in this SEIS differ in some respects from the types defined in the SRBOP RMP. The SRBOP RMP's upland habitat types relate to the vegetation types assessed in this SEIS as follows (see Section 4.6 for more details regarding vegetation types):

- The SRBOP RMP's "salt desert shrub" and "winter-fat" habitat types correspond to the "saltbush" vegetation type assessed in this SEIS.
- The SRBOP RMP's "greasewood" habitat type corresponds to the "greasewood" vegetation type assessed in this SEIS.
- The SRBOP RMP "big sagebrush" habitat type corresponds to the ""sagebrush" vegetation type assessed in this SEIS.
- The SRBOP RMP "grassland" habitat type corresponds to the "native grass" and the "disturbed grassland" vegetation types assessed in this SEIS.
- The SRBOP RMP "big sagebrush" habitat type corresponds to the "sagebrush" vegetation type assessed in this SEIS.
- The SRBOP RMP "rock" habitat type corresponds to the "Misc." vegetation type assessed in this SEIS.

Big sagebrush communities, once the dominant shrub steppe community in the SRBOP, comprised approximately 17 percent of the area at the time the SRBOP was

established. These communities have decreased between 57 and 88 percent between 1979 and 2001 in the different management areas (BLM 2008f). The communities occur in deeper loamy soils throughout the SRBOP; however, the largest contiguous stands occur in the northeast portion of Management Area 1. Sagebrush communities in the remaining areas occur in smaller, isolated patches interspersed with exotic plant communities. Approximately 77 percent of the sagebrush communities have an understory that is dominated by Sandberg bluegrass and/or other native perennial bunchgrasses, including bottlebrush squirreltail and Thurber's needlegrass. Cheatgrass and bur buttercup are usually present in these areas to some degree and may be co-dominants with native species. Biological soil crusts are an important component of these communities. Cheatgrass is the dominant understory grass in the remaining areas. Occasionally, stands of rabbitbrush (approximately 2 percent of the SRBOP), broom snakeweed, and Gardner saltbush occur in these soils.

Winter-fat communities occur on non-alkaline silty soils in lower precipitation zones north and south of the Snake River, and comprise approximately 6 percent of the SRBOP. Winter-fat communities increased in Management Areas 1 and 3 and decreased in Management Area 2 between 1979 and 1998 (BLM 2008f). This community is dominated by winter-fat, with an understory of Sandberg bluegrass and other grasses, and such forbs as larkspur, globemallow, and evening primrose. Occasionally there is a patchy overstory of spiny hop sage.

Salt desert shrub communities occur on alkaline soils in lower precipitation zones north and south of the Snake River and comprise approximately 9 percent of the SRBOP. These communities decreased between 57 and 96 percent from 1979 to 1998 in the different Management Areas (BLM 2008f). Salt desert shrub communities are dominated by shadscale, with varying amounts of bud sagebrush, spiny hop sage, and other shrubs. Perennial bunchgrasses and several species of forbs form the understory. Common forbs include globemallow, larkspur, evening primrose, and hairy wild cabbage.

Native-perennial/exotic-annual grass dominated communities comprise approximately 6 percent of the SRBOP, occurring most extensively in the northwest portion of Management Area 3 and in scattered locations in the other man-agement areas. These communities are co-dominated by Sandberg bluegrass and cheatgrass and occur on a variety of soils. They are primarily the result of wildfires in shrub communities that had relatively intact Sandberg bluegrass understories.

Condition and Trends

Cheatgrass and other exotic plant dominated communities comprise more than a quarter of the SRBOP. These communities have increased between 195 percent and 440 percent from 1979 to 2001 in the different management areas (BLM 2008f). The communities occur throughout the SRBOP on a variety of soil types and are generally associated with areas where wildfire and/or other disturbances have eliminated shrubs and perennial grasses. An additional 3 percent of the SRBOP, primarily in the south-west portion, is classified as bare ground.

Shrub communities where cheatgrass dominates the understory, or communities that are adjacent to cheatgrass-dominated communities, are highly susceptible to being eliminated by wildfire (as cheatgrass can increase the rate and severity of fires). Sandberg bluegrass is somewhat resistant to wildfire because it becomes dormant relatively early in the year. However, repeated wildfires in these community types could potentially reduce or eliminate Sandberg bluegrass where inadequate ground cover results in soil loss (primarily by wind erosion) and lowered site productivity.

Perennial grasses are most susceptible to livestock grazing during their critical growth period in the spring. The critical growth period varies by species and may extend throughout the growing period for some species, such as Sandberg bluegrass. Vigor and productivity decrease and species can be eliminated in areas that receive concentrated use or continual growing season use without rest or deferment. During periods of low cheatgrass production, native shrub and grass communities may receive greater use levels than are appropriate for maintaining these communities. Increased forage consumption negatively alters the nutrient, energy, and hydrologic cycles. Mechanical damage of sagebrush (crushing/breaking) may occur in areas where livestock are concentrated, such as salt grounds, watering sites, or areas where livestock are gathered and sorted.

Native communities are most susceptible to mechanical damage because their native biological soil crusts have not yet been compromised. Activities such as livestock trampling and off-road recreational and military vehicle activity compact soils, destroy soil structure, and damage and/or destroy vegetation. The elimination of vegetative cover allows invasive exotic species, especially noxious weeds, to become established. The agents causing the damage are often the vectors for noxious species.

Raptors

A unique assemblage of raptors lives in the Snake River Canyon and adjacent lands of southwestern Idaho. This raptor aggregation, generally believed to be one of the densest in the world, is one of the reason for the SRBOP's designation (BLM 2008f). Raptors are relatively scarce animals, even under the best conditions, because they exist at the top of the food chain where the amount of energy available will support only small populations. Species with a small population size can be at risk of extinction. Thus, anything that reduces the already small populations of raptors is especially critical to their survival (BLM 2008f).

The first scientific studies of raptors in what is now the SRBOP were conducted in the mid-1960s (Hickman 1968), soon followed by Beecham (1970), Kochert (1972), and Ogden (1973, unpublished data). The BLM began research to investigate the ecology of raptors and their prey in 1972. The BLM, USGS biologists, and researchers from various universities and other entities have continued that effort to the present.

This high concentration of raptors exists because of the co-occurrence of two factors critical to their survival. One is that suitable nest sites are abundant in cavities, cracks, and ledges in the fractured basalt and eroded sandstone that make up the walls of the Snake River Canyon, numerous side canyons, and buttes that arise in the Snake River plain. Some of the cliffs are up to 500 feet high. Still other nest sites are located in

trees, on the ground, and underground. The second factor is the fertile, fine- and medium-textured loess soils that support grasses, forbs, and shrubs, which in turn sustain many small mammals, birds, reptiles, and invertebrates. These animal populations, especially Piute ground squirrels and black-tailed jackrabbits, are prey for the raptors. Thus, the co-occurrence of abundant nesting sites and food supplies is the chief factor explaining why so many raptors occur in the SRBOP (BLM 2008f).

There are 25 raptor species that use the SRBOP during some portion of their life cycles (BLM 2008f). Sixteen species nest in the SRBOP, and the remaining 9 pass through during migration or in winter. Prairie falcons, golden eagles, red-tailed hawks, northern harriers, and American kestrels are the most common diurnal species. Several owl species are also common, including the barn owl, great horned owl, long-eared owl, and burrowing owl. Of the 16 nesting raptor species, 10 are year-round residents. Winter visitors include the bald eagle, rough-legged hawk, sharp-shinned hawk, and Cooper's hawk.

Raptors use diverse habitats in the SRBOP, nesting in three distinct zones: the cliffs, the uplands above the Snake River Canyon, and the riparian areas adjacent to the Snake River. Riparian habitats are limited, occurring in narrow bands along the Snake and Bruneau Rivers and several small streams. Isolated, small riparian areas also occur at seeps, springs, and intermittent streams. Trees in riparian areas are important nesting and roosting habitat for several raptors and provide hunting habitat for some, including species found there only in the winter. Long-eared owls, northern harriers, western screech-owls, and saw-whet owls are some of the raptor species that nest in riparian areas of the SRBOP. Because many native trees have been replaced by invasive species, like tamarisk and Russian olive that provide less valuable roosting and nesting habitat, numerous nest boxes have been erected and are used by western screech-owls and northern saw-whet owls (BLM 2008f).

Condition and Trends

The best-studied raptor species in the SRBOP are the prairie falcon and golden eagle. Long-term monitoring has provided important insights about the status of both species, and as such, they are important barometers of habitat conditions. In addition, studies during the 1990s gathered information about the effects of fire and military activity on species that nest on the uplands above the Snake River Canyon.

Prairie falcon productivity has shown wide swings since the fires of the early 1980s, with productivity possibly on a downward trajectory (BLM 2008f). Lower and more variable falcon productivity may reflect population changes of their main prey species. Ground squirrel abundance fluctuates more in disturbed grasslands dominated by exotic plant species, and the proportion of the SRBOP comprising these disturbed grassland habitats has increased markedly over the past 20 to 30 years. Droughts have also resulted in lower ground squirrel densities. Drought and climatic changes may be affecting ground squirrel chronology and abundance, which may, in turn, be affecting falcon productivity (Kochert and Steenhof 2004 in BLM 2008f).

Golden eagles are opportunistic predators and prey on a variety of animals. In the SRBOP, eagle productivity is closely associated with the black-tailed jackrabbit

population cycle. Good jackrabbit habitat is an important component of good eagle habitat in the SRBOP. Other important eagle prey in the SRBOP includes Nuttall's cottontail, ring-necked pheasant, yellow-bellied marmot, and Piute ground squirrel.

The number of golden eagle pairs showed a slight but significant negative trend between 1971 and 2004, but the decline has not been continuous. The number of nesting pairs remained relatively stable— between 34 and 35—from 1971 to 1976. The number of pairs decreased to 29 pairs between 1977 and 1979 and remained stable from 1979 to 2004, ranging between 29 and 32 (Kochert and Steenhof 2005: 5). In 2004, 29 pairs of eagles nested in the SRBOP. However, productivity of golden eagle pairs did not show a negative trend (Kochert and Steenhof 2005). Although the total number of young fledged per year varied considerably, the amplitude of the variation has dampened since 1993, fluctuating around the long-term mean for the population. The major decline in productivity during the mid-1980s was associated with catastrophic wildfires that occurred primarily between 1981 and 1985 (Kochert et al. 1999: 17), however, additional large scale fires have occurred in the area as well which could have an effect of wildlife populations (see Table D.6-7 in Appendix D). At about the same time, black-tailed jackrabbits, the eagles' main prey, experienced a cyclic decline in numbers (Steenhof et al. 1997: 350). Wildfires may have accentuated the severity of the rabbit decline in the 1980s, and rabbit numbers are not reaching the highs they once did. The total number of young eagles fledged annually has remained relatively stable since the late 1990s. Data suggest that the less productive territories have become vacant, and that the remaining core of pairs continues to be productive (Kochert and Steenhof 2005: 7). Radio telemetry studies showed that eagles use burned habitats less than expected in relation to their abundance; they avoid grass habitats (Marzluff et al. 1997: 687). Eagles appear to have compensated for the loss of shrub habitat by expanding their ranges, using alternative habitats, and preying less on jackrabbits and more on alternate prey (Marzluff et al. 1997; Kochert et al. 1999).

Other Upland Wildlife

Pheasants, California quail, chukar, gray partridge, and mourning doves are found in the SRBOP. Pheasants and quail are usually found near irrigated agriculture and riparian areas. Gray partridge are found in uplands near irri-gated or dry land agriculture. Pheasants and quail nest in the Ted Trueblood Wildlife Management Area, Borden Lake, Bruneau Duck Pond areas, and other riparian/marsh areas. Chukar are found along the canyon and near volcanic buttes in areas with rocky escape terrain and cheatgrass (Ehrlich et al. 1988: 266). Mourning dove nests are found from tree branches to the ground. Seeds, including waste grain, provide most of their diet. Nuttall's cottontail rabbits are a common mammal and a Key Raptor Prey Species. Although the SRBOP historically supported sage-grouse, the area has long been isolated from other sage-grouse habitat.

Various big-game species occur on the SRBOP. There are over 100 resident mule deer in the SRBOP. White-tailed deer were introduced into the C.J. Strike WMA in the 1980s; they are found in the Bruneau River bottoms in and near the WMA. Pronghorn are found throughout the SRBOP; however, their distribution is limited by a lack of water

and poor rangeland conditions in the area. There are an estimated 50 resident pronghorn in the SRBOP[1]. Elk are rare winter visitors to the SRBOP. During harsh winter conditions a few elk may come into the SRBOP from the north and east; however, it is unlikely that a resident elk population would ever become established in the SRBOP. In addition, mountain lion and moose have occasionally been seen in and near the SRBOP.

Condition and Trends

Agricultural, commercial, and residential developments, highways, utility corridors, burned areas, and areas that have been unsuccessfully rehabilitated currently isolate the SRBOP from other potential sage-grouse habitats. Also, perennial and intermittent streams that once flowed across the SRBOP have been captured by reservoirs outside of the SRBOP, and thus, except for the Snake River, there is little or no surface water in the SRBOP. Furthermore, the SRBOP supports recreation, military, and other uses that would preclude re-establishment of sage-grouse into the area, even if suitable habitat could be re-established. As such, there is little if any expectation that sage-grouse could be returned to the SRBOP, and it has not been identified as a priority sage-grouse management area.

The loss of shrubs, native grasses, and forbs has greatly reduced habitat available for big game species as well. Most of the SRBOP's ephemeral streams were captured by construction of the Indian Creek, Blacks Creek, and Mountain Home Reservoirs; as such, available range for big game, especially deer and pronghorn, has been significantly reduced. Many range habitats are dominated by cheatgrass or other invasive weedy species that lack the nutrition of native grasses and forbs for herbivorous big game species.

Cultural Resources

Cultural resources include archaeological, historical, and architectural properties, as well as traditional cultural properties that are notable for their traditional, cultural, and religious values deemed important to American Indian Tribes and others. Tribal resources are described here as elements that support the customs and cultures of the local Tribes, such as ethno-botanical plants and spiritually important sites.

The Shoshone-Bannock Tribes of the Fort Hall Reservation and the Shoshone-Paiute Tribes of the Duck Valley Reservation continue to maintain an active interest in the SRBOP. Individual tribal members use public lands to gather plants or other natural materials, hunt, fish, and conduct religious activities. The Shoshone-Bannock and Shoshone-Paiute nations continue to make connections to their past and create new cultural and religious sites within the SRBOP. The Tribes and the BLM routinely consult in government-to-government meetings to discuss proposed projects and their possible impacts to tribal resources. BLM management of natural resources must recognize and reflect an understanding of Native American Indian rights and interests and the

[1] During the warm months, pronghorn are found near irrigated agriculture, where there is water and green feed available. During the cold months, they are found across the table lands, especially where preferred kochia is available as forage.

importance of Native American Indian treaty rights and accompanying federal government trust responsibilities.

The SRBOP was used in the historic period by fur trappers, emigrants on the Oregon Trail, gold miners, ranchers, and homesteaders. The most common type of historic cultural resources, from the 19th century and the early part of the 20th century, include cattle and sheep camps, homesteads, mining camp remnants, town sites, miners' cabins, mine tailings and debris, stone monuments, ditches, depressions, and graves. Other historic period sites include transportation road networks, trails, ferry crossings, irrigation ditches, and historic trash dumps or scatters. Historical overviews and summaries may be found in cultural resource reports and books (Wyatt 1985, 1990; Plew 2001).

The SRBOP includes an archaeological district that covers approximately 26,300 acres of public land extending along the Snake River Canyon from Guffey Bridge to Grandview and conforms to the original Birds of Prey Natural Area boundary, which was established in 1971. To provide additional protection against potential ground-disturbing activities, such as mineral development and irrigated farming, the archaeological district was designated as an ACEC in 1984 (BLM 2008f). The district was listed on the NRHP in 1978 to protect over 200 known prehistoric sites in the area.

The South Alternate of the Oregon Trail, which roughly parallels the south side of the Snake River Canyon through the SRBOP, is designated as a SRMA and is managed under the 1984 Oregon Trail Management Plan.

Portions of the Oregon Trail and the archaeological district are in VRM Class I, which minimizes the authorization of surface-disturbing activities.

Other cultural resources include:

- Early cabin architecture at Wees Bar and Cabin Draw;
- The ferry crossings at Crane Falls, Halls, and Dorsey;
- Segments of the Oregon Trail; and
- Petroglyphs at Wees Bar and Celebration Park.

Since only a small percentage of the SRBOP has been surveyed for cultural resources, the NCA could potentially contain undiscovered but significant cultural sites that would require protection and management.

Condition and Trend

The condition and trend of cultural resources varies considerably due to the diversity of ter-rain, geomorphology, access, ground visibility, and past and current land use patterns. Ar-tifacts, features, and/or structures are easily disturbed by wind and water erosion, animal intrusion, natural deterioration, and human activities. An example of this is the braided roads and trails created by off-road vehicle use in the Snake River Canyon, which, in some instances have impacted cultural sites. Some of these impacts have been mitigated by the improvement of a major road leading downstream from Swan Falls Dam. During this process, braided trails were physically closed with boulders and reseeded with native shrubs and perennial grasses. Although most users

stay on the improved road because it is in the best condition, the BLM cannot legally require users to stay off other roads or trails until they are officially closed through a route designation process. Route designation will occur following issuance of the RMP ROD or through area closures under the RMP.

Selected cultural sites in the OCTC have been annually monitored since 1989 by the BLM and IDARNG, and a few sites outside the OCTC have also been proactively monitored over the years. Based on limited monitoring, site form documentation, and other information, cultural site condition trend throughout the SRBOP is considered to be downward. This downward trend is based on the natural effects of erosion, deterioration and decay. Active vandalism and illegal artifact collecting (unauthorized digging and "pot hunting") has been observed in limited instances, but is not considered a major problem (BLM 2008f).

Impacts caused by dispersed activities such as grazing and recreation have affected certain site locations. Natural deterioration and decay of standing structures at historic mining and homesteading sites is also a concern.

Recreation and Visitor Use

The NCA enabling statute states that "…the secretary may provide for visitor use of the public lands in the conservation area to such extent and in such manner as the Secretary considers consistent with the protection of raptors and raptor habitat, public safety, and the purposes for which the conservation area is established."

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 internet at: http://www.blm.gov/id/st/en/prog/NLCS/MNSRBP_NM.html.

Distinct differences exist in the location, amount and type of recreation use in the SRBOP. These differences result from 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). Currently, the western third of the SRBOP (Management Area 1) and the C.J. Strike Reservoir area (Management Area 2) receive most of the recreational use. Because the SRBOP can be accessed by over 50 roads or trails, it is extremely difficult to get reliable estimates of visitor use throughout the area. However, our best estimates to date set average annual recreational visitor use for the SRBOP at around 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. The SRBOP has participated in visitor use surveys to comply with the Government Performance and Results Act. These surveys were developed to measure the degree to which the BLM is providing a quality recreation experience and providing for fair value in recreation.

Recreational uses on the Snake River Plain are predominately dispersed activities such as bird watching, camping, off-highway vehicle use, recreational shooting, wildlife viewing, geocaching, and horse-back riding. The Snake River Canyon provides

opportunities for activities such as bird watching, camping, fishing, float and power boating, hiking, mountain biking, horseback riding, waterfowl hunting, and parasailing.

Recreation use occurs year–round with visitor use being highest in the spring and early summer months and lowest during winter months. Over the past 10 years, as the population of the Treasure Valley has increased, use during the summer and fall has also increased. Table 3.24-1 lists common recreation types, estimated use levels, and economic value.

Table 3.24-1. Recreation Type within the SRBOP and Estimated Economic Value

Recreation Type	Estimated Annual Total User Days per Activity[1/]	Average Economic Value per User Day (2016 $)[2/]	Estimated Value (2016 $000) [3/]
Camping	8,203	$24.06	$197.4
Fishing	8,203	$73.67	$604.3
Hunting	241	$84.09	$20.3
Sightseeing	11,340	$37.75	$428.1
Picnicking	7,479	$21.42	$160.2
Hiking/walking	11,098	$57.70	$640.4
Swimming	4,102	$31.84	$130.6
Motorized boating	6,032	$33.53	$202.3
Non-motorized boating/rafting	1,206	$130.60	$157.5
Horseback riding	500	$24.12	$12.1
Bicycling	965	$57.00	$55.0
Motorized recreation vehicles	1,206	$48.50	$58.5
Education and interpretation	3,378	$21.37	$72.2
Bird watching/wildlife viewing	12,546	$75.03	$941.3
Annual Total Value (in 2016 Dollars)	**76,499**	**–**	**$3,680.0**

1/ Total annual visitor days on the NCA were estimated using BLM RMIS data (2015) and allocated by recreation type/activity based on a 2006 user survey of visitors to the NCA (University of Idaho 2006).
2/ Average economic values per user day are based on values compiled by Rosenberger (2010), adjusted for inflation. These values represent net willingness-to-pay or consumer surplus for recreational access to the identified activities. Consumer surplus represents the difference between the price actually paid for recreation access and the maximum amount a participant would be willing to pay.
3/ Total estimated values are presented in thousands of 2016 dollars.
Sources: Rosenberger 2010; University of Idaho 2006

The BLM estimates there are approximately 1,500 horseback visits per year in the NCA (which equates to approximately 500 visitor use days). Horseback riding includes individual rides and organized events, such as equestrian endurance rides. Event riders in equestrian endurance rides test their horse's strength and stamina in a 50-mile ride while stopping periodically at a veterinary check station that evaluates each animal's health and determines whether or not the animal is fit enough to continue. There are approximately two equestrian endurance rides per year that cross the NCA (Homan 2016). Each event hosts approximately 20 to 40 riders. The staging/start/finish area is located on private property within Oreana.

Special Recreation Management Areas

The 1996 Management Plan designated the entire SRBOP as a SRMA. However, when the NCA was first designated, it covered portions of four field offices that already had existing SRMAs. This resulted in overlapping SRMA designations.

Snake River Birds of Prey National Conservation Area SRMA

This SRMA encompasses the entire SRBOP (483,700 acres) and was designated in 1996 for the following primary values: (1) wildlife, (2) education, (3) recreation, and (4) scientific study. Overall management objectives are to preserve the high-quality scenic, recreational, wildlife, and cultural values and to enhance opportunities for high-quality outdoor recreation experiences, environmental education, and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed for semi-primitive non-motorized, semi-primitive motorized, and roaded natural recreation opportunities and experiences. Improved recreation sites within the SRMA include Cove Recreation Site, Dedication Point, and Rabbit Creek Trailhead. 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 2015a). In addition to these improved sites, the following areas receive a significant amount of recreational use: Kuna Butte, Kuna Cave, Initial Point, Crater Rings, Halverson Bar, Halverson Lake, and Trueblood Wildlife Management Area.

Snake River Birds of Prey SRMA

This SRMA includes 50,100 acres located west of Castle Creek and north of State Highway 78. The SRMA was designated in December 1999 in the Owyhee RMP for wildlife and recreation values; however, due to recent administrative boundary changes, the SRMA is now located wholly within the SRBOP and Four Rivers Field Office. Overall management objectives are to preserve the outstandingly remarkable and high-quality wildlife and scenic values and to enhance opportunities for high-quality environmental education and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed for semi-primitive motorized and roaded natural recreation opportunities and experiences. Rabbit Creek Trailhead is the only improved recreation site in the SRMA.

Oregon Trail SRMA

This 3,300-acre SRMA is located north and west of Castle Creek, and was designated in 1999 as part of the Owyhee RMP primarily for its historic and cultural value. As with the above Snake River Birds of Prey SRMA, the Oregon Trail SRMA was originally located in the Owyhee Field Office, but due to recent administrative boundary changes, the SRMA is now located wholly within the SRBOP and Four Rivers Field Office. Overall management objectives are to preserve the outstandingly remarkable and high-quality historic, cultural and scenic values and to enhance opportunities for environmental education and scientific studies while maintaining the integrity of the area's natural environment and cultural resources. The SRMA is managed for semi-primitive non-motorized recreation opportunities and experiences. There are no developed recreation sites in the Oregon Trail SRMA.

Owyhee Front SRMA

A small portion (6,300 acres) of the Owyhee Front SRMA is located within the SRBOP boundary, west of Highway 78 near Murphy and near Sinker Creek. The SRMA was designated in 1999 in the Owyhee RMP primarily for recreation values (USDI 1999). Overall management objectives are to preserve the high-quality recreational values and to enhance opportunities for high-quality outdoor recreation experiences. The SRMA is managed for semi-primitive motorized and roaded natural recreation opportunities and experiences. The only developed recreation site in the Owyhee Front SRMA is the Rabbit Creek Trailhead.

C.J. Strike Reservoir SRMA

This 5,500-acre SRMA is located around the perimeter of C.J. Strike Reservoir. The SRMA was designated in the 1983 Bruneau MFP for its recreation and wildlife values. Overall management objectives are to preserve the high-quality scenic, recreational, and wildlife values and to enhance opportunities for high-quality outdoor recreation experiences while maintaining the integrity of the area's natural systems and cultural resources. The SRMA is managed for semi-primitive motorized and roaded natural recreation opportunities and experiences.

Compatibility of Recreational Activities with the Purposes of the SRBOP

In 2003, under a BLM contract, the Environmental Assessment Division of Argonne National Laboratory evaluated the effects of activities occurring in the OCTC (Argonne National Laboratory 2004). The report states that:

> *Recreational shooting may result in lead poisoning of raptors feeding on prey injured by shooting and containing lead shot. Because recreational shooting of ground squirrels coincides with the nesting period for the prairie falcon, lead-shot contaminated prey fed to young may also affect nesting survival or fledgling success. However, currently the level of lead shot in injured or killed prey, the degree to which raptors may be feeding on injured prey, and the level of lead exposure that raptors (adult and young) may be receiving are unknown.*

The report also stated that:

> *fires started by recreational visitors (by smoking, careless use of camp-fires, or contact of dry vegetation with hot engine parts) may have ecologically significant adverse effects on native vegetation on the site. Recreational visitors have relatively open access to much of the quality sagebrush habitat on the OCTC. Sagebrush is especially vulnerable to the effects of fires and may be irreversi-bly impacted as a result of fire.*

When the SRBOP was designated, portions of the area were covered under five different land use plans, with varying management direction on vehicle access. The 1996 SRBOP Management Plan declared the SRBOP a Designated Vehicle Management Area, designating about 1,300 acres as "closed" to motorized vehicle use. This non-motorized area is located along the north side of the Snake River Canyon, and extends from the Ada/Canyon County line upstream to near the USGS gaging station.

The area encompasses all of Halverson Bar and contains more than 15 miles of trails for non-motorized uses, such as horseback riding, hiking, and mountain biking. Since the designation of this non-motorized area, equestrian use in the Celebration Park and

Halverson Bar area has steadily increased. There are currently no designated parking or trailhead facilities to accommodate equestrian use. The Ted Trueblood Wildlife Management Area and Gold Isle are also closed to motor vehicles.

The SRBOP Management Plan does not provide for off-road, cross-country vehicle travel. In 2003, under a BLM contract, the Environmental Assessment Division of Argonne National Laboratory evaluated the effects of activities occurring in the OCTA (Argonne National Laboratory 2004). This report stated in part, that cross-country (off-road) vehicle travel in native shrub communities is incompatible with the purposes for which the SRBOP was established.

Because of the potential safety hazards associated with live firing activity and unexploded ordnance, the 53,000-acre Impact Area of the OCTA is closed year-round to public access.

Social and Economic Conditions

The SRBOP sits within a four-county region consisting of Ada, Canyon, Elmore, and Owyhee Counties (Table 3.24-2). Boise is the largest and most influential city in the region from a social and economic perspective. Kuna and Mountain Home, considered to be gateway communities to the SRBOP, provide the nearest source for infrastructure needs. Because activities within the SRBOP have the potential to affect all of these counties, the socioeconomic study area for this assessment has been defined as these four counties.

Table 3.24-2. Public Land in the SRBOP by County

County	BLM Acres in SRBOP	Percentage of SRBOP
Ada	22,600	46
Canyon	600	Trace
Elmore	155,300	32
Owyhee	105,200	22
Total	**483,700**	**100**

Source: BLM 2008a

In the past decade, population growth for the U.S. has centered on the West and South. The State of Idaho ranked 5th in percentage increase between 1990 and 2000 and continues to increase at a fast pace. From 2000 to 2014, the population of Idaho increased by 26 percent, twice the national average increase of 13 percent (Table 3.4-3). Ada and Canyon Counties increased at faster rates, with respective increases of 42 percent and 55 percent over this period. Population growth in Owyhee County was similar to the state average from 1990 to 2000, but has been much slower in recent years, increasing by 7 percent from 2000 to 2014 (Table 3.4-3 in Section 3.4).

Although many traditional cultural patterns (i.e., ranching, farming, and a rural lifestyle) persist in the communities of Owyhee County, external forces related to population growth and shifts in regional economic bases have brought new and rapid changes to the county in the past decade. Some previous research has found that while well-being and quality of life may be affected significantly from rapid social change, small rural western communities, like those found in Owyhee County, often do not experience lasting social disruption (Smith et al. 2001; Hunter et al. 2002). For many local people

in Owyhee County, things such as neighbors, land-use policy, and sources of environmental impact are not the same as in recent memory.

The SRBOP includes the 138,000-acre OCTC used by the IDARNG for training since 1953. A recent study evaluated the regional economic impact of IDARNG operations at the OCTC and Gowen Field on a three-county area comprising 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. IDARNG 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 IDARNG 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 IDARNG (Gardner et al. 2012).

Recreation use in the SRBOP contributes approximately $3,668,000 annually (Table 3.24-1).

Geologic Resources

The SRBOP is located in the western Snake River Plain physiographic province. The western Snake River Plain is a northwest trending, fault-bounded structural depression about 35 miles wide that extends from the Twin Falls area on the southeast to Hells Canyon on the northwest. The surface consists primarily of Quaternary basalt flows underlain by Tertiary fluvial and lacustrine sediments over 1,000 feet thick. In the SRBOP, the Snake River has cut a deep canyon in the lake deposits. The basalts have repeatedly filled the canyon over the past 100,000 years and subsequently been eroded by the Snake River forming a new canyon. The Snake River Canyon is the predominant surface feature in the SRBOP and provides an important nesting habitat for the raptor populations that inhabit the area. There are no mineral leases in the SRBOP and the area is closed to leasable mineral entry and disposal.

Paleontological resources are the fossilized remains of organisms that illustrate the biologic history of the earth. Fossils are preserved in sedimentary rocks and even igneous rocks in a few unique situations. Fossils can be the remains of plants or animals, or can reflect their actions, such as tracksites. Some fossils are microscopic in size such as single-celled animals or pollen. Macroscopic fossils can include leaves, petrified wood, shells of invertebrate animals, bones, teeth, tracks, feeding traces, coprolites, and burrows.

Fossilized remains of fish, amphibians, birds, and land mammals are found at widely scattered sites. Invertebrate animal fossils such as mollusks and plant remains in the form of petrified wood also occur. The Miocene Chalk Hills Formation and the Mio-Pliocene Glenns Ferry Formation contain most of the fossils. These sedimentary formations are the result of deposition into and around the margins of a large lake,

referred to by some researches as Lake Idaho, which existed in the western Snake River Plain for several million years. The thickness of the lake sediments in places exceeds five thousand ft. Fossils of land mammals and birds occur in these same formations in sediments that were deposited on the lake margins and in the channels and floodplains of streams that fed into the lake. The diversity of the fossil fish and mollusk fauna, the size of individual fossil specimens, and the nature of specializations in the fossil fish indicate that the Chalk Hills and Glenns Ferry Formations must have been deposited in a large, long-lived lake. Fossils have also been found in the Pleistocene Bruneau Formation that mantles the lake deposits over much of the SRBOP and is composed of numerous basalt flows and interbedded sediments.

Collection of fossils from public lands is allowed with some restrictions, depending on the significance of the fossils. Collection of significant fossils, which includes all vertebrate and any designated plant or invertebrate fossils, can only be done by qualified researchers under BLM permit.

3.24.3 Direct and Indirect Effects

This section presents effects to the SRBOP from construction, operation, and decommissioning of the Segments 8 and 9 Revised Proposed Routes and Routes 8G, 8H, FEIS Proposed 9, and 9K. This is followed by an assessment for effects associated with the seven Alternatives identified by the BLM, including Alternative 5 (WWE Corridor Variation).

A comprehensive list of all Project design features and EPMs, as well as the land ownership to which they apply, can be found in Appendix M of this FSEIS. 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 BLM-managed land within the SRBOP where the Project would not be consistent with the RMP. 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. Plan amendments that could directly impact the SRBOP include:

- building a transmission line outside of a designated corridor (affects all alternatives),
- building a transmission line within 0.5 mile of occupied sensitive plant habitat affects all alternatives),
- building a transmission line in areas classified as VRM II (affects Alternatives 1, 6, and 7),
- crossing the Snake River Canyon SRMA and the C.J. Strike SRMA (affects Alternatives 1, 6, and 7), and
- building a transmission line in an area closed to motor vehicles, Cove Non-motorized Area (affects Alternatives 1, 6, and 7).

See Table 3.24-8 in Section 3.24.2.4 for additional details.

3.24.3.1 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. The RMP would not be amended to allow for the construction of this Project. No project-related impacts to SRBOP values or 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 from other projects, including new or improved facilities 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.

3.24.3.2 Effects Common to All Routes

Construction and Operations

The general impacts that would occur from construction, operations, and decommissioning of the Gateway West Project were analyzed in detail within Chapter 3 of the FEIS. The assessment of quantitative impacts specifically related the Revised Proposed Routes, as well as other routes (8G, 8H, FEIS Proposed 9, and 9K), are presented in the applicable sections of Chapter 3 of this SEIS. The assessment of potential impacts related to the proposed mitigation measures in the MEP and measures that would be recommended by the BLM related to impacts on the SRBOP is also presented in these sections.

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.

3.24.3.3 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.

Approximately 25.1 miles of the Revised Proposed Route would be within the SRBOP, 17.6 miles of which would be on BLM-managed land. The Revised Proposed Route for Segment 8 would follow a system of existing transmission lines for most of its length within the SRBOP.

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, to be within 0.5 mile of sensitive plant habitat.

Upland Habitat/Vegetation

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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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, for sage-grouse would be impacted on BLM-administered lands on the SRBOP by the Revised Proposed Route for Segment 8 during construction. No PHMA, SFA, or PPH (which are the sage-grouse 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 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury, and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to

predators (due to a reduction in cover). Impacts to small mammals would not differ appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

No big game ranges within the SRBOP would be impacted by the Segment 8 Revised Proposed Route.

Cultural Resources/NHTs

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 0.25 mile to 0.5 mile from the district for a distance of 1 mile. Beyond this 1-mile area, the corridor turns northeast, where it continues to extend away from the district at distances exceeding 1 mile.

Table 3.24-3 lists the prehistoric and historic resources within the SRBOP by type that would be impacted by the Revised Proposed Routes for Segments 8 and 9 and Routes 8G, 8H, FEIS Proposed 9, and 9K. A total of 58 sites would be impacted by the Segment 8 Revised Proposed Route, 18 of which are prehistoric.

Table 3.24-3. Comparison of Impacts to Cultural Resources within the SRBOP by Route[1/]

Route	Prehistoric Resources					Historic Resources						Totals
	Open Camp	Rock Feature	Sheltered Camp	Rock Image	Limited Activity	Historic Trails	Agricultural / Animal Husbandry	Energy Development	Transportation	Water Works	Historic Sites	
Revised Proposed 8	15	5	0	0	3	5	2	0	7	3	18	**58**
8G	0	0	0	0	3	0	1	0	0	1	8	**13**
8H	2	9	6	0	12	3	2	1	0	1	35	**71**
Revised Proposed 9	2	9	6	0	12	3	2	1	0	1	25	**61**
FEIS Proposed 9	3	0	0	0	0	0	1	0	0	1	12	**17**
9K	0	0	0	0	3	0	1	0	0	1	8	**13**

1/ Prehistoric resources totals do not include isolated artifacts; Historic resources include isolated historic artifacts under the Historic Sites category.

NHT

The Segment 8 Revised Proposed Route would have little impact to the resources, values, qualities, and settings of the Oregon NHT within the SRBOP (see Section 3.1.2.3).

Recreation

The Segment 8 Revised Proposed Route would cross approximately 25.1 miles of the SRBOP including 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 in Section 3.17). 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. Recreation activities, especially in the northern portions of the SRBOP, would be limited during construction activities. The visual impact to recreational users is evaluated in Section 3.2 – Visual Resources.

Geologic Resources

The Segment 8 Revised Proposed Route would cross areas with a low risk of earthquake hazard and landslide hazard within the SRBOP.

Streams

No perennial streams would be crossed on the SRBOP along the Segment 8 Revised Proposed 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 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.

Approximately 9.9 miles of the Route 8G would be within the SRBOP, 8.8 miles of which would be on BLM-managed land. Route 8G would not follow existing transmission lines within the SRBOP.

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.

Upland Habitat/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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to predators (due to a reduction in cover). Impacts to small mammals would not differ

appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

Approximately 9 acres of pronghorn winter range in the SRBOP would be impacted by Route 8G. No other big game ranges would be impacted by this route within the SRBOP.

Cultural Resources/NHTs

A total of 13 sites would be impacted by Route 8G, 3 of which are prehistoric (Table 3.24-3). Route 8G would not impact the Oregon NHT within the SRBOP.

Recreation

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 in Section 3.17). Unlike the Revised Proposed Route, Route 8G does not cross the Owyhee Front SRMA or Snake River Canyon SRMA (Table 3.17-11 in Section 3.17). The 1.9 miles of existing 500-kV line that would be removed as part of Route 8G are not located in the SRBOP.

Geologic Resources

Route 8G would cross areas with a low risk of earthquake hazard (Table D.14-1 in Appendix D) and landslide hazard (Table D.14-3).

Streams

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.

Approximately 60.8 miles of Route 8H would be within the SRBOP, 52.4 miles of which would be on BLM-managed land. Route 8H would be double-circuited on new structures with the existing 138-kV line for most of the route within the SRBOP.

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, to be within 0.5 mile of occupied sensitive plant habitat, for crossing SRMAs, and changing VRM classes.

Upland Habitat/Vegetation

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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to predators (due to a reduction in cover). Impacts to small mammals would not differ appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

Approximately 20 acres of pronghorn winter range and 23 acres of bighorn sheep habitat within the SRBOP would be impacted by Route 8H. No other big game ranges within the SRBOP would be impacted by this route.

Cultural Resources/NHTs

A total of 71 sites would be impacted by Route 8H, 29 of which are prehistoric (Table 3.24-3). Route 8H would have six Adverse Impacts on the Oregon NHT within the SRBOP (see Section 3.1.2.3).

Recreation

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). Route 8H would cross the C.J. Strike SRMA.

The majority of the existing 138-kV line that would be removed as part of Route 8H would be within the SRBOP, including parts of the C.J. Strike and Oregon NHT SRMAs (Table 3.17-14).

On the SRBOP, 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.

Geologic Resources

Route 8H would cross areas with a low risk of earthquake hazard (Table D.14-1 in Appendix D) and landslide hazard (Table D.14-3 in Appendix D).

Streams

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.

Approximately 60.8 miles of the Segment 9 Revised Proposed Route would be within the SRBOP, 52.4 miles of which would be on BLM-managed land. The Revised Proposed Route would be double-circuited on new structures with the existing 138-kV line for most of the route within the SRBOP.

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.

Upland Habitat/Vegetation

A total of 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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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 (Tables D.11-11, D.11-14, and D.11-15 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to predators (due to a reduction in cover). Impacts to small mammals would not differ appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

Approximately 20 acres of pronghorn winter range and 23 acres of bighorn sheep habitat within the SRBOP would be impacted by Route 8H. No other big game ranges within the SRBOP would be impacted by this route.

Cultural Resources/NHTs

A total of 61 sites would be impacted by the Segment 9 Revised Proposed Route, 29 of which are prehistoric (Table 3.24-2). The Segment 9 Revised Proposed Route would have nine adverse impacts within the SRBOP, see Section 3.1.2.3.

Recreation

The Revised Proposed Route would cross approximately 61.8 miles of the SRBOP, including 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 3.17-20 in Section 3.17). The majority of the existing 138-kV line that would be removed as part of the Segment 9 Revised Proposed Route action would be within the SRBOP, including parts of the C.J. Strike and Oregon NHT SRMAs (Table 3.17-20).

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.

Geologic Resources

The Segment 9 Revised Proposed Route would cross areas with a low risk of earthquake hazard (Table D.14-1 in Appendix D) and landslide hazard (Table D.14-3 in Appendix D).

Streams

No perennial streams would be crossed on the SRBOP along the Segment 9 Revised Proposed Route.

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.

Approximately13.5 miles of FEIS Proposed 9 would be within the SRBOP, 11.1 miles of which would be on BLM-managed land. FEIS Proposed 9 would not follow existing transmission lines within the SRBOP.

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.

Upland Habitat/Vegetation

During operations, approximately 34 acres of vegetation would be impacted within the SRBOP along 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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to predators (due to a reduction in cover). Impacts to small mammals would not differ appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

Approximately 64 acres of pronghorn winter range within the SRBOP would be impacted by FEIS Proposed 9. No other big game ranges within the SRBOP would be impacted by this route.

Cultural Resources/NHTs

A total of 17 sites would be impacted by FEIS Proposed 9, 3 of which are prehistoric (Table 3.24-2). FEIS Proposed 9 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 approximately 55.4 miles), only 16.6 of those miles are located on BLM-managed land. Impacts in this AU 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 (C1505) 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.

Recreation

The FEIS Proposed Route would cross approximately 13.6 miles of the SRBOP including 4.7 miles of the Owyhee Front SRMA (managed under the SRBOP RMP) (Table 3.17-17 in Section 3.17).

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.

Geologic Resources

The FEIS Proposed 9 Route would cross areas with a low risk of earthquake hazard (Table D.14-1 in Appendix D) and landslide hazard (Table D.14-3 in Appendix D).

Streams

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).

Approximately 9.8 miles of the Route 9K would be within the SRBOP, 8.7 miles of which would be on BLM-managed land. Route 9K would not follow existing transmission lines within the SRBOP. In addition, some road improvements to access roads in the Sinker Butte area of the SRBOP would be needed (see Figure 3.24-2 in section 3.24.2.4).

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.

Upland Habitat/Vegetation

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 in Section 3.6).

Raptors/Upland Wildlife

As shown in Table D.10-2 in Appendix D, 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 in Appendix D list the acres of construction and operations impacts that would occur within 1 mile of raptor nests on the SRBOP.

As shown in Tables D.11-5 and D.11-6 in Appendix D, 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 in Appendix D).

Small mammals found along the Project will occupy a wide variety of habitats, from open prairies with short vegetation to more closed and dense habitats. Direct Project-related impacts to small mammals would include disturbance, injury and mortality, as well as habitat loss and fragmentation. Potential indirect effects would include habitat alteration, change in prey or forage species, and an increase in susceptibility to predators (due to a reduction in cover). Impacts to small mammals would not differ appreciably along the length of the transmission line, and all routes would have similar types of impacts to small mammals.

Approximately 8 acres of pronghorn winter range within the SRBOP would be impacted by Route 9K. No other big game ranges within the SRBOP would be impacted by this route.

Cultural Resources/NHTs

A total of 13 sites would be impacted by Route 9K, 3 of which are prehistoric (Table 3.24-3). Route 9K would not impact the Oregon NHT within the SRBOP.

Recreation

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 in Section 3.17). 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.

Geologic Resources

Route 9K would cross areas with a low risk of earthquake hazard (Table D.14-1 in Appendix D) and landslide hazard (Table D.14-3 in Appendix D).

Stream

No perennial streams would be crossed on the SRBOP along Route 9K.

3.24.3.4 Direct and Indirect Effects of Alternatives

The following section provides a review of the seven BLM Alternatives and comparisons of effects related to the SRBOP. The alternatives are displayed in Figures A-2 through A-8. Effects on vegetation, raptors, and selected wildlife species, streams, cultural resources, NHTs, and recreation are displayed in Tables 3.24-4 through 3.24-8 following the alternatives discussions. None of the alternatives would cross medium or high risk earthquake or landslide areas (Table 3.24-9). RMP amendments associated with the alternatives are displayed in Table 3.24-10.

Table 3.24-4. Comparison of Construction-related Impacts to Vegetation (acres) within the SRBOP 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	483	1	1	1	–	746	54	**1,286**
	BOR	36	–	–	–	–	1	7	**44**
	Other Federal [5/]	–	–	–	–	–	<1	–	**<1**
	State	39	–	–	1	–	75	5	**120**
	Private	6	–	–	–	2	59	53	**120**
	Total	***563***	***1***	***1***	***2***	***2***	***883***	***120***	***1,571***
2	BLM	165	–		1	–	361	32	**558**
	BOR	36	–	–	–	–	1	7	**44**
	Other Federal [5/]	–	–	–	–	–	t[6/]	t[6/]	t[6/]
	State	12	–	–	1	–	27	5	**45**
	Private	24	–	–	t[6/]	2	39	36	**101**
	Total	***236***	–	–	***2***	***2***	***429***	***80***	***747***
3	BLM	105	–	–	<1	–	323	32	**460**
	BOR	36	–	–	–	–	1	7	**44**
	Other Federal [5/]	–	–	–	–	–	–	–	–
	State	12	–	–	1	–	35	5	**53**
	Private	4	–	–	–	2	40	26	**72**
	Total	***156***	–	–	***1***	***2***	***399***	***70***	***628***

Table 3.24-4. Comparison of Construction-related Impacts to Vegetation (acres) within the SRBOP 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	144	–	–	1	–	296	8	**448**
	Other Federal [5/]	–	–	–	–	–	<1	–	**<1**
	State	7	–	–	–	–	32	<1	**39**
	Private	24	–	–	t[6/]	–	1	20	**45**
	Total	***175***	–	–	***1***	–	***329***	***28***	***533***
5	BLM	84	–	–	<1	–	258	8	**350**
	Other Federal [5/]	–	–	–	–	–	<1	–	**<1**
	State	7	–	–	–	–	40	–	**47**
	Private	4	–	–	–	–	2	10	**16**
	Total	***95***	–	–	***<1***	–	***300***	***18***	***414***
6	BLM	527	<1	1	2	–	716	31	**1,276**
	BOR	–	–	–	–	–	<1	t[6/]	**<1**
	Other Federal [5/]	–	–	–	–	–	t[6/]	–	**t[6/]**
	State	34	–	–	–	–	77	1	**112**
	Private	26	–	–	t[6/]	–	20	47	**93**
	Total	***587***	***<1***	***1***	***2***	–	***813***	***78***	***1,481***
7	BLM	467	<1	1	1	–	678	31	**1,178**
	BOR	–	–	–	–	–	<1	t[6/]	**<1**
	Other Federal[5/]	–	–	–	–	–	t[6/]	t[6/]	**t[6/]**
	State	34	–	–	t[6/]	–	85	<1	**120**
	Private	6	–	–	–	–	21	37	**64**
	Total	***507***	***<1***	***1***	***1***		***784***	***68***	***1,362***

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.

Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt.5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

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. Alternative 1, the Proposed Action, would cross 70.0 miles of BLM-managed land within the SRBOP; however, most of this distance would follow existing transmission lines. Alternative 1 would have the greatest impact on the SRBOP of the seven action alternatives in terms of miles crossed, acres of habitat impacted, and cultural resource sites impacted.

Alternative 1 would impact approximately 1,286 acres of BLM-managed land within the SRBOP, including approximately 563 acres of shrubland and 883 acres of grassland (Table 3.24-4). This alternative would impact 1,641 acres within 1 mile of raptor nests and cross 23 acres of bighorn sheep habitat and 20 acres of pronghorn winter range within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within

the SRBOP. No perennial streams would be crossed within the SRBOP. Alternative 1 would impact 117 cultural resource sites within the SRBOP, 52 of which would be prehistoric sites (Table 3.24-6). There would be nine adverse impacts to NHTs within the SRBOP (Table 3.24-7), all of which would be associated with the Segment 9 portion of the alternative. This alternative would cross 14.3 miles of VRM II (Table 3.24-8). Alternative 1 would not be consistent with the RMP and seven plan amendments would be required (see Table 3.24-10 for details).

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. Alternative 2 would cross 28.7 miles of BLM-managed land within the SRBOP, 41.3 miles less that Alternative 1, the Proposed Action.

Alternative 2 would impact approximately 558 acres of BLM-managed land within the SRBOP, including approximately 361 acres of grassland and no shrubland (Table 3.24-4). This alternative would impact 703 acres within 1 mile of raptor nests and cross 64 acres of pronghorn winter range within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. Three perennial streams would be crossed within the SRBOP. Alternative 2 would impact 74 cultural resource sites within the SRBOP, 26 of which would be prehistoric sites (Table 3.24-6). There would be no adverse impacts to NHTs within the SRBOP (Table 3.24-7). The alternative would not cross VRM I or II (Table 3.24-8). Alternative 1 would not be consistent with the RMP and three plan amendments would be required (see Table 3.24-10 for details).

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. Alternative 3 would cross 26.3 miles of BLM-managed land within the SRBOP, 43.7 miles less than Alternative 1, the Proposed Action.

Alternative 3 would impact approximately 460 acres of BLM-managed land within the SRBOP, including approximately 323 acres of grassland; no shrubland would be impacted (Table 3.24-4). This alternative would impact 593 acres within 1 mile of raptor nests and cross 8 acres of pronghorn winter range within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. No perennial streams would be crossed within the SRBOP. Alternative 3 would impact 70 cultural resource sites within the SRBOP, 26 of which would be prehistoric sites (Table 3.24-6). There would be no adverse impacts to NHTs within the SRBOP (Table 3.24-7). The alternative would not cross VRM I or II (Table 3.24-8). Alternative 3 would not be consistent with the RMP and three plan amendments would be required (see Table 3.24-10 for details).

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. Alternative 4 would cross 19.9 miles of BLM-managed land within the SRBOP, 50.1 miles less that Alternative 1, the Proposed Action.

Alternative 4 would impact approximately 448 acres of BLM-managed land within the SRBOP, including approximately 296 acres of grassland and no shrubland (Table 3.24-4). This alternative would impact 351 acres within 1 mile of raptor nests and cross 73 acres of pronghorn winter range within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. Three perennial streams would be crossed within the SRBOP. Alternative 4 would impact 17 cultural resource sites within the SRBOP, 3 of which would be prehistoric sites (Table 3.24-6). There would be no adverse impacts to NHTs within the SRBOP (Table 3.24-7). The alternative would not cross VRM I or II (Table 3.24-8). Alternative 4 would not be consistent with the RMP and three plan amendments would be required (see Table 3.24-10 for details).

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. Alternative 5 would cross 17.5 miles of BLM-managed land within the SRBOP, 52.5 miles less that Alternative 1 (i.e., the Proposed Action); it would consist of two lines each approximately 8.8 miles long set at least 250 feet apart. Because Alternative 5 would cross through less of the SRBOP compared to the other Action Alternatives, it would have the least overall impact to the SRBOP compared to the other Action Alternatives.

Alternative 5 would be located just outside the SRBOP boundary in the Sinker Butte area. Based on indicative engineering, some work areas adjacent to the ROW extend across the NCA boundary (Figure 3.24-2). These work areas would be adjusted during final design to reduce impacts on SRBOP lands but it is likely that not all impacts can be avoided.

Alternative 5 would impact approximately 350 acres of BLM-managed land within the SRBOP compared to 1,286 acres for Alternative 2, including approximately 258 acres of grassland and no shrubland (Table 3.24-4). This alternative would impact 241 acres within 1 mile of raptor nests and cross 17 acres of pronghorn winter range within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. No perennial streams would be crossed within the SRBOP. Alternative 5 would impact 13 cultural resource sites within the SRBOP, 3 of which would be prehistoric sites, the fewest of the action alternatives (Table 3.24-6). There would be no adverse impacts to NHTs within the SRBOP (Table 3.24-7). The alternative would not cross VRM I or II (Table 3.24-8). Alternative 5 would not be consistent with the RMP and two plan amendments would be required compared to seven for the Proposed Action (see Table 3.24-10 for details).

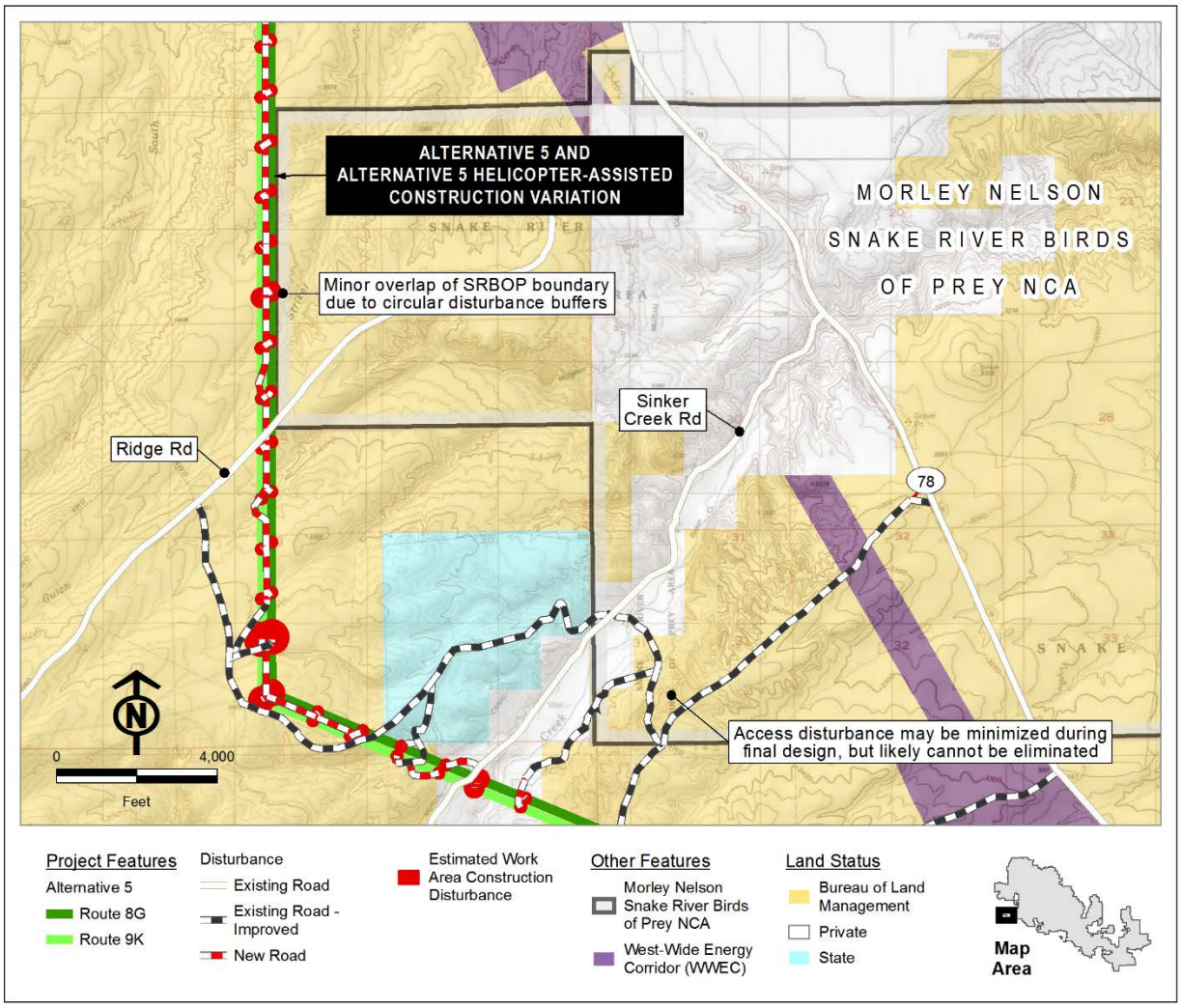

Figure 3.24-2. SRBOP Impacts in the Sinker Butte Area

WWE Corridor Variation

Alternative 5 includes four variations. The two Toana Road Variations and the Helicopter-Assisted Construction Variation are in areas outside the SRBOP. The fourth variation, Alternative 5 WWE Corridor Variation, would shift both lines east to the FEIS Proposed 9 route between MP 141 of Route 9K/MP 112 of Route 8G and the Hemingway Substation. The beginning location is approximately 2 miles south of State Highway 78 and 5 miles southeast of Oreana (see Figure A-6). It would add an additional 2.5 miles within the SRBOP, mostly within the RMP's designated utility corridor.

Approximately 123 acres of shrubland and 11 acres of grassland would be disturbed by the transmission lines, compared to 7 acres of shrubland and 2 acres of grassland for the comparison portion of Alternative 5. Neither the WWE Corridor Variation nor the comparison portion of Alternative 5 would disturb priority habitat management areas on the SRBOP; however, the WWE Corridor Variation would disturb 1 acre of sage-grouse PPH and 40 acres of important habitat in the SRBOP, compared to 5 acres and 1 acre,

respectively, for the comparison portion of Alternative 5. The Alternative 5 WWE Corridor Variation would disturb a total of 140 acres of habitats within 1 mile of raptor nests on the SRBOP, compared to 5 acres along the comparison portion of Alternative 5. This consists of 89 acres of impacts near burrowing owl nests, 30 acres of impacts near ferruginous hawk nests, 17 acres of impacts near golden eagle nests, and 4 acres of impacts near prairie falcon nests on the SRBOP.

The area is classified as VRM Class III, as is the comparison portion of the alternative. Unlike the comparison portion of Alternative 5, this variation would also cross the 9.6 miles of the Owyhee Front SRMA within the SRBOP. Neither the comparison portion of Alternative 5 nor the WWE Corridor Variation would cross any historic trails. Neither the comparison portion of Alternative 5 or the WWE Corridor Variation would cross any trails closed to OHV use.

The route is outside the utility corridor for a short distance near Murphy. The line was moved slightly west of the corridor in the Murphy area to avoid pivot irrigated farmland and a residence on private land. An amendment to the RMP would be required for the area within the SRBOP that outside the designated utility corridor (see Table 3.24-10 and Appendix F). This would be similar to the amendment that would be required for Alternative 2 in the Murphy area.

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. Alternative 6 would cross 63.5 miles of BLM-managed land within the SRBOP, 6.5 miles less that Alternative 1, the Proposed Action.

Alternative 6 would impact approximately 1,276 acres of BLM-managed land within the SRBOP, including approximately 716 acres of grassland and less than 1 acre of shrubland (Table 3.24-4). This alternative would impact 1,402 acres within 1 mile of raptor nests (the second most of the action alternatives) and cross 84 acres of pronghorn winter range and 23 acres of bighorn sheep habitat within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. Six perennial streams would be crossed within the SRBOP, the most of any action alternative. Alternative 6 would impact 76 cultural resource sites within the SRBOP, 29 of which would be prehistoric sites (Table 3.24-6). There would be six Adverse Impacts to NHTs within the SRBOP (Table 3.24-7). This alternative would cross 14.3 miles of VRM II (Table 3.24-8), the same as the Proposed Action. Alternative 6 would not be consistent with the RMP and seven plan amendments would be required (see Table 3.24-10 for details).

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. Alternative 7 would cross 61.1 miles of BLM-managed land within the SRBOP, 8.9 miles less that Alternative 1, the Proposed Action.

Alternative 7 would impact approximately 1,178 acres of BLM-managed land within the SRBOP, including approximately 678 acres of grassland and less than 1 acre of shrubland (Table 3.24-4). This alternative would impact 1,292 acres within 1 mile of

raptor nests (the third most of the action alternatives) and cross 28 acres of pronghorn winter range and 23 acres of bighorn sheep habitat within the SRBOP (Table 3.24-5). No other big game ranges would be crossed within the SRBOP. Three perennial streams would be crossed within the SRBOP, the most of any action alternative. Alternative 6 would impact 72 cultural resource sites within the SRBOP, 29 of which would be prehistoric sites (Table 3.24-6). There would be six adverse impacts to NHTs within the SRBOP (Table 3.24-7). This alternative would cross 14.3 miles of VRM II (Table 3.24-8), the same as the Proposed Action. Alternative 7 would not be consistent with the RMP and seven plan amendments would be required (see Table 3.24-10 for details).

Table 3.24-5. Comparison of Impacts to Wildlife and Fish Habitats within the SRBOP during Construction of the Seven Action Alternatives

Alternative	Bighorn Sheep Habitat (acres)	Elk Winter Range (acres)	Mule Deer Winter Range (acres)	Pronghorn Winter Range (acres)	Raptor (acres impacted within 1 mile of nests)[1/]	Perennial Streams Crossed
Alternative 1	23	–	–	20	1,641	–
Alternative 2	–	–	–	64	703	3
Alternative 3	–	–	–	8	593	–
Alternative 4	–	–	–	73	351	3
Alternative 5	–	–	–	17	241	–
Comparison portion for Alt. 5 WWE Corridor Variation	-	-	-	9	5	-
Alt. 5 WWE Corridor Variation	-	-	-	103	140	-
Alternative 6	23	–	–	84	1,402	6
Alternative 7	23	–	–	28	1,292	3

1/ 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.

Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

Table 3.24-6. Comparison of Impacts to Cultural Resources within the SRBOP from the Seven Action Alternatives[1/]

Alternative[2/]	Prehistoric Resources (Number)					Historic Resources (Number)						Totals
	Open Camp	Rock Feature	Sheltered Camp	Rock Image	Limited Activity	Historic Trails	Agricultural/ Animal Husbandry	Energy Development	Transportation	Water Works	Historic Sites	
1	17	9	6	5	15	7	4	1	7	3	43	**117**
2	15	0	0	5	6	5	3	0	7	3	30	**74**
3	15	0	0	5	6	5	3	0	7	3	26	**70**
4	0	0	0	0	3	0	1	0	0	1	12	**17**
5	0	0	0	0	3	0	1	0	0	1	8	**13**
Alt. 5 WWEC Variation	0	0	0	0	0	0	0	0	0	1	2	**3**
6	2	9	6	0	12	3	2	1	0	1	40	**76**
7	2	9	6	0	12	3	2	1	0	1	36	**72**

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/ Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

Table 3.24-7. Summary of Adverse Impacts on the Oregon NHT from Each Action Alternative

Alternative	Impact	SRBOP[1/]
Alternative 1 (Revised Proposed Action)	Segment 8 (Revised Proposed Route)	
	Adverse	0
	No Adverse	1
	Segment 9 (Revised Proposed Route)	
	Adverse	9
	No Adverse	9
Alternative 2	Segment 8 (Revised Proposed Route)	
	Adverse	0
	No Adverse	1
	Segment 9 (FEIS Proposed Route)	
	Adverse	0
	No Adverse	9
Alternative 3	Segment 8 (Revised Proposed Route)	
	Adverse	0
	No Adverse	1
	Segment 9 (Route 9K)	
	Adverse	0
	No Adverse	2
Alternative 4	Segment 8 (Route 8G)	
	Adverse	0
	No Adverse	2
	Segment 9 (FEIS Proposed Route)	
	Adverse	0
	No Adverse	9
Alternative 5[2/]	Segment 8 (Route 8G)	
	Adverse	0
	No Adverse	2
	Segment 9 (Route 9K)	
	Adverse	0
	No Adverse	2
Alternative 6	Segment 8 (Route 8H)	
	Adverse	6
	No Adverse	7
	Segment 9 (FEIS Proposed Route)	
	Adverse	0
	No Adverse	9
Alternative 7	Segment 8 (Route 8H)	
	Adverse	6
	No Adverse	7
	Segment 9 (Route 9K)	
	Adverse	0
	No Adverse	2

1/ Column shows the number of impacts on BLM-managed land within the SRBOP.
2/ Neither the WWE Corridor Variation nor the comparison portion of Alternative 5 would cross a NHT.
Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

Table 3.24-8. Comparison of Visual Resources Effects in the SRBOP 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	0	14.3	54.9	0.5	13
Alternative 2	0	0	28.2	0.5	6
Alternative 3	0	0	26.0	0.5	9
Alternative 4	0	0	19.9	<0.1	10 [4/]
Alternative 5[2/]	0	0	17.4	0	9 [4/]
Alt. 5 – Comparison Portion for WWE Corridor Variation	0	0	0	0	0
Alt. 5 WWE Corridor Variation[3/]	0	0	22.3	0	1
Alternative 6	0	14.3	46.0	0.03	16
Alternative 7	0	14.3	46.5	<0.1	19

M – Moderate; H – High

1/ Includes only KOPs within the NCA. 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).

3/ Includes shifting Segment 9 into the FEIS Proposed 9 alignment near Murphy, such that it goes through the SRBOP.

4/ KOPs are not double-counted when they look at two alignments

Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

Table 3.24-9. Geologic Hazards

Alternative	Total Miles in SRBOP	Earthquake Hazards			Earthquake Magnitude			Landslide Risk		
		Low 0–69	Medium 70–84	High 85–100	0.1 to 6	6.0 to 6.9	> 7	Low <70	Medium 70–84	High 85–100
1	86.0	86.0			34.4			86.0		
2	38.7	38.7			28.3			38.7		
3	34.9	34.9			23.6			34.9		
4	23.5	23.5			4.7			23.5		
5[1/]	19.7	19.7						19.7		
6	74.3	74.3			15.5			74.3		
7	70.6	70.6			10.8			70.6		

1/ Both the WWE Corridor Variation and the comparison portion of Alternative 5 would cross low hazard areas.

Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

Table 3.24-10. Federal Land Use Plan Amendments and Applicable Action Alternative

Management Plan	Amendment Description (Number)	Alternative						
		1	2	3	4	5	6	7
SRBOP RMP	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. (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. (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)[1/]	x	x	x	x	x	x	x
	Restrict major utility developments to the two utility corridors identified (Lands Map 3) and allow additional major transmission line ROWs as applicable with laws and values for which the SRBOP NCA was designated. Allow two additional 500 kV transmission line ROWs to leave the WWE corridor and exit the SRBOP NCA due south of Bruneau Dunes State Park. (SEIS-13)[2/]					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
	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. (SEIS-20)	x					x	x

Table 3.24-10. 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 (continued)	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. (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. (SEIS-22)				x			

1/ SEIS-8 would also apply to the Alternative 5 WWE Corridor and Helicopter-Assisted Construction Variations.

2/ SEIS-13 would also apply to the Alternative 5 WWE Corridor Variation .

kV: kilovolt; 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

Alt. 1 = Proposed Action (Revised Proposed Routes for Segments 8 and 9); Alt. 2 = Revised Proposed Route 8 and FEIS Proposed 9 including Toana Road Variation 1; Alt. 3 = Revised Proposed Route 8 and Route 9K; Alt. 4 = Route 8G and FEIS Proposed 9; Alt. 5 = Route 8G and Route 9K; Alt. 6 = Route 8H and FEIS Proposed 9; Alt. 7 = Route 8H and Route 9K

3.24.3.5 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 Appendix M.

EPMs are identified in Appendix M and would be applicable to all action alternatives. These EPMs would avoid or minimize the extent of impacts that could occur to the resources and values of the SRBOP. 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 all sections of the SEIS.

Proponent-Proposed MEP

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 the resources and values of the SRBOP.

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." Because the exact location for these restoration efforts is currently unknown, the impacts they could have to habitat in the SRBOP 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 could benefit cultural resources in the SRBOP but it cannot be determined at this time because no parcels have been identified and it is not known if there would be a willing seller.

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 the SRBOP by providing additional protection and enforcement along roads and trails in 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 could have a beneficial effect on recreation in the SRBOP.

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.

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; however, in the long run, this would benefit the SRBOP.

3.24.3.6 BLM Compensatory Mitigation Measures

As discussed above, the MEP does not contain sufficient information to determine if implementation would successfully mitigate Project impacts in the SRBOP. The BLM has worked with the Proponents to develop a framework for compensatory mitigation that replaces the MEP (refer to Appendix K to this document). This section describes the process that would be followed to determine the mitigation that may be required for the SRBOP 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 avoidance, minimization, and restoration actions, some Project-related impacts would likely remain. The impact assessment in Chapter 3 of the FSEIS incorporates the avoidance and minimization contributions of the EPMs and other design features; as a result, the SEIS analysis takes these measures and their impact offsets into consideration in evaluating Project effects.

BLM Compensatory Mitigation

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 the framework plans in the POD, 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 would 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. Refer to Appendix K for a description of the framework for determining required mitigation and enhancement in the SRBOP.

4.0 CUMULATIVE EFFECTS

Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions" (40 CFR Part 1508.7). This section presents a discussion of the potential cumulative effects associated with Gateway West and is presented in the following four parts:

- the basis for the assessment, including the regulatory framework, the list of potentially relevant actions, and the process and criteria used in selecting relevant actions for this evaluation;
- a summary table and brief descriptions of the relevant past, present, and reasonably foreseeable actions that could contribute to a cumulative effect when considered with the effects from Gateway West;
- the potential cumulative effects associated with the Proposed Route or other routes when considered together with the relevant past, present, and reasonably foreseeable actions; and
- the conclusions reached in this evaluation.

Based on the regulatory framework, the assessment area, the issues raised during and after scoping, and the list of projects presented here, a cumulative impact analysis was conducted for each resource analyzed in Chapter 3. The conclusions reached in each of those analysis segments are presented here. This chapter also addresses the cumulative effects of proposed RMP/MFP amendments where the proposed amendment would change land use allocations.

4.1 Basis for Assessment

4.1.1 Regulatory Framework

This evaluation of potential cumulative effects from the Proposed Action is consistent with the following regulations and guidance:

- CEQ *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Part 1500-1508, 1978 as amended) (CEQ 1986);
- USEPA's *Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act* (40 CFR Part 6 [2009]);
- CEQ's *Considering Cumulative Effects under the National Environmental Policy Act* (January 1997) (CEQ 1997b);
- USEPA's *Consideration of Cumulative Impacts in EPA Review of NEPA Documents,* EPA 315-R-99-002 (May 1999); and
- *Bureau of Land Management National Environmental Policy Act Handbook*, H-1790-1 (2008c).

The 2013 ROD for the Gateway West Project (BLM 2013b) includes project-wide mitigation for the greater sage-grouse, wetlands, and cultural resources. This SEIS also addresses mitigation for impacts on the SRBOP, and mitigation for those impacts. The requirement for mitigation for impacts to the SRBOP's resources, objects, and values, including compensatory mitigation to ensure enhancement of these resources, would be consistent with the BLM's management responsibilities under FLPMA (P.L. 94-579) and enabling act for the SRBOP. This management approach would also be consistent with the Presidential Memorandum on mitigation, the DOI's manual section on landscape-scale mitigation (DOI 2015), and the BLM's interim mitigation policy (IM 2013-142), 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. Refer to Appendix K for a discussion of mitigation for resources in the SRBOP.

4.1.2 Scope of the Analysis

The BLM has developed seven action alternatives that each consist of a different combination of route options along Segments 8 and 9. This SEIS assesses each individual route option along Segments 8 and 9 independently, as well as when these routes are combined within these seven BLM action alternatives. The SEIS' assessment of individual route options considers these various routes as a separate project segment, and all aspects of the Project that would be connected to that segment are disclosed by route, such as access roads and temporary staging areas.

The seven BLM action alternatives are displayed in Chapter 2, Figures 2.3-4a through 2.3-4g and outlined here:

- Alternative 1 – Proposed Action (the Revised Proposed Routes for Segments 8 and 9)
- Alternative 2 – Revised Proposed 8 and FEIS Proposed 9
- Alternative 3 – Revised Proposed 8 and the 9K Route
- Alternative 4 – The 8G Route and FEIS Proposed 9
- Alternative 5 – The 8G and 9K Routes
  - Two variations were identified for Alternative 5: the Helicopter-Assisted Construction Variation and the WWE Corridor Variation
- Alternative 6 – The 8H Route and FEIS Proposed 9
- Alternative 7 – The 8H and 9K Routes

Full descriptions of the seven action alternatives can be found in Chapter 2, Section 2.3.3.

The BLM has identified Alternative 5, with the inclusion of Toana Road Variation 1, as the Preferred Alternative for Segments 8 and 9.

For the purposes of this analysis, the **temporal extent** of the projects to be considered is the expected physical operational service life of this Project (approximately 50 years), plus the estimated 10 years needed for substantial site rehabilitation after

decommissioning is completed. Past and present events and projects are generally identified and their ongoing impacts discussed. "Reasonably foreseeable actions" are proposed projects or actions that have applied for a permit from local, state, or federal authorities or which are publicly known.

The **spatial extent** of the projects considered in the cumulative effects analysis varies by resource. In several cases, the Cumulative Impact Analysis Area (CIAA) for a resource is substantially larger than the corresponding project-specific Analysis Area.

Table 4.1-1. Cumulative Impact Analysis Area by Resource

Resource	Definition of Cumulative Impact Area	Rationale for Area
National Historic Trails	5 to 15 miles from the Direct Impact Cumulative Impact Analysis Area (CIAA).	Farthest distance within which this Project could be visible, given visual attenuation in this Project area.
Visual	5 to 15 miles from the CIAA.	Farthest distance within which this Project could be visible, given visual attenuation in this Project area.
Cultural	CIAA for cultural resources without Traditional Cultural Property (TCP) or visual components; for resources for which setting is a component of eligibility, including TCPs, up to 5 miles from the CIAA.	Likely area impacted includes the proposed maximum right-of-way (ROW) width (250 feet) and a buffer for direct effects and the area from which this Project could generally be viewed for visual impacts.
Socioeconomics	Counties crossed by Proposed Route and other routes.	Corresponds with the direct and indirect socioeconomic CIAA and includes the constituent municipalities and potentially affected populations.
Environmental Justice	Counties and Census Block Groups crossed by Proposed Route and other routes.	Corresponds with the direct and indirect environmental justice CIAA.
Vegetation	CIAA.	Adequately covers the proposed disturbance footprint.
Special Status Plants	CIAA and any area of known plant population or suitable habitat crossed by the CIAA.	Potential to damage sensitive plant populations or reduction of habitat available for plants
Invasive Plant Species	Counties crossed by the CIAA.	Area in which introduction or spread of invasive plant species from this Project could interact with weeds already present or introduced or spread by other projects; political unit where weed control is required and regulated.
Wetlands and Riparian Areas	CIAA and the extent of each mapped wetland or riparian area crossed by the CIAA.	Dredge or fill in wetlands, impact to riparian areas.
General Wildlife and Fish: Big game wintering habitat	Mapped extent of herd unit areas of crucial wintering crossed by the CIAA.	Area of potential critical stress for ungulate populations.
General Wildlife and Fish: Raptor nests	Raptor nests within 1 mile of the CIAA.	Reasonable distance beyond which construction or operation of this or other projects is unlikely to disturb nesting birds.

Table 4.1-1. Cumulative Effects Analysis Area by Resource (continued)

Resource	Definition of Cumulative Impact Area	Rationale for Area
General Wildlife and Fish: *Migratory birds*	CIAA plus 0.5-mile buffer	Reasonable distance beyond which construction or operations of this or other projects is unlikely to disturb nesting birds.
Special Status Wildlife and Fish: *bald eagle*	Known locations of eagle nests and suitable winter roosting habitat within 10 miles of the CIAA.	Potential habitat
Special Status Wildlife and Fish: *BLM Special Status Fish Species*	Water bodies within or crossed by the CIAA that contain BLM special status fish species.	Potential habitat.
Special Status Wildlife and Fish: *burrowing owl*	Known extent of breeding populations and identified suitable habitat for the species that are overlapped by the CIAA.	Potential habitat.
Special Status Wildlife and Fish: *Columbian sharp-tailed grouse*	Distance from leks: 0.25 mile of the CIAA	BLM “no surface occupancy” land use designation, as designated within the various BLM RMPs at the time of initial Project design (2008).
	Distance from leks: 0.6 mile of the CIAA	Based on current “no surface occupancy” requirements.
	Distance from leks: 2 miles of the CIAA	Based on the average distance (or more) that nesting and brood rearing usually occurs in relation to leks (Giesen and Connelly 1993; Meints 1991; UDNR 2010).
Special Status Wildlife and Fish: *Columbia spotted frog, northern leopard frog, and Woodhouse toad*	Mapped riparian and wetland polygons that are overlapped by the CIAA.	Potential habitat.
Special Status Wildlife and Fish: Federally listed invertebrate species	Designated recovery areas for these species that are overlapped by the CIAA.	Extent of occupied habitat.

Table 4.1-1. Cumulative Effects Analysis Area by Resource (continued)

Resource	Definition of Cumulative Impact Area	Rationale for Area
Special Status Wildlife and Fish: *greater sage-grouse*	Key and restoration habitat polygons that are crossed by the CIAA (Idaho).	Areas mapped by the Idaho Department of Fish and Game (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.
	Distance from leks: area within 0.25 mile of known greater sage-grouse lek	The BLM "no surface occupancy" requirements for non-Core Areas as found in the BLM RMPs.
	Distance from leks: area within 0.6 mile of known greater sage-grouse lek	Based on current "no surface occupancy" requirements found in BLM Instruction Memorandum (IM) 2012-019.
	Distance from leks: area within 1 mile of known greater sage-grouse lek	An intermediate distance (between other required distances) assessed due to the uncertainty regarding regulatory requirements for greater sage-grouse lek avoidance.
	Distance from leks: area within 2 miles of known greater sage-grouse lek	Based on the Conservation Plan for the Greater Sage-grouse (Connelly et al. 2000; IDFG 2006).
	Distance from leks: area within 3 miles of known greater sage-grouse lek	An intermediate distance (between other required distances) assessed due to the uncertainty regarding regulatory requirements for greater sage-grouse lek avoidance.
	Distance from leks: area within 4 miles of known greater sage-grouse lek	As required by BLM IM (BLM 2009b).
	11-mile buffer around the Project (22-mile-wide analysis corridor)	Based on the requirements of BLM IM (BLM 2009b), and the Framework for Sage-Grouse Impacts Analysis for Interstate Transmission Lines (BLM 2011b).
Special Status Wildlife and Fish: *Designated Critical Habitat for the Jarbidge River bull trout*	The extent of the designated critical habitat for the Jarbidge River bull trout that is crossed by the CIAA.	Extent of designated critical habitat.
Special Status Wildlife and Fish: northern goshawk	Known extent of breeding populations as well as identified suitable habitat for the species that are crossed by the CIAA.	Potential habitat.

Table 4.1-1. Cumulative Effects Analysis Area by Resource (continued)

Resource	Definition of Cumulative Impact Area	Rationale for Area
Special Status Wildlife and Fish: pygmy rabbit	Known occurrences and identified suitable habitat for the species crossed by the CIAA.	Areas of known occurrences mapped by the BLM, as well as suitable habitat mapped by Project-specific remote sensing.
Special Status Wildlife and Fish: *yellow-billed cuckoo*	Extent of suitable habitats, mapped through remote sensing crossed by the CIAA.	Potential habitat.
Other BLM Special Status Species *not addressed individually*	Known extent of populations as well as identified suitable habitat for these species that are crossed by the CIAA.	Potential habitat.
Geologic hazards	A distance of 100 miles on either side of the transmission line. All other hazards (landslide, subsidence, shallow depth to bedrock), the geologic unit with hazard where that extent is overlapped by the CIAA.	Likely earthquakes in the Project area would not affect transmission lines more than 100 miles from an epicenter. Other hazards are based on the geologic unit in which they occur.
Minerals	Areas of active resource extraction for saleable minerals where that extent is overlapped by the CIAA.	Potential for impact on saleable mineral extraction, and the potential for resource extraction impacts to interact with ground-disturbing effects from this and other projects.
Paleontology	Fossil-bearing formations where the formation is overlapped by the CIAA.	Potential for impact to fossil-bearing formations.
Soils	Sensitive soil areas (highly erodible, highly susceptible to compaction, and other low reclamation soils) that are overlapped by the CIAA.	Impact restricted to immediate Project area.
Water	Watersheds of waterbodies overlapped by the CIAA with impacts in or adjacent to the waterbody.	Impact from Project may affect areas lower in watershed; all projects in watershed need to be considered.
Land Use	BLM: Resource Management Plan Area crossed by CIAA. Private: County and municipality crossed by CIAA.	Level at which land use regulations, plans, or authorizations are in effect.
Agriculture	The counties crossed by Segments 8 and 9.	Areas of contiguous farmland, while not necessarily under one ownership, typically are part of a local community.
Transportation	Airports within 3 miles of transmission line centerline. Length and number of existing roads used for Project. Length and number of existing roads to be reconstructed or new roads to be built for the Project.	Airport distance defined by controlled airspace; roads area varies by type of road.

Table 4.1-1. Cumulative Effects Analysis Area by Resource (continued)

Resource	Definition of Cumulative Impact Area	Rationale for Area
Air Quality	Statewide air quality area.	To provide an understanding of current air quality in Idaho, to identify present projects that contribute to air quality degradation, and to understand how the electric generation carried by the Gateway West and other transmission lines, present and proposed, contribute to air quality issues.
Electrical Environment	ROW width.	Electrical effects, including magnetic field and stray voltage, do not occur outside the ROW (see Section 3.21).
Public Health and Safety	Areas occupied by people where crossed by CIAA.	Construction and operation of the transmission line may affect the health and safety of people.
Noise	Construction: 1,000 feet from construction noise sources; Operation: ROW width.	Areas beyond which no noise from construction or operation of Gateway West would be detectable above USEPA recommended levels (see Section 3.23).
SRBOP	SRBOP	Potential for impact to the SRBOP.

4.1.3 Land Management Plan Amendments

In several cases, the Preferred Alternative (Alternative 5) and other routes would be incompatible with land allocation classifications (frequently but not exclusively VRM classifications) assigned to the federally managed lands they would cross. Chapter 2 summarizes all plan amendments, Appendix F contains details and analysis of each proposed amendment to BLM land management plans, and Appendix G contains maps and visual analysis documentation, including photographs and simulations, in support of the amendments analyses for BLM land management plans.

The purpose of this section is to examine the possible cumulative effects to resources of the various plan amendments that would be necessary to permit the Project. These amendments are connected actions to the Project ("but for" the Project, these amendments would not be considered). The possible cumulative effects of the amendments themselves are addressed here, separately from the Project cumulative effects but considered with them, because the decision whether to approve plan amendments is a separate decision under the law for the BLM.

In some cases, the amendments to the land management plans are designed to allow the Project to be constructed and operated without changing the underlying land allocations. Where that is the case, the cumulative effects of the plan amendment are fully captured in the cumulative effects of the Project itself. The effects of those amendments are considered in detail by resource, below, but not addressed further in this section. For amendments that would change the underlying management of the area, the resultant plan amendment could have cumulative effects beyond the Project cumulative effects. The impact of the underlying land use allocation revision is analyzed in this section across the extent of the polygon proposed for revision. For example, if a polygon mapped as VRM Class II is proposed to be changed to VRM

Class III, the impact of that change is taken into consideration as part of the cumulative effects of the Project.

4.1.3.1 Twin Falls Management Framework Plan

Proposed Amendments for the Preferred Alternative: Actions that occur on lands managed by the Burley Field Office are guided by decisions recorded in the Twin Falls MFP approved in 1982, and in the 1989 Salmon Falls Creek ACEC designation amendment. The MFP does not permit powerlines to the east or west of the two established corridors and designates land that would be crossed by the Gateway West transmission line as VRM Class I and II. The 1989 amendment restricts activities within the designated Salmon Falls Creek ACEC. The ACEC also includes a portion of Salmon Falls Creek that has been determined to be eligible for WSR status.

The routing for the Segment 9 portion of the BLM Preferred Alternative (Alternative 5) through lands managed under the Twin Falls MFP has not changed from the route presented in the FEIS. The Segment 9 portion of the Preferred Alternative would not conform to the Twin Falls MFP and would require a plan amendment to the Twin Falls MFP for granting of a ROW for the Project across lands managed by the Burley Field Office. The Twin Falls MFP allows new utilities to be constructed within and between existing corridors and protects visual resources adjacent to Salmon Falls Creek. These MFP decisions would be revised to allow development of this Project.

Proposed Amendment SEIS-1 (Figure F-2 in Appendix F) for Segment 9 of the Preferred Alternative would rewrite the “Land 4.1” decision to allow the development of this Project (changes in italics):

> “Allow future major power transmission lines (line of at least 46-138 kV which originate and terminate outside of the MFP area) to be constructed within the recommended corridors. Also allow construction of transmission lines between the corridors. Do not permit power lines to the west or the east of the two corridors. *Allow a 500-kV transmission line ROW outside existing corridors.* Exempt service lines from restriction.”

This amendment to allow the Project outside of the two existing corridors would be required; however, this amendment would not change the underlying land management. Therefore, the cumulative effects resulting from this amendment would be the same as those described for the Project.

The Twin Falls MFP contains direction for managing visual resources that would restricts powerline construction, including direction to manage the Salmon Falls Canyon as VRM Class I between Salmon Falls Dam and Lilly Grade, and VRM Class II between Lilly Grade and Balanced Rock. The Twin Falls MFP Amendment in 1989 designating the Salmon Falls Creek ACEC prohibits the utilities from crossing of the Salmon Falls Creek ACEC. The 1989 Plan Amendment to the Twin Falls MFP regarding the establishment of the Salmon Falls Creek ACEC states the following:

> “2. The ACEC is subject to the following resource management restrictions: (1) exclude livestock grazing, (2) avoid all utility rights-of-way, (3) close to

> agricultural entry, (4) close to all motorized vehicle use, and (5) prohibit mechanized fire suppression equipment."

The 1989 amendment also states that management of the Salmon Falls Creek ACEC in the Twin Falls Resource Area would be the same as for the adjacent portion of the ACEC in the Jarbidge Resource Area. The 2015 Jarbidge RMP established the Roseworth Corridor, which crosses the ACEC, and reclassified the Class I and II areas within the corridor to VRM Class III. Therefore, amendments are proposed to change the adjacent area in the Twin Falls portion of the corridor to VRM Class III to match the VRM class in the Jarbidge RMP and to allow a 500-kV transmission line to cross Salmon Falls Canyon through the ACEC, consistent with the corridor established in the Jarbidge 2015 RMP.

The Segment 9 portion of the Preferred Alternative would require an amendment to the Twin Falls MFP VRM classification and Amendment (1989) regarding the establishment of the Salmon Falls Creek ACEC.

Proposed Amendment SEIS-2 (Figure F-2 in Appendix F) for Segment 9 of the Preferred Alternative would amend the VRM direction:

> *"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."*

Amendment SEIS-2 would also amend the Twin Falls MFP and 1989 Plan Amendment regarding the management of the Salmon Falls Creek ACEC:

> *"Allow a 500-kV Transmission Line Project to cross Salmon Falls canyon through the ACEC, consistent with the corridor established in the 2015 Jarbidge RMP."*

The creation of the Roseworth Corridor through the Recreation portion of the WSR, with a VRM Class III, could result in additional development in the corridor, including another transmission line, although no foreseeable projects are currently proposed.

Amendments for Other Routes: FEIS Proposed 9 and the Segment 9 Revised Proposed Route would follow the same alignment as the Segment 9 portion of the Preferred Alternative through the Twin Falls MFP planning area; therefore, the amendments and their effects would be the same as described above.

4.1.3.2 Jarbidge Resource Management Plan

***Proposed Amendments for the Preferred Alternative*:** Under the 2015 Jarbidge RMP, no amendments would be needed for the Preferred Alternative (Alternative 5) including Toana Road Variation 1.

Amendments for Other Routes: The Segment 9 Revised Proposed Route is the same as the route proposed in the FEIS for much of its distance through the Jarbidge RMP planning area. The revised route deviates from the FEIS routing in the western edge of the area managed under the 1987 Jarbidge RMP.

The Segment 8 Revised Proposed Route would cross land managed as a utility restricted area. Because a powerline would not conform to this restriction, an amendment (SEIS-3) would be needed for the Lands decision to read (new language in italics):

> "MUA-3 Utility avoidance/restricted area – three Paleontological areas (Sugar Bowl, Glenns Ferry, & McGinnis Ranch) and Oregon Trail ruts (7,200 acres/22.5 miles) to overhead and surface disturbance and underground utilities. *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.*"

The Segment 8 Revised Proposed Route would cross lands managed to protect NHTs, which would not allow "incompatible uses to occur within a ½ mile corridor through which these routes pass." Because a powerline would not conform to this restriction, an amendment (SEIS-4) would be needed for the Cultural Resources direction in the 1987 Jarbidge RMP. The amendment would read (revisions in italics):

> "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*.*"

The Segment 8 Revised Proposed Route would cross VRM Class I land associated with the Oregon NHT, which is not part of the WWE corridor. As a powerline would not conform to the VRM Class I objectives, a new VRM decision (SEIS-5) would be needed and would read (new language in italics):

> "The visual or scenic values of the public lands will be considered whenever any physical actions are proposed on BLM lands. The Degree of alterations to the natural landscape will be guided by the criteria established for the four Visual Resource Management Classes as outlined in BLM 8400. VRM Classes will be managed as shown on Map 9. *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."*

The Revised Proposed Route in Segment 9 would cross VRM Class II just west of the SRBOP. An amendment (SEIS-14) would be needed to conform to the VRM designations in the 1987 Jarbidge RMP and would read (new language in italics):

> *"The VRM decision 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."*

In areas where the VRM class is changed from Class I or II to Class III or IV, an amendment would result in the area being managed at a lower protection level. Amending the RMP to lower the VRM classification may encourage additional development in these areas.

In the area near the Oregon NHT in the Jarbidge Field Office, ownership is complex, with primarily private lands in the Glenn's Ferry area and along the Snake River and BLM-managed lands predominating in the foothills. Changing the VRM Class I area near Segment 8 to VRM Class IV would be in keeping with guidance from the 2014 BLM Manual 6280. This area has already been visually compromised by the presence of multiple transmission lines running to the north and south of the proposed alignment. In addition, there is a WWE corridor designated directly south of the proposed transmission line alignment. Reclassification of the small parcel of land near the SRBOP is fairly small, and the topography and distance requirements are unlikely to provide added incentives for additional powerlines through this area.

The revision of VRM classes and reclassification of the area from "restricted" to "avoidance" along the Segment 8 Revised Proposed Route would also allow for an additional transmission line immediately parallel to the proposed Project without additional plan amendments. While there are currently no other transmission lines in the eastern VRM reclassification areas, there are existing lines in the northeast portion of the section where the land management objective would be changed from "restricted" to "avoidance." The areas that would be changed are isolated from one another, however, and often adjacent to private land not managed for VRM objectives. While VRM objectives would be relaxed somewhat, it still is an area where utilities are discouraged. Other RMP objectives, including those for preservation of the Oregon Trail and the paleontological areas, would still be in place and any additional disturbance would have to either avoid or mitigate for impacts to the other resources. Therefore, the cumulative effects of the plan amendment would be minimal.

Route 8H would also cross the area managed under the 1987 Jarbidge RMP. The amendment changing the VRM class from VRM II to VRM III near the C.J. Strike SRMA described for Revised Proposed Route in Segment 9 above would also be required for this route.

4.1.3.3 SRBOP Resource Management Plan

Proposed Amendment for the Preferred Alternative: Both segments of the Preferred Alternative (Alternative 5) would require an amendment to allow the Project to occur closer to occupied sensitive plant habitat than what is currently allowed. **Proposed Amendment SEIS-8** (Figure F-3 in Appendix F) would read (new language in italics):

> "Sensitive Plant Habitat Include in all BLM authorizations permitting surface disturbing activities (non-grazing), requirements that (1) affected areas be reseeded with a perennial vegetative cover, and (2) surface disturbing activities be located at least 1/2 mile from occupied sensitive plant habitat. *Gateway West will be allowed within 0.5 mile of occupied, sensitive plant habitat, with appropriate mitigation to protect sensitive plants, including slickspot peppergrass.*"

While the amendment would result in changing management objectives for the sensitive plant, it would do so specific to Project action areas; it would then have project-level

cumulative effects and would not result in cumulative effects of management-level change that would apply to areas outside of the Project.

Both segments of the Preferred Alternative are outside of the two utility corridors. **Proposed Amendment SEIS-13** (Figure F-3 in Appendix F) for the Preferred Alternative would amend the Utility and Communications Corridors Management action to allow development of this Project (changes in italics):

> "Restrict major utility developments to the two utility corridors identified (Lands Map 3) *and allow additional major transmission line ROWs as applicable with laws and values for which the SRBOP NCA was designated. Allow two additional 500 kV transmission line ROWs to leave the WWE corridor and exit the SRBOP NCA due south of Bruneau Dunes State Park."*

An amendment to allow the Project outside of the two existing corridors would be required; however, this amendment would not change the underlying land management. Therefore, the cumulative effects resulting from this amendment would be the same as those described for the Project.

***Amendments for the Other Routes*:** Route 8G, Segment 9 Revised Proposed Route, Segment 9 Revised Proposed Route, and FEIS Proposed 9 would also need an amendment to allow those routes to occur closer to occupied sensitive plant habitat than what is currently allowed. The cumulative effects would be the same as described above.

The Segment 9 Revised Proposed Route, Route 9K, FEIS Proposed 9, Route 8H, Route 8G, and Alternative 5 WWE Corridor Variation would also occur outside of the two utility corridors, so would require a similar amendment described above for the Preferred Alternative; however, amendments (SEIS-7, SEIS-20, SEIS-21, and SEIS-22) would be written to allow one additional ROW. Similarly, the Segment 8 Revised Proposed Route would require a similar amendment described above allowing an additional ROW. The cumulative effects would be the same as described above.

The Segment 9 Revised Proposed Route and Route 8H would pass through the northwestern edge of the Cove non-motorized area, which is closed to motorized vehicle access. An amendment (SEIS-19) would be required allowing authorized use that would impact the underlying land use, which could result in cumulative impacts if authorized uses other than the Project were allowed.

The Segment 9 Revised Proposed Route and Route 8H would cross through two SRMAs. Amendments (SEIS-16 and SEIS-17) would be required, and while an amendment would result in changing management objectives for the SRMAs, it would do so specific to Project action areas; it would then have project-level cumulative effects and would not result in cumulative effects of management-level change that would apply to areas outside of the Project.

The Segment 9 Revised Proposed Route and Route 8H would require amendments (SEIS-15 and SEIS-18) for a VRM areas to be changed to Class III to allow for the Project. If the resultant change to Class III allowed for additional development

cumulative impacts could occur, although no foreseeable projects are currently proposed.

4.1.3.4 Bennett Hills/Timmerman Hills Management Framework Plan

Proposed Amendments for the Preferred Alternative: No amendments would be needed for the Preferred Alternative (Alternative 5).

***Amendments for the Other Routes*:** The Segment 8 Revised Proposed Route through the area managed under the Bennett Hills/Timmerman Hills MFP is the same as was presented in the FEIS. The associated analysis is repeated here. The Segment 9 Revised Proposed Route crossing of the Oregon NHT would impact visual resources and archeological resources; thus, the Project would not be in conformance with the Bennett Hills/Timmerman Hills MFP. One amendment would have an extent larger than the transmission line ROW itself because of reclassification of visual management areas.

The visual resource protection would be rewritten (SEIS-9) to allow development of this Project and would read (changes in italics):

> "No management activity should be allowed to cause any evident changes in the form, line color or texture that is characteristic of the landscape within this Class II area. *The VRM Class II area within 3,000 feet to the north of the existing transmission line ROW will be reclassified from VRM II to VRM III (including the existing ROW).*"

The amendment changing the VRM Class II classification to VRM Class III would change the classification of lands within 3,000 feet of an existing transmission line. This may result in up to two additional transmission lines being located along this route, which would result in additional impacts to resources managed under the MFP. The cumulative effect of the plan amendment would not differ substantially from the effect of the Project itself, particularly given that no projects other than possible future transmission lines are proposed for the area.

In addition, to allow the crossing of the Oregon NHT, the amendment (SEIS-10) would read (changes in italics):

> "Prohibit all land disturbing developments *and manage all cultural resources with applicable law and policy*."

Allowing land-disturbing developments up to 330 feet from the Oregon NHT could potentially affect the ability to conform to agency policy of protecting archaeological sites; however, stipulations for managing archeological sites as required by the NHPA should minimize this possibility. Additionally, EPMs (CR-1 through CR-8) would be aimed at reducing these impacts and construction would occur in a manner that would avoid disturbing important historic resources..

4.1.3.5 Kuna Management Framework Plan

Proposed Amendments for the Preferred Alternative: No amendments would be needed for the Preferred Alternative (Alternative 5).

Amendments for Other Routes: The Segment 8 Revised Proposed Route, Segment 9 Revised Proposed Route, and 8H would cross through the Kuna Planning Area. Because the Project does not conform to the current direction provided in the Kuna MFP for cultural resources and following existing corridors, the land use plan would need to be amended (SEIS-11) to permit the Project in this area. The amended decision would read (changes in italics):

> "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.*"

There is currently a management objective for managing cultural and historic ruins near the area for the Segment 8 Revised Proposed Route. An amendment would be required allowing authorized use that would impact the underlying land use, which could result in cumulative impacts if authorized uses other than the Project were allowed.

4.1.3.6 Bruneau Management Framework Plan

Proposed Amendments for the Preferred Alternative: The Preferred Alternative (Alternative 5) would cross VRM Class II land within the Bruneau MFP Planning Area. An amendment would be needed to change the VRM classification to VRM Class III for the transmission line to conform to the management plan. The amendment would reclassify the entire VRM Class II parcel to VRM Class III. This action would be in agreement with the last Visual Resource Inventory (2012), which identified the area as having qualities consistent with VRM Class III. **Proposed Amendment SEIS-12** (Figure F-4 in Appendix F) would read (changes in italics):

> *"The area designated as VRM Class II adjacent to Castle Creek will be reclassified to VRM Class III."*

As the amendment would be in agreement with the 2012 Visual Resource Inventory, no cumulative effects are anticipated.

No amendments would be required for the Segment 9 portion of the Preferred Alternative.

Amendments for Other Routes: The FEIS Proposed 9 route would cross VRM Class II land within the Bruneau MFP planning area. The same amendment as described above would be needed to change the VRM classification to VRM Class III for the transmission line to conform to the management plan. Cumulative effects would be the same as described above.

4.2 Projects or Actions with Potential for Cumulative Effects with Gateway West

Projects within the resource CIAAs with potential to add to the direct and indirect effects of Gateway West were considered. Those projects most likely to cause cumulative effects are those that have effects similar to those of Gateway West since they tend to impact all the same resources across multiple jurisdictions in ways similar to those of

Gateway West. Other projects also affect one or more resources and are considered together with the effects from Gateway West. For ease of analysis, projects with the potential for cumulative effects are presented in the following categories:

- Other transmission lines in or near the Project area or serving similar generation or load areas (Figure E.24-1 in Appendix E);
- Other linear projects in or near the Project area, such as roads and pipelines;
- Energy generation projects, including coal, gas, wind, geothermal, and hydroelectric (Figure E.24-2 in Appendix E);
- Mineral extraction (Figure E.24-2 in Appendix E);
- Other development, including subdivision of lands for commercial, industrial, or residential development; and
- Existing and proposed land uses or restrictions on land uses, including vegetation management, hunting, and OHV use.

4.2.1 Past and Present Actions

Past and present actions have contributed to the affected environment or the context of the proposed Project. While the sections describing the affected environment (Chapter 3) take these actions or events into consideration in a general way, the list and description below provide details on the location, scale, and duration of a variety of actions that have effects on some of the same resources that would be affected by the Project.

4.2.1.1 Existing Transmission Lines

High-voltage (typically 115-, 230-, 345-, or 500-kV) transmission lines carry electricity long distances and begin and end in substations that serve either generation or load centers. In some cases, a formal utility corridor has been designated where these transmission lines cross public lands, but in other cases the lines are recognized as utility crossings not in a corridor.

Major transmission lines in the CIAAs for Segment 8 and 9 Revised Proposed Routes, other routes, and Toana Road Variations are found in Table 4.2-1 and are shown in Figure E.24-1 of Appendix E. These transmission lines vary from 115 kV to 500 kV. Others carry hydroelectric energy from the power plants along the Snake River, among others, to interconnection points with the western grid. These transmission lines have been in service for variable amounts of time, but generally between 20 years and 40 years.

Distribution lines (those carrying 32 kV or below) are typically much shorter (40 to 50 feet in height rather than 100 feet or taller) and typically run much shorter distances than high-voltage transmission lines. Distribution lines are associated with residential development, agricultural land uses, and with oil and gas development in many areas.

Idaho Power reports that hundreds of miles of their system currently cross irrigated crop or pasture lands. They report that of the 1,162 miles of existing 230-kV lines in service, 411 miles cross irrigated lands, and of the 576 miles of existing 345-kV lines in service, 102 miles cross irrigated lands. They further report hundreds of miles of lower-voltage transmission and sub-transmission lines across irrigated agriculture (IPC 2010).

Table 4.2-1. Existing Transmission Lines that Parallel or Cross Gateway West

Proponent	Project	Gateway West Segment	Gateway West Proposed Route MPs (parallel)	Gateway West Proposed Route MP (crossed)
Bonneville Power Administration	115-kV Anderson Ranch to Mountain Home	8	68.4-70.6	
Idaho Power	230-kV Boise to Midpoint	8	0-86.2 (3 lines)	0.2, 55.6
Idaho Power	230-kV Bennett Mountain to RTSN	8		68.1
Idaho Power	138-kV Lower Falls to Midpoint	8	0-1.5	
Idaho Power	138-kV Black Mesa to Mountain Home	8	52-68.4	50.1
Idaho Power	138-kV Elmore to Mountain Home	8		68.8
Idaho Power	138-kV Boise to Mountain Home	8	68.4-86.2	
Idaho Power	138-kV Bowmont to Canyon Creek	8		113.5
Idaho Power	138-kV Upper Salmon B to Mountain Home	8		68.2
Idaho Power	138-kV Lower Falls to Toponis	8		19.1
PacifiCorp	500-kV Hemingway to Midpoint (Summer Lake line)	8, 9	0-1.3, 50.1-116.6, 126.4-131.5 (Segment 8)	50.1, 127.6 (Segment 8); 161.9 (Segment 9)
Idaho Power	138-kV Lower Falls to Wells	9		25.9
Idaho Power	138-kV Raft SKSN to Canyon Creek	9		114.5
Idaho Power	138-kV Raft SKSN to CJ Strike	9		114.3
Idaho Power	138-kV Sinker Creek to Tap	9		145.6
Sierra Pacific Power Co.	345-kV Humboldt to Midpoint	9	0-8.0	

MP – milepost
Source: Ventyx 2014

4.2.1.2 Existing Pipelines

Large-diameter pipelines (12 inches or larger for liquids and 24 inches or larger for natural gas) are used to transport liquid petroleum products and natural gas long distances. These networks typically start at an initial injection station where product is injected into the line and end at a final delivery station where the product is distributed. Other major pipeline components include compressor stations for natural gas or pump stations for liquids used to help move the product through the pipe, block valves capable of isolating portions of the pipeline should a leak occur, and other valves and stations used for regulating pressure within the pipeline or allowing the product being transported to be delivered or inspected. Pipelines are typically buried within a designated ROW. The permanent ROW varies in width depending on the easement, the pipeline system, the presence of other nearby utilities, and the land use. These ROWs are kept clear of deep-rooted vegetation to allow the pipeline to be safely operated, aerially surveyed, and properly maintained. For larger diameter pipelines, a system of access roads is required to facilitate maintenance. Table 4.2-2 summarizes existing large diameter pipelines in the CIAA.

Pipeline corridors that parallel Gateway West are most important for cumulative effects because of their contribution to habitat fragmentation and land use limitations. A 24-inch pipeline operated by Williams Northwest Pipeline parallels Gateway West for the

longest distance along the Segment 8 Revised Proposed Route, a distance of approximately 85 miles.

Table 4.2-2. Existing Large Diameter Pipelines within the Vicinity of the Project Area

Operator	Diam. (in)	Product Transported	Parallels Gateway West		Comments
			Segment	Mileposts	
Northwest Pipeline Corp	16-30	Natural Gas	8	94.5 and 100	Crosses Segment 8 and 9 Revised Proposed Routes and other routes

Source: Ventyx 2012; PennWell 2008

Large-diameter pipelines are typically associated with networks of smaller distribution pipelines designed to transport product to consumers, tanks, or storage facilities. These distribution lines are smaller in diameter and do not require the infrastructure (e.g., roads) associated with larger pipelines.

4.2.1.3 Existing Roads

Roads within the Gateway West area include interstate highways, U.S. highways, state highways, county roads, as well as numerous rural roads. The Project area is primarily rural with the greatest densities of roads occurring near cities and towns. Existing road densities range from 1.2 to 2.3 miles per square mile. Major roads that parallel the proposed transmission line are of greatest interest for cumulative effects because of their linear nature and thus contribution to habitat fragmentation and their potential to inhibit movement by wildlife. Table 4.2-3 summarizes locations where existing interstate highways, U.S. highways, and state highways parallel the proposed transmission line ROW.

Table 4.2-3. Locations Where Existing Major Roads (Interstate, U.S., and State Highways) Parallel Segments 8 and 9 Revised Proposed Routes, Other Routes, and Variations

Transmission Line Segment/Variation	Mileposts Paralleled[1/]
Segment 8 Revised Proposed Route – Total Length	57.4-58.7, 88.0-91.8
Segment 8 Revised Proposed Route – Existing 500-kV Removal	No Parallel Roads
Route 8G	117-121
Route 8H	No Parallel Roads
Segment 9 Revised Proposed Route – Total Length	No Parallel Roads
Segment 9 Revised Proposed Route – Comparison portion for Toana Road Variations 1/1-A	No Parallel Roads
Toana Road Variation 1	No Parallel Roads
Toana Road Variation 1-A	No Parallel Roads
Segment 9 Revised Proposed Route – Existing 138-kV Removal	110-112
FEIS Proposed 9	103.7 – 117.9, 137.0-152.7
Route 9K	110-112

1/ Within 1 mile of route centerline.

There are also numerous county and other rural roads within the Project area. A landscape connectivity analysis was conducted to meaningfully summarize the effects of existing roads on the landscape. Fragment sizes were assessed for habitats extending up to 4 miles from either side of the centerline of each route.

4.2.1.4 Existing Power Generation Facilities

The generation of power is the first process in the delivery of electricity to consumers. Electricity is most often generated at a power station by electromechanical generators, primarily driven by heat engines. The combustion of fossil fuels (coal, natural gas, and petroleum) supplies most of the heat to these engines. Other sources of heat in the Project area include geothermal power. Electricity is also generated by harnessing the energy of flowing water (hydropower) and the wind. The following discussion describes the power generation facilities within the Gateway West area.

Existing Coal-fired Power Plants

Coal-fired power plants generate energy through the combustion of coal, one of the major fossil fuels. These plants are designed on a large scale for continuous operation, and typically have a lifespan of 30 to 50 years. Byproducts of coal-fired power plants include waste heat; flue gas from fossil fuel combustion containing carbon dioxide and water vapor, as well as nitrogen, nitrous oxides, sulfur oxides, fly ash, mercury; and solid waste ash. Greenhouse gas and particulate emissions from coal-fired plants have been identified as major contributors to air pollution and acid rain, and have been linked to both human health issues and climate change.

For the cumulative effects analysis, coal-fired power plants must be considered for their impacts on air quality in the Project area. The CIAA for air quality includes the state of Idaho. There are three operating coal-fired power plants in the CIAA; see Table 4.2-4 and Figure E.24-2 in Appendix E). The Amalgamated Sugar plants are located north of the Segment 8 Revised Proposed Route. These plants have contributed to the existing air quality in the CIAA and will continue to do so as long as they operate.

Table 4.2-4. Existing Coal-Fired Power Plants in Idaho

Project	Proponent	Production Capacity	County Crossed by Gateway West?	General Location
Amalgamated Sugar – Nampa	Amalgamated Sugar Co.	9 MW	Y	Canyon County
Simplot Don Plant	Simplot Leasing Corp.	16 MW	Y	Power County
Amalgamated Sugar – Twin Falls	Amalgamated Sugar Co.	10 MW	Y	Twin Falls County

Source: Ventyx 2010; Platts 2009

Existing Oil-fired and Diesel-fired Power Plants

Power plants that burn oil (petroleum or diesel) to produce electricity are similar in general principle and operation to other fossil-fueled plants including coal-fired and natural gas-fired plants and are a minor component of power production in the CIAA. Oil or diesel is burned to produce steam to power a steam turbine and generator. Byproducts from combustion include carbon dioxide, water vapor, nitrogen, nitrous oxides, and sulfur oxides. There are no existing oil- or diesel-fired power plants in the SEIS CIAA.

Existing Natural Gas-fired Power Plants

Natural gas-fired power plants are an important source of power generation in the Project area involving a process that begins with the extraction of natural gas, continues with its treatment and transport to the power plants, and ends with its combustion in boilers and turbines to generate electricity. By-products of natural gas-fired power plants include ethane, propane, butanes, pentanes and higher molecular weight hydrocarbons, elemental sulfur, and sometimes helium and nitrogen. However, compared to other fossil fuels such as petroleum and coal, natural gas is cleaner burning and produces less carbon dioxide per unit energy released (e.g., approximately 45 percent less carbon dioxide than coal-fired plants and 30 percent less than petroleum-fired plants for an equivalent amount of heat [EIA 1999]). There are five existing natural gas-fired power plants over 20 MW in size in the CIAA that are considered in relation to cumulative effects due to their impacts on existing air quality (see Table 4.2-5 and Figure E.24-2 in Appendix E). Several of these turbines serve dedicated industrial needs and do not supply electricity to the public.

Table 4.2-5. Existing Natural Gas-Fired Power Plants 20 MW or Larger in Idaho

Project	Proponent	Production Capacity	Crossed by Gateway West	Location
Bennett Mountain	Idaho Power	173 MW	Y	Elmore
Mountain Home Generation Station/ Evander Andrews	Idaho Power	270 MW	Y	Elmore
Langley Gulch	Idaho Power	300 MW	N	Payette
Rathdrum	Avista	166 MW	N	Kootenai
Rathdrum Power LLC	Rathdrum Power LLC	299 MW	N	Kootenai

Source: Ventyx 2010; Platts 2009; IPC 2015

Existing Geothermal Facilities

Geothermal energy generation is the process of using the heat of the earth to produce useable energy. The geothermal plants in the Project area generate electricity, which requires water temperatures above 200°F. Wells are drilled into a geothermal reservoir, which brings the geothermal water to the surface, where its heat energy is converted into electricity at a geothermal power plant. Geothermal power production requires the construction of large-scale power plants, which emit nitrous oxide, hydrogen sulfide, sulfur dioxide, particulate matter, and carbon dioxide, although these levels are low relative to fossil fuel emissions (BLM 2008d). The expected lifespan of a geothermal plant is 20 to 30 years.

In January 2008, the first geothermal power plant began commercial operations in Idaho (Idaho Office of Energy Resources 2009). The Raft River Phase I geothermal project, owned and operated by U.S. Geothermal, is located in southern Idaho, approximately 200 miles southeast of Boise. The Raft River facility has a nameplate production capacity of 15.8 MW. Currently, net electrical power output is between 10.5 and 11.5 MW. This project is under a 20-year contract with Idaho Power (DOE 2009).

Existing Wind Energy Facilities

Wind energy facilities consist of a collection of turbines that are used for production of electric power. Turbines have power ratings ranging from 250 watts to 5 MW; however, most turbines in use at utility-scale facilities range from 700 kW to 3 MW. At utility-scale facilities, the turbines are interconnected by a communications network and a medium voltage (34.5-kV) collection system, typically buried underground, which carry power generated by the turbines to a substation. At the substation, this medium-voltage electrical current is increased in voltage with a transformer for connection to the high-voltage transmission system, which feeds into the existing grid. A large wind farm may consist of a few dozen to several hundred individual wind turbines, and cover an extended area of hundreds of square miles. Turbines can be added to an existing facility as electricity demand grows. Other components of wind energy facilities include a permanent system of access roads used for routine maintenance, operations and maintenance facilities, and a transmission line connecting the facility to the grid. Usually the existing land uses on site can be maintained during facility operation. The typical lifespan of a utility-scale wind energy facility is 20 to 30 years.

There are multiple wind energy facilities in Idaho ranging in capacity from 1.3 to 200 MW. Table 4.2-6 lists facilities 10 MW and larger, and Figure E.24-2, Appendix E, illustrates their locations.

Table 4.2-6. Existing Wind Energy Facilities 10 MW and Larger in Idaho

Project	Proponent	Production Capacity (MW)	Location
Idaho			
Bennett Creek Windfarm	Bennett Creek Windfarm LLC	21	Elmore
Burley Butte Wind Park	RP Wind ID LLC	20	Cassia
Camp Reed Wind Farm	RP Wind ID LLC	23	Elmore
Cassia Gulch Wind Park	Cassia Gulch Wind Park LLC	19	Twin Falls
Cassia Wind Farm	John Deere Wind	11	Twin Falls
Cold Springs Wind Farm	Aegis Renewables LLC	22	Twin Falls
Desert Meadow Wind Farm	Aegis Renewables LLC	22	Elmore
Fossil Gulch Wind Park	Exergy Development Group, LLC / United Materials	11	Twin Falls
Golden Valley Wind Park	RP Wind ID LLC	12	Cassia
Goshen II	BP Wind Energy / Ridgeline	125	Bonneville
Hammett Hill Windfarm	Aegis Renewables LLC	22	Elmore
High Mesa Wind Project	High Mesa Energy LLC	40	Gooding
Horse Butte Wind Project	Utah Associated Municipal Power Systems	58	Bonneville
Hot Springs Windfarm	Hot Springs Windfarm LLC	20	Elmore
Mainline Windfarm	Aegis Renewables LLC	22	Elmore
Meadow Creek Wind Project	Ridgeline Energy LLC	120	Bonneville
Milner Dam Wind Farm	RP Wind ID LLC	20	Cassia
Oregon Trail Wind Park	Exergy Development Group, LLC	14	Twin Falls
Paynes Ferry Wind Park	RP Wind ID LLC	21	Gooding
Pilgrim Stage Station Wind Park	RP Wind ID LLC	11	Twin Falls
Power County Wind Park North	Power County Wind Park North LLC	23	Power
Power County Wind Park South	Power County Wind Park South LLC	23	Power
Rockland Wind Project	Ridgeline Power Services LLC	79	Power

Table 4.2-6. Existing Wind Energy Facilities 10 MW and Larger in Idaho (continued)

Project	Proponent	Production Capacity (MW)	Location
Rygrass Windfarm	Aegis Renewables LLC	22	Elmore
Salmon Falls Wind Farm	RP Wind ID LLC	21	Twin Falls
Sawtooth Wind Farm	Powerworks, Inc	22	Elmore
Thousand Springs Wind Park	RP Wind ID LLC	12	Twin Falls
Tuana Gulch Wind Park	RP Wind ID LLC	11	Twin Falls
Tuana Springs	John Deere Wind	17	Twin Falls
Two Ponds Windfarm	Aegis Renewables LLC	22	Elmore
Wolverine Creek Energy	Invenergy	65	Bonneville
Yahoo Creek Wind Park	RP Wind ID LLC	21	Twin Falls

Source: Ventyx 2015

Wind energy projects have virtually no impact on air quality compared to conventional fossil fuel-power plants (natural gas, coal, and petroleum) because they emit no air pollutants or greenhouse gases; however, there are concerns over the noise produced by the rotor blades, visual impacts, and bird and bat mortality associated with collisions with rotors, as well as displacement of wildlife from habitats in the vicinity of the wind facility. Thus, they must be considered in relation to their contribution to cumulative effects to these resources.

Existing Hydroelectric Projects

Hydroelectric power generation is the process of using water's energy as it flows from higher to lower elevation, rotating hydraulic turbines to create electricity. It is the most widely used form of renewable energy. Some hydroelectric projects are associated with reservoirs and generate energy by opening intake gates and allowing the water to flow through a pipeline that leads to the turbine. Projects that do not use reservoirs are called "run-of-river" projects because they rely on the normal river flow to generate energy. Energy generated at hydroelectric facilities is then transformed to a higher voltage and distributed via powerlines to the grid.

Once a hydroelectric project is constructed, the project produces no direct waste, and has a considerably lower output level of greenhouse gases than fossil fuel-powered energy plants. However, concerns associated with hydroelectric projects include blockage of fish passage, impacts to stream flow due to water diversion which can adversely affect aquatic and riparian habitats, impacts to water quality by lowering the amount of dissolved oxygen in the water, and increased sediment and nitrification in the reservoir behind the dam due to lack of water flow. In Idaho, most existing hydroelectric projects are located along the mainstem of the Snake River and its tributaries (Figure E.24-2, Appendix E; Table 4.2-7).

Table 4.2-7. Existing Hydroelectric Projects 10 MW and Larger in Idaho

Project	Proponent	Production Capacity (MW)	Waterbody
Idaho			
Albeni Falls	USACE Portland District	42	Pend Oreille River
American Falls	Idaho Power	112	Snake River
Anderson Ranch	U.S. Bureau of Reclamation	40	South Fork, Boise River
Arrowrock	Arrowrock Hydroelectric Project	15	Boise River
Bear River Narrows	Twin Lakes Canal Co	11	Bear River
Black Canyon	U.S. Bureau of Reclamation	10	Payette River
Bliss	Idaho Power	81	Snake River
Brownlee	Idaho Power	744	Snake River
C.J. Strike	Idaho Power	94	Snake River
Cabinet Gorge	Avista	255	Clark Fork River
Cascade	Idaho Power	12	Payette River
Dworshak	USACE Northwestern Division	400	North Fork Clearwater River
Gem State	City of Idaho Falls	23	Snake River
Grace	PacifiCorp	33	Bear River
Hells Canyon	Idaho Power	392	Snake River
Lower and Upper Malad	Idaho Power	24	Malad River
Lower Salmon	Idaho Power	72	Snake River
Lucky Peak	Boise-Kuna Irrigation District	83	Boise River
Milner	Idaho Power	61	Snake River
Minidoka	U.S. Bureau of Reclamation	28	Snake River
Oneida	PacifiCorp	28	Bear River
Oxbow Dam	Idaho Power	220	Snake River
Palisades	U.S. Bureau of Reclamation	176	South Fork Snake River
Post Falls	Avista	18	Spokane Rover
Shoshone Falls	Idaho Power	78	Snake River
Smith Falls Hydroelectric Project	Eugene Water and Electric Board	20	Smith Creek, ID
Soda	PacifiCorp	15	Bear River
Swan Falls	Idaho Power	30	Snake River
Twin Falls	Idaho Power	53	Snake River
Upper Salmon Falls A	Idaho Power	18	Snake River
Upper Salmon Falls B	Idaho Power	17	Snake River

Source: Platts 2009; IPC 2011b; BOR 2011; Ventyx 2012

Existing Biomass and Cogeneration Facilities

Biomass is any organic non-fossil material of biological origin. Biomass can be utilized for the production of bio-fuels and bio-products, as well as the generation of alternative energy at biomass energy facilities. Biomass facilities can generate energy through the combustion of biomass and subsequent heating of boilers. Biomass energy production requires the burning of substances that can emit carbon dioxide and other air pollutants; however, when burned efficiently, biomass can be a cleaner burning fuel than petroleum or coal (WSFD 2007).

In general, biomass energy facilities consist of facilities whose sole purpose is the conversion of biomass to energy; however, some facilities can convert the biomass that is created as a byproduct of their primary function into energy (e.g., lumber mills that burn sawdust/wood-chips in a boiler). These types of facilities are referred to as

cogeneration plants. Privately owned cogeneration plants can generate the electric power necessary to run the facilities' mills and factories, thereby reducing the facilities dependence on public utilities, or in some cases they can provide additional power to the energy grid. Cogeneration facilities would have similar impacts on air quality as biomass facilities, but would have less impact on lands because these facilities are built within the footprint of existing buildings.

There are 22 existing biomass and cogeneration facilities within Idaho, with power generated at these facilities ranging from 0.9 to 113 MW of energy (Brenneman 2014). The largest of these is the Potlatch Corporation facility (located in Lewiston and operated by Avista Corporation), which currently generates 113 MW of energy (see Table 4.2-8).

Table 4.2-8. Existing Biomass and Cogeneration Projects 10 MW and Larger in Idaho

Project	Proponent	Production Capacity (MW)	Location
Don Plant - Phosphate Fertilizer	Idaho Power	16	Pocatello
Magic West - Glenns Ferry	Idaho Power	10	Elmore County
Potlatch Corporation	Avista Corporation	113	Lewiston
Renewable Energy of Idaho	Idaho Power	18	Gem County
Rupert Cogen	Idaho Power	10	Minidoka County
Simplot Pocatello	Idaho Power	12	Power

Existing Solar Facilities

There are no existing solar facilities within the vicinity of the Project area.

4.2.1.5 Existing Resource Extraction Activities

Basal bedrock predominates in the Snake River Valley of southern Idaho. The predominant mineral resources here consist of materials such as sand and gravel, clay, road base, fill, or building stones. The basalt does not contain economic quantities of metallic or energy-related mineral deposits.

4.2.1.6 Existing Agricultural Areas, including Livestock Grazing, Cropland, and CAFOs

Please see Section 3.17 – Land Use and Recreation, and Section 3.18 – Agriculture, for details of these activities. Note that grazing on lands managed by the BLM is controlled to maintain or improve existing watershed conditions.

4.2.1.7 Existing Residential, Commercial, and Industrial Developments

Please see Section 3.17 – Land Use and Recreation for details of these activities.

4.2.1.8 Existing BLM Activities

BLM activities in the Project area include:

- Paradigm Project – a system of fuel breaks along I-84 and areas north between Boise and Glenns Ferry to help manage wildfire.
- Soda Fire Emergency Stabilization and Rehabilitation Plan – in August 2015, the Soda fire affected rangelands in both Idaho and Oregon, impacting lands managed by the BLM Boise District and Vale District offices and burning a total of 279,144 acres across multiple jurisdictions. Treatments in this plan are

intended to reduce soil erosion, re-establish desired vegetation, and protect cultural resources.

- Multiple livestock grazing permit renewals.
- Travel Management Planning in Owyhee County.
- Dewey-Levie Land Exchange – BLM is proposing to exchange 80 acres of public land in Ada County for 78 acres of private land in Gem County located adjacent to the long-billed curlew ACEC.
- Wildhorse Herd Management Areas – in Owyhee County along the western end of the Project area that would have potential effects to vegetation and habitat similar to other livestock grazing.

4.2.2 Reasonably Foreseeable Actions

This section lists activities that are known to the public through formal announcement and includes projects that have applied for a permit from a federal, state, or local agency. In some cases, those projects are "on hold" and are not being actively pursued because of the economic downturn and financial uncertainty. However, if the project proponent has not withdrawn the application for a permit, those projects are still listed in this section and considered in this analysis.

NEPA requires analysis of "reasonably foreseeable" future actions and does not require speculation about unknown future events. Therefore, this cumulative effects analysis is generally limited to projects with known locations and descriptions, usually those for which a permit application has been filed or other public announcement made with enough detail to allow for comparison provided.

4.2.2.1 Proposed Transmission Lines

The PEIS for the WWE corridors anticipated the proposal and construction, not of individual projects, but of interstate electric transmission lines and natural gas and product pipelines in general (DOE and BLM 2008).

Where linear facilities are proposed that would cross federally managed lands, the environmental analysis for each project would determine areas of incompatibility with underlying land management classifications. If the approval of the Project preceded those other facilities, and that approval included one or more land management plan amendments that changed management classifications, then additional projects could be permitted in that area without their own plan amendments. If approval of this Project were accompanied by a land management plan amendment that only allowed this Project to be constructed and operated but did not change the underlying land allocation, then approval of any additional project proposed for that land classification area would have to be accompanied by a project-specific analysis and land management plan amendment.

This section includes transmission lines that have been proposed but now are on hold awaiting a better economic climate. They are still being taken into account for cumulative effects, but are less certain to move forward than the projects being actively pursued. These "on-hold" projects are indicated by gray shading in Table 4.2-9, which summarizes the known proposed transmission lines. Figure E.24-1 in Appendix E shows where the proposed transmission lines would parallel the proposed Project.

Table 4.2-9. Proposed Transmission Lines in the Vicinity of the Project Area

Name	Proponent	Voltage	Length (miles)	In-Service Date	Start	End	Parallels Gateway West Project		Comment
							Segment	Mileposts	
Boardman to Hemingway	Idaho Power	500 kV AC	298	2020	Boardman Substation, OR	Hemingway Substation, ID	8	0	Arrives from northwest to Hemingway Substation.
							9		
							9	1–10	
Southwest Intertie Project, north portion	Great Basin Transmission (subsidiary of LS Power)	500 kV AC or DC	515	2015	Midpoint Substation, ID	Southern NV	9	all	Major permits have been granted and construction is pending completion of commercial arrangements. Could affect lands along the Segment 9 Revised Proposed Route, FEIS Proposed 9, and 9K.
Hemingway to Captain Jack	PacifiCorp	500 kV AC	320	tentative	Hemingway Substation, ID	Captain Jack Substation, OR	8,9	0	Leaves from Hemingway towards Captain Jack near Malin, OR, on the CA border.

Note: Gray shading indicates project proposed but on hold.
Sources: Information from Web sites for Idaho Power and Great Basin Transmission LLC

While it is unlikely that there would be sufficient generation or load to justify all the lines proposed, the BLM must treat each complete application for a ROW equally, provided that it is submitted by a responsible, financially capable entity with demonstrated ability to complete the proposed project. Where additionally proposed transmission lines are inconsistent with the underlying land management plans, it is assumed for the purposes of this analysis that one or more plan amendments will be approved that would either allow the additional projects without changing underlying land allocations or would change those allocations in some areas. Therefore, and for the purposes of a cumulative impacts analysis, the agencies are assuming that all lines would be built and that all additional land management plan amendments would be approved to permit their construction and operations.

There are no proposed lines that would parallel Segments 8 and 9 for a substantial distance. Table 4.2-9 shows proposed transmission lines that begin or end at substations used or constructed by Gateway West.

4.2.2.2 Proposed Pipelines

There are no large pipelines proposed in the vicinity of the Project area.

4.2.2.3 Proposed Roads

For the purpose of this analysis, the agencies assume that new roads would most likely be constructed in areas with high population density, or areas with projected increases in population growth. See the summary of residential development for additional discussion. The Idaho Transportation Department lists future projects but none is listed for the CIAA. No additional new roads or major changes to existing roads within the vicinity of the Project area have been proposed.

4.2.2.4 Proposed Energy Generation Facilities

This section includes facilities that have been proposed but now are on hold awaiting a better economic climate. These “on-hold” projects are indicated by gray shading in the tables. They are still being taken into account for cumulative effects, but are less certain to move forward than the projects being actively pursued.

Proposed Natural Gas-fired Power Plants

There is one natural gas-fired power plant proposed within the CIAA in Idaho (Table 4.2-10 and Figure E.24-2, Appendix E). The Gateway plant, proposed by Mountain View Power, Inc., is a 180-MW plant that would be located north of the Segment 8 Revised Proposed Route in Ada County. The installation of new natural gas energy generation facilities may require associated elements such as the construction and drilling of wells, access roads, pipelines, production facilities, and transmission lines to collect the natural gas from its source, transfer it to the production facility, and transmit power to the grid.

Table 4.2-10. Proposed Natural Gas-Fired Power Plants in Idaho

Project	Proponent	Production Capacity	Location
Gateway	Mountain View Power Inc.	180 MW	Ada County

Sources: Information from Web sites for Idaho Energy Ventures

Proposed Geothermal Facilities

According to the Idaho Office of Energy Resources, and referencing the Geothermal Energy Association, an expansion to the existing Raft River plant, as well four other projects around the state, is underway as of 2009 (GEA 2009). Three additional projects were proposed in 2010. These proposed geothermal projects are summarized in Table 4.2-11. In addition to these sites, there are more than 20 additional locations within Idaho are suitable for potential geothermal energy development and are currently undergoing testing (GEA 2009).

The BLM and Forest Service prepared a joint PEIS to analyze the leasing of BLM-managed and NFS lands with moderate to high potential for geothermal resources in 11 western states. The 2008 ROD (1) allocates BLM-managed lands as open to be considered for geothermal leasing or closed for geothermal leasing, and identifies those NFS lands that are legally open or closed to leasing; (2) develops a reasonably foreseeable development scenario that indicates a potential for 12,210 MW of electrical generating capacity from 244 power plants by 2025, plus additional direct uses of geothermal resources; and (3) adopts stipulations, BMPs, and procedures for geothermal leasing and development (BLM 2008d).

Table 4.2-11. Proposed Geothermal Projects in Idaho

Project	Proponent	Production Capacity	Phase of Development[1/]	Location
China Cap	Idatherm LLC	50 MW	1	Caribou County
Crane Creek	Agua Caliente	175 MW	3	Washington County
Idaho Falls	Idatherm LLC	100 MW	1	Bingham and Bonneville County
Raft River Expansion	U.S. Geothermal	50 MW	3	Southern Cassia County
Willow Springs	Idatherm LLC	100 MW	1	Cassia County

1/ Development Phase: 1—Identifying site, secured rights to resource, initial exploration drilling; 2—Exploratory drilling and confirmation being done; Power Purchase Agreement (PPA) not secured; 3—Securing PPA and final permits; 4—Production Drilling Underway/Facility Under Construction.

Proposed Wind Energy Facilities

There are no proposed wind energy facilities within the vicinity of the Project area.

Transmission for Proposed Wind Energy Facilities

There are no proposed transmission lines for wind energy facilities in the vicinity of the Project area.

Proposed Hydroelectric Projects

There are no conventional new hydroelectric or proposed pumped storage hydroelectric projects proposed in the vicinity of the Project area.

Proposed Biomass and Cogeneration Facilities

Biomass feasibility studies are currently being conducted in the western states, and multiple biomass and cogeneration projects are currently being considered. However, at this time, formally proposed projects are limited due to current economic feasibility. Eight projects have been proposed in Idaho, with estimated power production ranging from 1.2 to 13 MW. The Yellowstone Tower Combined Heat and Power Plant that

would generate 10 MW of energy is the only project that is currently proposed in Idaho that would generate at least 10 MW of energy (Brenneman 2014).

Proposed Solar Facilities

Solar power generation is the process of converting solar energy into electricity. Multiple methods are used at existing solar facilities to convert solar energy to electricity, including photovoltaics (using semiconductors that exhibit the photovoltaic effect) and concentrated solar thermal (focusing solar energy to produce steam). Most utility-scale solar facilities in the U.S. are located in the southern portion of the country where solar light is more intense and the light regime is more predictable. Solar facilities have low impacts on air quality compared to conventional fossil fuel-power plants; however, due to the large area of ground disturbance associated with utility-scale solar facilities, they contribute to habitat loss and fragmentation. In addition, there is some concern regarding the impact that these facilities could have on avian species (due to burns or collisions with project mirrors); however, very little post-construction data are available regarding this potential effect.

The proposed Grand View Solar I project had a signed power purchase agreement with Idaho Power in June 2010 and approval by the Elmore County Commission, but has not begun construction. The IPUC approved two solar development contracts in November 2014; one is a 40 MW proposed project southeast of Kuna and one is an 80 MW proposed project near Grandview. Idaho Power has asked the IPUC to consider another 11 proposed solar projects with the potential to produce 281 MW (IPUC 2014). All proposed projects have scheduled online dates for December 2016. Table 4.2-12 lists these projects.

Table 4.2-12. Proposed Solar Energy Facilities in Idaho

Project	Proponent	Production Capacity (MW)	Location
Grand View Solar I	Alternative Power Development	10	Elmore
Grand View Solar II	Robert Paul	80	Elmore
Boise City Solar	Intermountain Energy Partners	40	Ada
Mountain Home Solar	Intermountain Energy Partners	20	Elmore
Pocatello Solar 1	FirstWind/SunEdison	20	Power
Clark Solar 1	Intermountain Energy Partners	71	Elmore
Clark Solar 2	Intermountain Energy Partners	20	Elmore
Clark Solar 3	Intermountain Energy Partners	30	Elmore
Clark Solar 4	Intermountain Energy Partners	20	Elmore
Murphy Flat Power	FirstWind/SunEdison	20	Owyhee
Simco Solar	Intermountain Energy Partners	20	Elmore
American Falls Solar	FirstWind/SunEdison	20	Power
American Falls Solar II	FirstWind/SunEdison	20	Power
Orchard Ranch Solar	FirstWind/SunEdison	20	Ada

Sources: IPUC 2014.

4.2.2.5 Proposed Resource Extraction Activities

Proposed Oil and Gas Extraction

There are many thousands of acres of oil and gas leases that have not yet been developed. There is very little oil and gas exploration, extraction, and development in

Idaho and most activities are small exploratory operations. The intensity of development and the degree to which these resources are exploited are dependent on the international and domestic market for petroleum products as well as any government incentives (e.g., depletion allowance) or disincentives (e.g., carbon tax). Although the leases are in place and development could technically take place at any time, the market drivers to exploit them are unknown now. Therefore, it is not possible to quantify the additional amount of environmental impact due to future oil and gas development. The existence of a robust electric grid will continue to support oil and gas extraction by providing the power for the extraction pumps.

4.2.2.6 Proposed Residential, Commercial, and Industrial Developments

The largest area of potential future development near Gateway West in Idaho is in the area of Ada County south of Boise traversed by the Segment 8 Revised Proposed Route, while a smaller area of subdivision and active development is occurring east of the city of Twin Falls in Idaho.

The potentially affected area south of Boise includes land that has been recently annexed by the city of Kuna to include the proposed Osprey Ridge development; however, the City had not received an application for development as of December 2012. This proposed development is discussed further in Section 3.17 – Land Use and Recreation, and shown in Figure 3.17-8 in the FEIS.

4.2.2.7 Proposed BLM Activities

Proposed BLM activities in the Project area include:

- Bruneau-Owyhee Sage-grouse Project – the BLM Boise District is proposing to treat early stage encroachment of juniper within a 10-kilometer radius of approximately 71 sage-grouse leks in Owyhee County. Broadcast prescribed fire and any treatment in old-growth juniper are not included in this proposal.
- Tri-State Fuel Breaks in Owyhee County – a system of fuel breaks to help manage wildfire.
- Soda Fuel Breaks Project – as identified in the Soda Fire Emergency Stabilization and Rehabilitation Plan (BLM 2015d), a system of fuel breaks is proposed to minimize the threat of wildfire. The BLM is proposing 452.6 miles of fuel breaks (34-foot road maintenance improvement with 100 feet of vegetated fuel break on both sides of roads) along existing roads both inside the Soda Fire burn perimeter and outside the burn perimeter to protect values at risk.

4.3 Activities and Potential Shared Resource Impacts

Table 4.3-1 summarizes the resources with the potential for cumulative impacts from Gateway West when considered together with the listed types of activities. The construction of additional transmission lines, particularly those proposed to follow the same route with an offset from the proposed Project, are likely to have the potential for cumulative impacts for all resources analyzed in this document with the exception of environmental justice.

Table 4.3-1. Types of Activities and Areas of Shared Resource Impacts with Gateway West

Type of Activity	Resources Affected
Construction of other new transmission lines	Cultural, socioeconomic, vegetation, special-status plants and animals, weeds, wetlands, wildlife, minerals, paleontological resources, soils, water, land use, agriculture, transportation, air quality, public safety, noise
Operation of existing and new transmission lines	Visual, vegetation, weeds, wildlife (avian), geologic hazards, soils, water, agriculture, EMF, public safety
Construction of New Pipeline	Visual, cultural, socioeconomic, vegetation, special-status plants and animals, weeds, wetlands, wildlife, minerals, paleontological resources, soils, water, land use, agriculture, transportation, public safety, noise
Operation of existing and new pipelines	Visual, vegetation, weeds, geologic hazards, soils, water, agriculture, public safety
Construction of new roads	Visual, cultural, socioeconomic, vegetation, special-status plants and animals, weeds, wetlands, wildlife, minerals, paleontological resources, geologic hazards, soils, water, land use, agriculture, transportation, air quality, public safety, noise
Maintenance and use of new and existing roads	Visual, weeds, wildlife, geologic hazards, soils (if unsurfaced), water, land use, agriculture, transportation, public safety
Operation of existing fossil fuel power generation facilities	Air quality, water
Operation of existing hydroelectric facilities	Wildlife (aquatic species), water, public safety
Construction of new solar facilities	Visual, cultural, socioeconomic, vegetation, special-status plants and animals, weeds, wetlands, wildlife, paleontological resources, geologic hazards, soils, water, land use, agriculture, transportation, air quality, noise
Operation of existing wind facilities	Visual, wildlife (avian species), land use, agriculture
Expansion of residential development	Visual, cultural, socioeconomic, vegetation, special-status plants and animals, weeds, wetlands, wildlife, minerals, paleontological resources, geologic hazards, soils, water, land use, agriculture, transportation, air quality, public safety, noise

4.4 Cumulative Impact Analysis

4.4.1 Introduction

The 2013 FEIS discloses cumulative effects for the entire Gateway West Project (Segments 1 through 10). This SEIS presents effects specific to the Revised Proposed Routes in Segments 8 and 9; Routes 8G, 8H, FEIS Proposed 9, and 9K; and the Toana Road Variations 1 and 1-A.

Note that each of the following resource areas has been analyzed in its respective section of Chapter 3. This analysis relies on the analysis of direct and indirect impacts from Gateway West, as proposed, and considers them in conjunction with the past, present, and reasonably foreseeable projects (listed in Section 4.3), to determine the cumulative impact of all projects taken together. It follows the same order of resources as found in Chapter 3.

4.4.2 No Action Alternative

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and Segments 8 and 9 of the Project would not be constructed. No land management plans would be amended to allow for the construction of this portion of the Project. All of the activities indicated in Section 4.2.2 would likely continue:

- new energy generation, including but not limited to wind farms, would be constructed;
- other transmission lines would be permitted and built;
- oil and gas extraction would continue and would expand geographically;
- residential, commercial, and industrial development projects in or near the vicinity of the Project area would be implemented; and
- demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories.

New generation sources currently in the queue for transmission on Segments 8 and 9 of Gateway West, and those that otherwise would have also requested transmission service in the future, would have to find another means of transmitting their energy to market, but they would likely still be constructed. Other transmission lines currently proposed for construction may be permitted and constructed.

Continued expansion of residential, commercial, and industrial developments is predicted and planned for by various county and city comprehensive plans in the vicinity of the Project area. While the economic recession may have slowed or postponed these developments, there is no evidence or change in local regulation that would indicate that they will not eventually be constructed.

Demand for additional electricity in western cities would likely continue to grow, based on recent trends. The U.S. Energy Information Administration estimates demand for electricity will increase an average of 1.0 percent per year, or 25 percent from 2010 to 2035 (EIA 2010). They further state, "Generation from wind power increases from 1.3 percent of total generation in 2008 to 4.1 percent in 2035" in their base case analysis" (EIA 2010).

If Segments 8 and 9 of Gateway West are not permitted, the demand for transmission services identified by the Proponents would not be met through this Project and the area would have to turn to other proposals to meet the transmission demand. These proposals, especially if responding to interconnection requests from existing facilities and projects under construction, would likely also cross federally managed lands and would be subject to a similar permitting process as for Gateway West. If the same concerns that prohibited the permitting of the Project were to also stop the construction of these other transmission projects, the utilities responsible for meeting their service area demand might need to consider other options, either for permitting or for generation, to meet their consumers' demands. According to McBride et al. (2008), the lack of construction of these transmission lines could result in substantial adverse impacts on the economic growth, including loss of jobs in the Pacific Northwest region,

which includes Idaho as well as Washington, Oregon, Montana, and several Canadian provinces.

4.4.3 National Historic Trails

Segments 8 and 9 of Gateway West and the other current and reasonably foreseeable actions would result in substantial cumulative adverse effects to NHTs. Construction of the Gateway West transmission line and its ancillary facilities could directly impact the existing Oregon NHT, North Alternate Study Trail, and its associated visual contexts, recreational values and settings, and associated cultural resources and landscapes. Construction or other ground-disturbing activities could directly or indirectly impact previously undetected components of the Oregon NHT. Such impacts are likely to be adverse. Identification of new or previously recorded segments and sites associated with the Oregon NHT and North Alternate Study Trail could result in increased use of existing and new access roads and may encourage unauthorized site access, artifact collection, and vandalism. Impacts on the setting and feeling of the Oregon NHT may be introduced through the addition of structural elements to the landscape. Construction of transmission line structures introduces an indirect (visual) impact upon the visual contexts, recreational values, and historic/cultural settings of the Oregon NHT.

Other current and reasonably foreseeable activities with ground-disturbing activities (essentially all those listed in Section 4.2 of the SEIS) have the potential for additional effects on NHTs and associated resources. For example, the Boardman to Hemingway Transmission Line Project Draft EIS (2014) found that the Proposed Action in Segment 6 (Treasure Valley) would have a high potential for impacts to cultural resources due to the presence of three NRHP-listed properties, one of which is the Oregon Trail. The impact threshold for “high” impacts was defined as “severely modified” as taken from BLM Manual 6280 indicating “adverse to the nature and purpose and primary uses” of the Oregon Trail. Visually prominent Gateway West activities associated with the Oregon Trail are included in Appendix J to this FSEIS, which includes maps of each analysis unit (see Section 3.1 of this SEIS) and the locations of existing transmission lines and wind farms. These projects have already affected the visual environments around the Oregon NHT and the North Alternate Study Trail and, in some areas, already degraded the visual, cultural, recreational, and natural resources, qualities, values, and settings related to the trails primary purpose and use. Appendix J also provides an indication of how the Project either falls into the immediate foreground of trail-related settings, thus having a larger impact than the existing projects, or falls into the background, where it would largelybe obscured by existing energy infrastructure.

The Proponents of Gateway West have committed to avoiding direct effects to NRHP-eligible features wherever feasible. Avoidance of indirect effects is not likely to be possible. HPTPs would be prepared for areas that may experience direct or indirect effects. Treatment plans would be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for that work element. An indirect effect of Gateway West is that potential for increased access due to new access roads may encourage unauthorized site access, artifact collection, and vandalism as well as visual effects caused by construction of the Project. This is the case with all of the current and reasonably foreseeable projects that have new or improved access roads associated with them.

4.4.4 Visual Resources

The 5- to 15-mile-wide CIAA for visual resources includes a variety of landscapes such as mountainous areas, broad agricultural valleys, expanses of shrub steppe that have been or are still used for livestock grazing, and, for many portions of the Segments 8 and 9 Revised Proposed Routes and other routes, one or more existing transmission lines. Section 3.2 – Visual Resources discusses the direct and indirect effects of the Revised Proposed Routes and other routes and route variations on visual resources. The Revised Proposed Routes were designed to take advantage of existing utility corridors to minimize the introduction of a new transmission facility into a previously undisturbed landscape and reduce the visual impact on the landscape. However, even with careful siting and the implementation of mitigation measures, the Revised Proposed Routes, as is the case with the other routes considered in the SEIS, are expected to have a substantial, unavoidable adverse visual impact on the landscape in certain locations.

The Idaho landscape varies within the CIAA from mountainous terrain with agricultural valleys and scattered rural residences to expanses of sagebrush and grass rangelands south of the Snake River. There is very little oil, gas, or other extractive industry in the Segments 8 and 9 area, and much of the landscape has an agricultural or ranching character. Exceptions are found near urban expansion areas, south of Boise, north and south of Twin Falls, and to a lesser extent on the outskirts of smaller towns, where the landscape is developing suburban characteristics.

From Midpoint to Hemingway (Segment 8), there are numerous existing transmission lines in a broad agricultural setting. For the Revised Proposed Route, 8G, and 8H, the addition of one set of 500-kV structures would not change the character of the area but could have a site-specific visual impact in agricultural or residential areas. There are no known future projects or actions that could add to the impacts of the Project. The cumulative visual impact, when considered together with the likely continued development, especially in the Kuna area, would be substantial. The impacts of the Revised Proposed Route and the other Segment 8 routes, given the present landscape and its activities, are addressed in Section 3.2 – Visual Resources.

From Cedar Hill to Hemingway (Segment 9), the Revised Proposed Route includes both single-circuit and double-circuit sections (as does 8H, which crosses through Segment 9). Most of the route would have new single-circuit 500-kV lines. However, an existing 138-kV line within the SRBOP would be removed and both the Gateway West 500-kV and 138-kV lines would be placed on double-circuit towers. There are two short route variations to the Segment 9 Revised Proposed Route in the Toana Road area. There are no known future projects or actions that could add to the visual impacts of these variations. The impacts of the Revised Proposed Route, the other Segment 9 routes, and the variations, given the present landscape and its activities, are addressed in Section 3.2.

4.4.5 Cultural Resources

In some areas, the construction of Segments 8 and 9 of the Gateway West transmission line could lead to the establishment of a corridor in which other lines may be installed in the future. There is a potential that cumulative impacts to the visual settings for some

cultural resources would occur due to the establishment of the Project's corridor and the subsequent construction of additional transmission lines (see Section 4.2).

Gateway West could result in direct damage to historic properties (i.e., cultural resources that are listed in or eligible for listing in the NRHP), such as prehistoric or historic archaeological sites, districts, buildings, trails, roads, and landscapes due to construction or other ground-disturbing activities. Other current and reasonably foreseeable activities with ground-disturbing activities (essentially all those listed in Section 4.2) have the potential for additional effects on these resources.

The Proponents of Gateway West have committed to avoiding historic properties wherever feasible. The PA (Appendix N of the FEIS) provides for site-specific HPTPs to be reviewed and approved by the BLM prior to issuance of a Notice to Proceed for that work element. Gateway West would introduce "visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features" (36 CFR 800.5(a)(2)(v)) with regard to the setting for historic trails where the Project crosses those trails. This would be considered an adverse effect. The creation of a corridor would introduce additional elements, from other projects, that would further diminish a property's historic setting.

One indirect effect of Gateway West would be the potential for increased access due to new roads that may encourage unauthorized site access, artifact collection, and vandalism. This is the case with all of the current and reasonably foreseeable projects that have new or improved access roads associated with them.

Gateway West and the rest of the current and reasonably foreseeable actions would result in substantial cumulative adverse effects to known historic properties. All projects with a Section 106 nexus would complete surveys and record sites, contributing to the knowledge base in the CIAA. Each project also has the potential for inadvertent damage to previously undetected resources during construction, though all reasonable precautions would be built into each PA or HPTP governing monitoring of and compliance with avoidance, minimization, and reporting requirements.

4.4.6 Socioeconomics

Within the Socioeconomic CIAA, past, present, and reasonably foreseeable activities that could combine with Gateway West and result in cumulative effects to the socioeconomic environment include projects with the potential to affect population, the economy and employment, housing, property values, education, public services, and tax revenues.

The effects from past and present activities are generally accounted for in the baseline socioeconomic environment characterized in Section 3.4.1. These past and present activities generally include construction and operation of existing transmission line and other linear projects, development and operation of energy generation projects, and other residential and commercial development (see Section 4.2.1). Ongoing and reasonably foreseeable projects with the greatest potential to combine with the proposed Project and result in cumulative impacts include 1) current construction projects that would continue through 2015 and beyond, or 2) reasonably foreseeable actions that would be in construction between June 2015 and December 2021, when

the majority of construction activities would occur on Segments 8 and 9. Cumulative effects on socioeconomic resources do not differ substantially by route.

Section 4.2.2 identifies a large number of reasonably foreseeable projects proposed within the Socioeconomic CIAA, including other transmission lines and energy generation facilities. In cases where other construction activities coincide in space and time with Gateway West, there would be an increase in the projected influx of temporary workers and increased demand for temporary housing resources and other goods and services. Peak temporary population increases for Gateway West are expected to range from less than 0.1 percent of the existing (2013) population (Ada County) to 0.7 in Owyhee County. These potential impacts and associated cumulative effects would be short-term and temporary. Operation of all 10 segments of the Project would require an estimated permanent staff of approximately 12 employees, with fewer needed for Segments 8 and 9 only. All permanent staff is expected to be hired locally. As a result, Gateway West is not expected to result in any permanent changes in population and would have no effect on short- or long-term population trends.

Local Project-related expenditures, employment, and construction-related earnings from the Project would have a positive impact on the local economy and employment for the duration of construction. These impacts would be increased if ongoing and other reasonably foreseeable construction activities were to coincide in time with the proposed project. The resulting cumulative effects would be positive and short-term. Long-term economic impacts from the Project would be primarily associated with operation and maintenance-related expenditures on materials and supplies. These impacts would be small, especially when compared to the construction-related impacts, and the incremental addition of these impacts to other ongoing and reasonably foreseeable projects would be relatively minor.

A temporary influx of construction workers associated with other ongoing and reasonably foreseeable construction projects that coincide in time with the Project, could result in shortages in housing for temporary construction workers in some locations depending on actual construction schedules (which would be affected by permitting processes, prevailing economic conditions, and the availability of construction contractors), as well as demand from other sectors of the economy, including the oil and gas and travel and tourism industries. This potential housing shortage could affect not only other project construction workers, but also local residents and visitors vying for the same facilities. Construction-related cumulative impacts on housing would be short-term and temporary. The Project would require an estimated permanent staff of approximately 12 employees, all of whom are expected to be hired locally, and would not add cumulatively to long-term housing demand.

The temporary relocation of construction workers to the socioeconomic CIAA would create increased demand for community services such as education, medical facilities, municipal services, police, and fire. Other ongoing and reasonably foreseeable construction projects that coincide in time with the Project could add cumulatively to this demand. These potential cumulative effects would be short-term and temporary.

Construction of the Project would generate sales and use tax revenues through Project expenditures on construction supplies and equipment. Construction of the other

reasonably foreseeable projects identified in Section 4.2.2 would likely result in similar short-term increases in tax revenues, depending on the size and nature of the project.

Following construction of the Project, projected ad valorem (property) tax revenues in Idaho would range from 0.3 percent (Ada County) to 22.8 percent (Owyhee County) of 2014 property tax revenues (County taxing district only). Operations of Gateway West would also generate sales and use tax revenues from local operation and maintenance expenditures. Other reasonably foreseeable projects, if constructed and not tax-exempt, would also result in increases in ad valorem and property tax revenues in the counties where they are located. Note that 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 (see Section 3.4.2.2).

4.4.7 Environmental Justice

Data compiled by the U.S. Census at the block group level indicate the potential presence of minority and low income communities in the vicinity of the Project area. The Project is not expected to generate high or adverse human health or environmental effects on nearby communities. The Project would, however, have high, long-term visual impacts in some locations where the structures and overhead conductors would be visible from private residences, including parts of the Census Block Groups that have potential minority and low income communities. While these potential impacts exist, overall, the proposed Project does not appear to exhibit systematic bias toward placing the Project in minority or low income communities (see Section 3.5 – Environmental Justice). Cumulative effects on visual resources are discussed above in Section 4.4.4. Local construction expenditures for materials and supplies and spending by workers directly employed by the Project are expected to benefit local economies (see Section 3.4 – Socioeconomics).

4.4.8 Vegetation Communities

The major ecological changes to vegetation that have occurred, and that continue to occur in the CIAA due to past and present actions include changes in vegetation composition and conditions due to fire, grazing, mining, agriculture, infrastructure development, and other forms of development. Of particular concern is the continuing degradation of shrub-steppe habitat, primarily due to increased abundance and dominance of non-native species. Planned activities, including construction of infrastructure and expansion of residential development, would contribute to this overall loss of native vegetation, increase habitat for non-native plants and noxious weeds, and result in the potential loss of rare plant occurrences and habitat (see Sections 3.7 – Special Status Plants and 3.8 – Invasive Plant Species). Grazing, which is prevalent in the Project area, may also affect vegetation by increasing habitat and distribution of noxious weeds and other non-native plants and by causing shifts in native species composition because of differential selection of food plants. These processes will continue into the foreseeable future.

Permanent vegetation removal and disturbance associated with Gateway West transmission line structures, access roads, and associated facilities for all routes would incrementally add to these effects. As noted below, mechanisms for weed distribution

would be minimized by implementing mitigation measures listed in Section 3.6 – Vegetation Communities. However, unauthorized road use could introduce weeds outside the ROW. In addition, by providing increased access, project roads could contribute to the potential for OHV use. Off-road vehicle use could result in further degradation of native vegetation, which would be compounded by the effects of habitat fragmentation (see Section 3.10 – General Wildlife and Fish for a discussion of fragmentation effects).

As documented for sage-grouse and other native habitat-dependent species (e.g., Connelly et al. 2004), there has been a massive reduction in native vegetation in Idaho over the last 200 years. Remnant patches of native vegetation are further threatened by invasive species, grazing pressure, and removal during construction and operation of resource extraction, mining, residential development, and energy infrastructure projects, including transmission lines. The cumulative impact of past and present land uses is considerable. Native vegetation communities through which Gateway West would pass have been reduced to small and often discontinuous patches. While the impact of the Project would be minor compared to the much larger past events, when taken together with various proposed developments as specified in Section 4.2, and when added to the impacts from past and present land use changes, the overall cumulative impact would be substantial.

4.4.9 Special Status Plants

There are six known populations of slickspot peppergrass within 0.5 mile of the Segment 8 Revised Proposed Route. Ground-disturbing activities during construction and operations of the Project have the potential to impact special status plant species either directly or indirectly by disturbing habitat. Projects on federal lands or requiring federal permits would be required to conduct preconstruction surveys to identify and avoid the locations of sensitive plant populations. However, projects not requiring federal permits probably would not conduct surveys and might not avoid habitat or populations entirely. Slickspot peppergrass habitat would be surveyed and avoided to the extent practicable for Gateway West and for other projects with a federal nexus.

Several other special status plant species occur along Segments 8 and 9. The Project has the potential to impact individuals and habitat of these special status plants. Impacts to special status plants, however, do not differ substantially by route. Therefore, cumulative effects of Gateway West would not vary substantially by route. Although, with implementation of survey and avoidance measures, the Project impact to special status plants would be minor, its impacts when added to possibly substantial (but largely unknown) impacts from non-federally licensed activities on remnant habitat for these species, could contribute to a substantial impact.

4.4.10 Invasive Plant Species

Noxious weeds and non-native invasive plant species are locally prevalent across the CIAA, but there are areas that are relatively weed-free or have limited invasive species presence. With implementation of EPMs, the potential spread of existing populations of noxious weeds and invasive plant species would likely be decreased. It is assumed that additional new construction activities would carry similar environmental protection requirements for control of invasive plant species.

Within the CIAA, present activities that could also introduce or spread noxious weeds and invasive plants include the operation, use, and maintenance of existing transmission lines, oil and natural gas pipelines, and roads. Livestock grazing, OHV access to native habitats (whether authorized or not), existing subdivisions and developments that are adjacent to native habitats, as well as the increased potential for wildland fires due to increased human activities can also result in introduction and spread of noxious weeds and invasive plants. Future activities that could add to the introduction or spread of weeds include the construction of new transmission lines, pipelines, energy and mineral extraction facilities, and power plants of all fuel sources; new or relocated grazing; and residential, commercial, and industrial development.

Existing and new operations on public lands would be accompanied by noxious weed prevention and control measures as requirements for use of the public lands. The effectiveness of those measures is greater where the activities are of relatively short duration and are followed by required monitoring and mitigation activities if new noxious weed populations are found. Noxious weed control measures may also be effective for activities that require an operations and maintenance plan and adherence to its terms and conditions such as operations and maintenance of utility ROWs for transmission lines and pipelines and grazing on public lands.

Private landowners vary in the interest and emphasis they put on weed control on their lands and do not necessarily view introduced forage species as weeds. Noxious weeds that are poisonous or reduce the quality of rangeland are more likely to be targeted for control on private lands. Gateway West and other linear projects that cross private lands would be subject to landowner weed control requirements and would be subject to county and state noxious weed control regulations where applicable. Introduction and spread of invasive plants are important regardless of land use, and therefore the impacts of Gateway West on noxious weeds and invasive plants are important regardless of route. Cumulative effects on the introduction and spread of noxious weeds and invasive plants do not differ substantially by route, except by length of the route—longer routes have greater ground disturbance, more access roads, and therefore additional opportunity for introduction or spread of weeds. Given concern for introduction and spread of noxious weeds and invasive plants on both public and private lands, and requirements for the prevention of introduction or spread of noxious weeds imposed on all projects, the cumulative impact of reasonably foreseeable projects, including Gateway West, is not anticipated to be substantial.

4.4.11 Wetlands and Riparian Areas

Section 3.9 – Wetlands and Riparian Areas describes the types of existing wetlands and riparian habitat in the CIAA. Past and planned activities in the CIAA that have likely affected, or have the potential to affect, wetlands and riparian areas include infrastructure development, grazing, and residential development. Any of these types of land development in previously undeveloped areas typically result in an increase in impervious surface area and may lead to increases in erosion and sedimentation, which can have negative effects on wetlands and riparian areas. Alteration of water flow in wetlands, through increases in impervious surfaces or changes to the soils ability to hold water (by compaction), reduces the time that water resides in wetlands or streams in a watershed and can lead to greater flooding or more dry spells in streams. Grazing

may also affect the physical structure of wetlands and riparian habitats in areas where cattle have direct access to streams. There are grazing leases and private land grazing along part of the routes.

Gateway West would result in a minor contribution to the amount of impervious surface in the CIAA as a result of the installation of new structures and the surrounding compacted work area, and the maintenance of permanent access roads. Unpaved roads, when used over the long term, would compact soils and reduce their ability to hold water. In the past, many human activities have affected riparian vegetation and wetland areas. Streams in the CIAA have been affected by diversions of water, dams, dikes, and development, including roads that have altered natural hydrologic functions. Grazing, agriculture, and development, including construction of roads have altered or destroyed wetlands and riparian vegetation. More recent development activities have been more carefully controlled, with limited impacts on wetlands and riparian vegetation due to requirements for compliance with the CWA. Segments 8 and 9 of Gateway West, when taken together with other reasonably foreseeable proposed projects, would, in complying with their federal permits, avoid and minimize impacts to wetlands and riparian areas to the extent feasible and would provide compensatory mitigation where impacts were unavoidable. Cumulative effects for wetland and riparian areas would not vary substantially by route. Therefore, given the minor individual impacts and the requirement for compensatory mitigation, Gateway West, when taken together with other projects that could adversely impact wetlands and riparian areas, would have a minor additional impact on these features.

4.4.12 General Wildlife and Fish

Construction of Segments 8 and 9 of Gateway West would occur in areas that have already been altered by infrastructure development, natural resource extraction activities, and other development, all of which could adversely affect wildlife through direct mortality, disturbance, or habitat removal. Infrastructure development includes both linear (e.g., powerlines, major roads, and oil and gas pipelines) and non-linear (e.g., wind energy facilities, thermal-operated power plants, and geothermal developments) features. Linear features can result in irretrievable losses of habitat; habitat fragmentation and the creation of travel barriers; the spread of invasive species along access roads, ROWs, and disturbed areas; and the facilitation of mammalian predator movement along corridors. Powerline structures also provide perches and nesting substrates for raptors and ravens, potentially facilitating predation for some species (e.g., prairie dogs and grouse). The presence of major roads is associated with the increased risk of mortality from collisions with vehicles, an increased chance of poaching, and the increased risk of human-caused fires, which can lead to the loss of sagebrush habitat and introduction of invasive species, including cheatgrass. Changes in habitat and other environmental variables such as noise resulting from human disturbance and presence may also influence wildlife behavior during key periods such as lekking, breeding and young rearing, and overwintering. Non-linear features can also disrupt wildlife behavior due to associated increases in human activities. Grazing, farming, and other development (e.g., residential, commercial, and industrial), though limited in the Project area, has also caused direct loss of habitat as well as resulted in habitat fragmentation. While Gateway West, as well as other projects requiring federal

permits, would be located to minimize impacts to important habitats and particularly to waterbodies, there would be an unavoidable long-term loss of habitat and fragmentation of habitat caused by these projects. When considered together with the massive habitat alteration already caused by past and present actions, the cumulative impact of Gateway West would be substantial.

4.4.12.1 Habitat

Existing past and present actions have substantially fragmented or occupied habitat, especially native shrub steppe and grasslands. Remnant patches of shrub habitats are very important for the survival of many species of animals, including but not limited to migratory birds, large ungulates, small rodents and lagomorphs, mammalian and avian predators, reptiles, and, for riparian and wetland areas, amphibians and aquatic species including fish. The past and present activities that limit habitat quantity and quality for these species include identified ground-disturbing activities (Table 4.3-1). Reasonably foreseeable activities in addition to Gateway West would also continue to remove habitat and fragment remaining habitat patches with roads and other linear facilities. Because native habitats have been eliminated or reduced in their function through introduction of invasive plant species and changes in fire regime, the additional removal and fragmentation of habitat due to Gateway West, when added to the already considerable impacts of past and present actions, would be substantial. Cumulative effects for habitat would not vary substantially by alternative except to the extent that the longer the alternative in native habitats, the more impact it would have. If a route with larger impacts on habitat were chosen and additional transmission lines were also sited to follow that route, larger cumulative effects on native habitats would be expected.

4.4.12.2 Big Game

The size and extent of big game herd units now present in the CIAA have been influenced by past and present actions. Although big game species are generally mobile and will move away from disturbance, the reduction in habitat availability and the prevalence of disturbances from roads and other developments has limited areas that can support big game, especially during critical times (crucial wintering and parturition). Therefore, disturbances during these times can have large adverse impacts on both individuals and entire herds. The BLM and the state wildlife agencies have developed seasonal restrictions that are applied to all activities on federal and state lands (respectively) and would likely be applicable on private lands for projects subject to the WIA approval process. These seasonal restrictions would reduce the impact from construction noise and visual disruption during critical periods from any development project in the area.

Table 4.4-1 lists the past, present, and reasonably foreseeable actions within big game winter range units that are crossed by Segments 8 and 9 of Gateway West. Effects would be greatest in small, isolated units if development precludes their use by big game. No designated parturition habitat would be crossed by Segments 8 and 9. Most of the designated wintering habitat units crossed by Gateway West are large. Big game would be likely to continue to use these areas since the habitat loss associated with Gateway West and the other past, present, and reasonably foreseeable future actions would be relatively minor compared to the size of the big game habitat area and would be concentrated in areas of prior disturbance.

Table 4.4-1. Existing and Planned Actions within Big Game Wintering Habitat Units Crossed by Segment 8 and 9 Revised Proposed Routes

Species	Gateway West Segment	Approximate Gateway West Mileposts Crossed	Existing Projects within Big Game Habitat	Proposed Projects within Big Game Habitat[1/]
Winter Range Units				
Elk	Segment 8 Revised Proposed Route	80-90	transmission lines US 26	transmission line (PC)
Mule Deer	Segment 8 Revised Proposed Route, 8G, 8H	0–1, 4–16, 24–57 (Seg. 8) 0-1, 4–20 (8G, 8H)	US 93, US 20, US 26 transmission lines	transmission lines (PC)
Pronghorn	Segment 8 Revised Proposed Route, 8G, 8H	72–80 (Seg. 8) 18–142 (8G) 126–135 (8H)	US 26 transmission lines	transmission line (PC)
Bighorn Sheep	Route 8H	114–116	transmission lines	None
Bighorn Sheep	Segment 9 Revised Proposed Route	143–144	transmission lines	None
Mule Deer	Segment 9 Revised Proposed Route, 9K	0–10	transmission lines	transmission lines (PC, GBT)
Pronghorn	Segment 9 Revised Proposed Route, FEIS Proposed 9, 9K	154–161 (Seg. 9) 147–171 (9K) 137–160 (FEIS 9)	natural gas pipeline	transmission line (PC)

1/ Transmission lines: PC (PacifiCorp), GBT (Great Basin Transmission)

Because these limitations on activities would be imposed on Gateway West as well as on other transmission lines and pipelines, the additional cumulative impact on big game species from Gateway West activities during sensitive periods would be reduced to a minor level. There would still be the removal and fragmentation of habitat attributable to past, present, and reasonably foreseeable activities, to which even the minor impacts of Gateway West would contribute cumulatively to substantial adverse effects.

4.4.12.3 Migratory Birds and Raptors

Effects of Gateway West on migratory birds would occur primarily during construction. Gateway West and all other projects are subject to the MBTA and would be expected to take appropriate precautions to avoid the take of individual birds or nests during construction. Preconstruction surveys would be required and avoidance of nests and nesting birds, including raptors, would be required during construction, with buffers on nests ranging from 10 meters for shrub-nesting species to miles for sensitive raptor species. Projects with similar permitting structures would be expected to be similarly restricted, including wind energy projects, reducing the impact on nesting birds, including raptors, to a minor level even when taken together. Construction traffic would

be limited to 25 miles per hour on unsurfaced roads for Gateway West and would likely be similarly limited for other projects, reducing the chances for direct mortality due to collisions with equipment and vehicles to a minor level.

The removal and fragmentation of habitat attributable to past, present, and reasonably foreseeable activities, to which even the minor impacts of Gateway West would contribute cumulatively, would result in some adverse cumulative effects to migratory birds and raptors. It is assumed that all new transmission lines, wind farms, and other projects with the potential to incur avian mortality due to collision or electrocution would develop Avian Protection Plans that would include measures to reduce the potential for raptor collisions and electrocutions.

Two hundred thirty (230)-kV and 500-kV transmission lines, such as those proposed by Gateway West and others, offer a negligible electrocution hazard to birds because the conductors are separated by much more than the wingspan of the largest bird. However, they can present a collision hazard for all types of birds. This hazard is relatively low when compared to buildings but higher than for other identified sources of collision (Erickson et al. 2005). Avian mortality was estimated in 1987 to be over 250 birds per mile of transmission line per year in the Netherlands (as quoted in Erickson et al. 2005 and Manville 2005). It is difficult to compare to wind turbine mortality, which has been estimated roughly at one to three birds per MW per year. Though no known monitoring at either wind farms or at transmission line locations is being conducted, it is reasonable to assume that additional transmission lines and additional wind farms will add to bird deaths from collision.

In April 2010, the BLM signed an MOU with the USFWS regarding the management of public lands and the protection of migratory birds (BLM and USFWS 2010). The BLM's obligations at a project level are to determine if the actions proposed in the project would have an adverse effect on migratory bird populations, habitats, ecological conditions, and/or significant bird conservation sites. Gateway West would not have a measurable adverse effect on non-special status migratory bird populations or significant bird conservation sites but would impact individuals and have an adverse effect on migratory bird habitats and ecological conditions through vegetation removal, fragmentation of native habitats, and possible increases in predation pressure due to adding perching substrate for avian predators and adding service roads sometimes used by canid predators. The Proponents have committed to mitigation actions/plans for impacts to migratory birds (as discussed in detail in Section 3.10 – General Wildlife and Fish). This required mitigation includes the Migratory Bird Habitat Mitigation Plan, which addresses mitigation for impacts to woodland habitats (see Tables D.6-2 and D.6-3 for the quantitative impacts that would occur to woodland habitats).

When taken together with the existing substantial habitat loss caused by past and present actions, including clearing for agriculture and development, fragmentation and habitat loss due to grazing, road building, wildfires, and other energy infrastructure projects, as well as the potential future losses due to those same activities, the cumulative impact on migratory bird and raptor habitat and ecological conditions would be substantial.

4.4.12.4 Fish

The largest impact to fisheries from the construction of Gateway West was identified in Section 3.10 – General Wildlife and Fish as road crossings of watercourses—the greater the number of road crossings, the higher the potential for adverse impacts to fish resources. Assuming that parallel transmission lines would have similar access road densities, their potential impacts would add to those of Gateway West wherever they cross the same watercourse. While some access roads could be shared among projects, there would still be a substantial number of access roads, added to existing roads that would cross each waterbody. Gateway West, with established mitigation measures, would have a low risk of introducing or spreading aquatic invasive species (as would other projects held to similar requirements), as a result the Project would have a low contribution to the cumulative effect of the introduction or spread of aquatic invasive species.

Grazing can have negative effects on streambank condition, substrate embeddedness, pool frequency and quality, and riparian reserves due to bank damage caused by cattle, and trampling of riparian vegetation. This would be expected to continue under existing leases. Likewise, ground clearing for proposed projects can be a source of fine sediment and road crossings in general can create fish passage barriers. When features such as road are located near streams this can also reduce large wood debris recruitment and peak flows and drainage networks can be increased with the drainage from road surfaces. Requirements for limiting erosion, sedimentation, and in-water crossing work to non-critical seasons would reduce the impact of each of these projects on fish and other aquatic species. Cumulative impacts to fish would not vary substantially by route. Although Gateway West would implement mitigation measures for minimizing water quality effects and therefore would not contribute substantially to impacts on fish species, when considered together with the existing impacts of other past and present actions, the cumulative impact of Segments 8 and 9 would be substantial.

4.4.13 Special Status Wildlife and Fish Species

The general discussion of conditions and potential impacts found within the General Wildlife and Fish section (Section 4.4.12) would be applicable to special status wildlife and fish species as well. The following discussion focuses on cumulative effects to particular special status wildlife and fish species.

4.4.13.1 Bald Eagle (*BLM Special Status*)

Winter roost habitat for bald eagles is located within Segments 8 and 9, and one nest has been identified along Segments 8 and 9. All projects, including but not limited to other transmission lines, would be sited to avoid nests and would be excluded from construction during nesting season near the nests. Implementation of each proponent's Avian Protection Plan would minimize impacts to the bald eagle, including cumulative impacts, to a minor level.

4.4.13.2 BLM Special Status Fish Species

Streams that support BLM special status fish species could be impacted by the Project. The Project would both span stream habitats with transmission lines and cross these

habitats with access roads. The Agencies have developed mitigation measures that would limit the impact of stream crossings by access roads, limit the risk of introducing aquatic invasive species into aquatic habitats, and establish requirements for water withdrawals in streams that contain sensitive fish to limit the risk of impingement.

Reasonably foreseeable actions that may result in additional impact to aquatic habitats include other linear projects that would span or cross waterbodies, projects that would require water withdrawals, or any project that could result in discharge or sediment loading to waterbodies. As discussed in Section 4.4.12.4 for general fish species, although Gateway West would implement mitigation measures for minimizing water quality effects and therefore would not contribute substantially to impacts on fish species, when considered together with the already considerable impacts of other past and present actions, the cumulative impact of Gateway West would be substantial.

4.4.13.3 Burrowing Owl (*BLM Special Status*)

Habitat for the burrowing owl occurs along the Segment 8 and 9 Revised Proposed Routes. Potential effects of Gateway West on the burrowing owl include direct mortality, disturbance, and loss or modification of habitat. On federally managed lands, preconstruction surveys would be required to avoid burrows. As with Gateway West, other planned transmission lines could provide new perching opportunities for raptors and ravens, thus increasing the potential for predation. This would be most likely to make a difference in predation levels within areas where existing transmission lines have not already provided multiple perching strata. The Agencies have identified mitigation measures aimed at reducing the potential increase in raptor and raven predation on prey species that could result from the Project. The cumulative effect on habitat for burrowing owls from past, present, and reasonably foreseeable future projects, including wind development and other transmission lines, could be substantial on private lands and would be considerable on federal lands even if burrows were not impacted.

4.4.13.4 Columbian Sharp-tailed Grouse (*BLM Special Status)*

Suitable habitat for Columbian sharp-tailed grouse occurs along the Segment 9 Revised Proposed Route. The Project would contribute to the permanent loss of suitable habitat located near leks, and possible disturbances to birds located within these areas. Planned projects along the Segment 9 Revised Proposed Route includes wind energy facilities, ongoing nonrenewable resource extraction, and transmission lines, all of which would, if constructed, permanently remove suitable Columbian sharp-tailed grouse habitat. The construction of additional transmission lines could provide new perching opportunities for raptors and ravens, thus increasing predation rates on the sharp-tailed grouse; however, predation rates would most likely rise more sharply in areas where there are no existing transmission lines. The Agencies have identified mitigation measures aimed at reducing the potential increase in raptor and raven predation on prey species that could result from the Project. Although the Project would be sited and constructed to minimize impact to Columbian sharp-tailed grouse, there would still be long-term loss and fragmentation of habitat associated with the Project. When added to the already considerable loss of habitat due to past and present activities, and the minor but cumulative impacts from

proposed future projects, the cumulative effects on the Columbian sharp-tailed grouse from past, present, and reasonably foreseeable future projects would be substantial.

4.4.13.5 Columbia Spotted Frog / Northern Leopard Frog (*Candidate, BLM Special Status*)

The Columbia spotted frog and northern leopard frog may occur in wetland and riparian habitats found along Gateway West. The transmission line for the Project would span wetlands and riparian habitats (thereby minimizing impacts); however, some loss of or degradation to these habitats could occur due to construction and maintenance of access roads. There are additional transmission line projects that have been proposed for areas adjacent to the Project (see Table 4.2-9) with similar effects. Given that it is standard engineering practice for transmission lines to span riparian and wetland areas, and for such projects to include an SPCC Plan and SWPPP, it is assumed that removal of riparian habitat and sedimentation contributions to wetlands and waterbodies would be minimized by these additional projects as well. However, the cumulative loss or degradation of wetland and riparian habitats could be locally important for Columbia spotted frogs and northern leopard frogs, given the limited availability of these habitats and their sensitivity to impacts.

4.4.13.6 Federally Listed Invertebrate Species (*Threatened and Endangered*)

There are four federally listed aquatic invertebrate species that occur near Segments 8 and 9: the Bliss Rapids snail (Threatened); Banbury Springs limpet (Endangered); Snake River physa snail (Endangered); and Bruneau hot springsnail (Endangered). The designated recovery areas for these species would not be crossed by the Revised Proposed Route for Segments 8 and 9. However, other proposed transmission lines (see Table 4.2-9) may cross through these areas. No other projects are known in the area that could adversely impact the Snake River habitat area. Therefore, no substantial adverse cumulative impacts are expected to federally listed invertebrate species.

4.4.13.7 Greater Sage-Grouse (*Candidate and BLM Special Status)*

General habitat for the greater sage-grouse occurs along all segments of the Project. In addition, agency designated habitats including Idaho-designated Key Habitat, restoration habitats, as well as PGH and PPH, would be crossed by Segments 8 and 9. The Proponents attempted to route the Project to avoid all leks by at least 0.25 mile (in accordance the BLM RMP requirements for “no surface occupancy,” which were in place at the time of initial Project design in 2008). However, the centerline of the Project would come within 0.25 mile of some leks. In addition, leks were avoided to the extent possible by 0.6 mile, based on the assumption made at the time of initial Project design (2008) that the “no surface occupancy” requirement would increase from 0.25 mile to 0.6 mile (as of this date, the BLM “no surface occupancy” restriction has been increased to 0.6 mile; see IM 2012-43 [BLM 2011c]). However, not all leks could be avoided by this distance due to the need to avoid other sensitive resources (e.g., sensitive cultural resources that are protected under the NHPA).

The Project would contribute to the permanent loss of suitable sage-grouse habitat and possible disturbances to birds. The Project design includes minimization measures

such as seasonal restrictions on construction, and mitigation measures such as offsite compensatory mitigation. The Agencies assume that similar measures would be proposed by or imposed upon other projects proposed in the area.

Sage-grouse are dependent on large areas of intact sagebrush habitats. They can utilize a variety of sagebrush types including big sagebrush communities consisting of *Artemisia tridentata* ssp. *wyomingensis* (Wyoming big sagebrush), *A. t.* ssp. *vaseyana* (mountain big sagebrush), or *A. t. tridentata* (basin big sagebrush), as well as low forms of sagebrush such as *A. arbuscula* and *A. nova*. Although sagebrush is one of the most widespread vegetation types in the intermountain lowlands of the western United States, it is also one of the most imperiled ecosystems in North America (USFWS 2010). The decline in sagebrush habitats has resulted from a variety of factors including direct loss of habitat, alterations to regional fire regimes, increased grazing by herbivores, invasion of exotic species, and a lack of successful rehabilitation of impacted area with native shrubland species (Wisdom et al. 2002; Knick et al. 2010). As sage-grouse distribution is strongly correlated with the distribution of sagebrush habitats, a decline in these habitats can have adverse impacts on the distribution of sage-grouse. For example, sage-grouse were once thought to occur in Arizona, California, Colorado, Idaho, Montana, Nebraska, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming in the United States, as well as Alberta, British Columbia, and Saskatchewan in Canada; however, they no longer occur in Nebraska, Arizona, or British Columbia, and their abundance has been in decline in some of the remaining areas (USFWS 2010).

Estimates regarding the extent of suitable sage-grouse habitats that existed prior to the European colonization of North America are uncertain; however, some studies have placed the estimate at approximately 296,645,809 acres (USFWS 2010). However, recent studies estimated that the current distribution of sage-grouse encompasses only 165,168,202 acres (i.e., a 56 percent reduction since the 18th/19th century; Connelly et al. 2004; USFWS 2010). Much of this habitat loss is directly related to agricultural use, with estimates ranging from approximately 56,834,237 acres to 61,500,000 acres of sagebrush habitats that have been converted to agricultural uses within the sage-grouse conservation area (Connelly et al. 2004; USFWS 2010; Knick et al. 2010). More than 617,763 acres of former sagebrush are now covered by interstate highways and paved roads (Knick et al. 2010). In addition, oil and gas developments influence approximately 8 percent of sagebrush habitats (Knick et al. 2010). Due to differences in the ecology of sagebrush communities within the range of the sage-grouse, seven distinct sage-grouse Management Zones (MZ) have been mapped by WAFWA. Gateway West crosses through two of these MZ: MZ II, which includes the Wyoming Basin floristic region, and MZ IV, which includes the Snake River Plain floristic region. Based on current estimates, there are approximately 26,877,899 acres of sagebrush habitats currently in MZ II and 33,158,329 acres of sagebrush habitats in MZ IV (Knick in press, as cited in USFWS 2010). Estimates of sagebrush levels prior to the 18th/19th century (i.e., before European colonization) within these two MZ are not currently available.

Direct loss of habitat (i.e., conversion of sagebrush habitats to other land-uses) is not the only factor that has contributed to the decline of sagebrush habitats in the western

states. For example, very little of the remaining sage-grouse habitats are currently undisturbed or have been unaltered from sedimentation occurring prior to European colonization. Two of the most substantial factors that have affected the quality and composition of existing sagebrush habitats (beyond direct removal and conversion) are 1) changes that have occurred to the fire regime in the western states, and 2) grazing of sagebrush habitats by domestic herds (discussed in more detail below).

Fire has been identified by many as a prime factor associated with the decline of sage-grouse (USFWS 2010). Sagebrush habitats within the range of the sage-grouse are not fire dependent or adapted to intense/frequent fires (unlike the chaparral-shrub communities on the western coast; Regan et al. 2010), and natural fire return intervals in these areas are thought to have been around 50 to 350 years in length (Backer in press, as cited in USFWS 2010). Recently, however, fire return intervals have become shorter (i.e., fires are more frequent), due in part to the expanding urban-wildland interface, expansion of invasive species, as well as impacts associated with global climate change. For example, wildfires burned a combined total of approximately 21,500,000 acres of sagebrush within the seven MZ mapped by the WAFWA between 1980 and 2007; and there has been an increasing trend in the total area burned since 2007 (Baker et al. in press and Miller et al. in press, as cited in USFWS 2010). Idaho has been particularly hard-hit by recent fire events. Approximately 30 to 40 percent of sagebrush habitats in southern Idaho were burned during 1997 to 2001 (Healy 2001, as cited in USFWS 2010), and an additional 660,000 acres of sagebrush burned between 2003 and 2007 (or approximately 7 percent of the remaining sagebrush habitat in Idaho; USFWS 2010). Due to recent drought conditions, multiple large-scale fires burned though Idaho and Wyoming during the 2012 fire season (the extent of which is still being determined). Table D.6-7 in Appendix D lists the known/recorded wildfires that have occurred within the Project area since 2008, as well as the estimated area that each fire burned. The increased frequency and intensity of fires in recent years has adversely affected sagebrush communities by removing habitat and increasing the rate of invasion by exotic plant species (e.g., *Bromus tectorum* and *Taeniatherum asperum*). Furthermore, as these sagebrush communities are not fire adapted, it can take 20 to 150 years for burnt communities to return to conditions that can support nesting sage-grouse (USFWS 2010).

Although grazing occurred prior to European colonization (i.e., in the form of grazing by native herbivores such as deer, bison, and other ungulates), it is likely that grazing pressures were not as intense historically compared to current conditions/land uses. Native herbivores were likely present in lower numbers compared to current domesticated herds; therefore, historic grazing pressures were likely sporadic and localized (Miller et al. 1994, as cited in USFWS 2010). Limited grazing (such as natural grazing levels resulting from native herbivores) can have beneficial effects to sagebrush communities, such as preventing the encroachment of woodland vegetation into shrublands. However, intense grazing pressures (such as those resulting from domesticated herds) can adversely affect sage-grouse nesting and brood-rearing habitat by decreasing shrub cover (thereby decreasing opportunities for sage-grouse to hide from predators), compacting soils, decreasing herbaceous abundance, increasing erosion, and increasing the rate of invasion by exotic plant species (USFWS 2010).

Although there is little evidence that can be used to directly link modern grazing practices to population level responses by sage-grouse, modern grazing practices have been shown to have detrimental effects to sage-grouse habitats, as described above (Braun 1987 as well as Connelly and Braun 1997, as cited in USFWS 2010). Calculating the direct effects of grazing (i.e., quantitative values) on sage-grouse or their habitats is not possible based on current data (Knick et al. 2010); however, approximately 12,000,000 animal unit months (i.e., the amount of forage necessary to support one livestock unit per month) is permitted for livestock grazing on public lands in the western states (Knick et al. 2010). Table 3.18-3 in Section 3.18 – Agriculture lists the BLM grazing allotments that are located within the Project area.

The historic levels of sagebrush within the Project area are unknown. However, certain assumptions about historic levels can be made by looking at the current land uses in this area. Based on the known distribution of sagebrush habitats in this area (i.e., sagebrush is the most common habitat type crossed by the Project), and the suitability of sagebrush areas for developed into agricultural uses compared to other landscape types present in the Project area (e.g., forested areas), it can be assumed that much of the agricultural and urban development within the Project area likely once contained sagebrush habitats.

Table 4.4-2 lists the existing and proposed activities within designated Key, PPH, and PGH Areas (see Section 3.11 for a definition of these areas). Habitat for sage-grouse would also be impacted by non-linear projects such as ongoing oil and gas extraction, ongoing grazing and OHV use, and wind energy development. Losses of birds would also continue to occur due to hunting, illegal poaching, and the spread of diseases such as West Nile Virus. The cumulative effects of the Project on the greater sage-grouse when taken together with past, present, and reasonably foreseeable future projects would be substantial.

Table 4.4-2. Existing and Proposed Activities within Sage-Grouse Key PPH/PGH Habitat Units

Sage-Grouse Key Units Identified by Gateway West Segments	Approximate Gateway West Mileposts	Existing Projects within Core/Key PPH/PGH Sage-Grouse Habitat[1/]	Proposed Projects within Key PPH/PGH Habitat Unit[1/]	Relationship to Gateway West
Segment 8 Revised Proposed Route	42–48, 60–68	Two existing transmission lines	Transmission line (PC)	Gateway West would parallel transmission lines along southern edge of habitat polygon.
Segment 9 Revised Proposed Route, FEIS Proposed 9, 9K	1–8	One existing transmission line	Transmission lines (PC, GBT)	Gateway West would parallel transmission lines along northern edge of habitat polygon.
8G/9K	124.5–129.1 (8G) and 153.2–157.9 (9K)	One existing transmission line	Transmission lines (IP)	Gateway West would intersect habitat polygon south of transmission line.

1/ Transmission lines: IP (Idaho Power), PC (PacifiCorp), and GBT (Great Basin Transmission)

Because the sage-grouse may avoid areas that contain tall structures, the cumulative effects on this species may differ depending on which route is selected. If an additional proposed transmission line is colocated with Gateway West, the effects of habitat displacement on grouse species by these various lines (resulting from the presence of tall structures) would overlap each other to some degree. However, if each line is located in a separate location within sage-grouse habitat, then each could create a substantial and unique area that sage-grouse would likely avoid.

Table 4.2-9 identifies the B2H project as a reasonably foreseeable future project within the vicinity of the Project area. A portion of Segment 6 of the B2H project is within the CIAA for sage-grouse. According to the 2014 B2H DEIS, the proposed project would cross through and impact sage-grouse habitat (Figure 3-30 of BLM 2014b). The impacts that would occur as a result of the B2H project, when combined with this Project, could have cumulative effects to sage-grouse and their habitats. Note that a final EIS for the B2H project has not yet been prepared, and any impact values reported for that project are uncertain at this time.

BLM IM 2012-044 (i.e., the BLM National Greater Sage-Grouse Land Use Planning Strategy [BLM 2011d]) provides direction to the BLM for considering conservation measures identified in the Sage-Grouse National Technical Team's *A Report on National Greater Sage-Grouse Conservation Measures* during the current greater sage-grouse land use planning process. Multiple BLM RMPs that contain sage-grouse habitat are currently being amended and/or revised; all of the RMPs applicable to this Project would be affected by this IM. These amendments/revisions are not currently completed and a ROD has not been published; therefore, the conservation measures proposed for the revised RMPs have not been finalized or implemented. However, the EIS for these amendments/revisions includes new sage-grouse habitat management area designations (i.e., Priority, Important, and General) with associated conditions. Although the EIS for these RMP amendments/revisions states that the Gateway West Project would be one of several excepted projects that would not need to comply with the conservation measures outlined in the proposed plan, other projects that affect lands under the jurisdiction of these RMPs would not be exempt. As a result, it can be assumed that these amendments/revisions to the RMPs, once finalized and enacted, would provide additional protection for sage-grouse and their habitats on BLM-managed lands.

4.4.13.8 Pygmy Rabbit (*BLM Special Status*)

The pygmy rabbit could occur within sagebrush habitats found along Segments 8 and 9. Gateway West would result in permanent habitat loss, and could result in direct mortality and an increased opportunity for predation by raptors and ravens (as was discussed for other prey species such as the black-footed ferret). The Agencies have identified mitigation measures aimed at reducing the potential increase in raptor and raven predation on prey species that could result from Gateway West (see Section 3.11 – Special Status Wildlife and Fish Species). The cumulative effects of Gateway West on the pygmy rabbit when considered together with the effects of past, present, and reasonably foreseeable future projects would be substantial.

4.4.13.9 Yellow-billed Cuckoo (*Threatened*)

Habitat for the yellow-billed cuckoo would be impacted by Segments 8 and 9. Potential effects of Gateway West include habitat removal, direct mortality due to collisions with construction vehicles, and disturbance during construction. Past actions in the CIAA have removed riparian and wetland habitats and additional losses are possible due to planned transmission lines. However, the cumulative loss of riparian habitat would likely be low under all routes, given that it is standard engineering practice to design transmission lines to span riparian habitats and avoid placing ancillary facilities within them. The existence of multiple transmission lines through riparian habitats would also present increased risk of collisions. However, this risk would remain low given that yellow-billed cuckoos are agile flyers. The cumulative effects from Gateway West on the yellow-billed cuckoo when considered together with the effects of past, present, and reasonably foreseeable future projects would be minor.

4.4.13.10 Northern Goshawk (*BLM Special Status*)

The Project could impact habitats within the range of the northern goshawk; however, no known goshawk nests are located within the analysis area for Segments 8 and 9. Therefore, there would be no project impacts within 1 mile of known goshawk nests and the Project would not contribute to the cumulative effects to habitats within 1 mile of known goshawk nests.

4.4.13.11 Other BLM Special Status Species

With the exception of the species listed above, construction and operations of Gateway West are not expected to substantially add to the cumulative effect of past, present, and reasonably foreseeable future projects on BLM special status species in ways that are different from those listed in Section 4.4.12, where cumulative effects are shown to be considerable for wildlife generally. In general, cumulative effects on sensitive species would not differ substantially by route.

4.4.14 Minerals

The continued extraction of saleable minerals in southern Idaho partially constrains the location of this and other proposed transmission lines, but this effect is minor because the Project can span individual extraction sites. The cumulative impact of Gateway West on saleable mineral extraction when taken together with past, present, and reasonably foreseeable activities would be minor.

4.4.15 Paleontological Resources

There are known fossil-bearing formations close to or at the surface in the CIAA for Gateway West. In the area of high fossil sensitivity, there are no other projects proposed in this area, indicating that, with EPMs to avoid or minimize the extent of impacts that could occur to paleontological resources, the cumulative impact of Gateway West to paleontological resources would be negligible.

4.4.16 Geologic Hazards

The Segment 8 and 9 Revised Proposed Routes, route variations, and other routes would cross areas of high earthquake risk (see Section 3.14 – Geologic Hazards, for details). Project structures could be damaged or collapse in the event of fault rupture

beneath or adjacent to a tower due to inaccurate fault location during project design. Collapse of Project structures would potentially result in power outages, damage to nearby roads or structures, and injury or death to people.

The BLM would require proponents of all new transmission lines to conduct geotechnical exploration and avoid locating any project facilities on known earthquake traces or in areas of active land movement. Prudent engineering design and compliance with national building standards would reduce the risk for each of the transmission lines to a minor level. Given the physical length of the Project, the time interval of operation, and the geologic hazards that may be encountered, it is possible that a small-scale, local failure could occur during the life of the project. However, the cumulative risk would still be low provided that standard engineering practices for design and construction, and the proposed operations and maintenance activities for Gateway West were also practiced by other proponents.

4.4.17 Soils

Effects on soils from Gateway West that would contribute cumulative effects include unavoidable soil loss due to wind and water erosion, soil mixing, soil compaction, and soil contamination. Soils in the CIAA have been affected by past activities such as pipelines, transmission lines, roads, OHV use, farming, and grazing. During construction of any of the current or reasonably foreseeable projects, vegetation would be removed exposing the soil to erosional forces, soil compaction could occur from vehicle traffic, and soil excavation would cause soil mixing, although BMPs (minimizing bare soil exposed to wind, water, and steep slopes, and stockpiling topsoil for use during reclamation) are or would be used to minimize the extent of effects. Soil contamination could occur from chemical or petroleum spills, although the risk is not great. Some soil disturbance related to ongoing use of roads will remain during the life of the projects.

Loss of production due to sites occupied by facilities (transmission line structures energy generation facilities, commercial development, and the access roads to all of these) would remain during the life of the projects. Effects on soils could occur from unauthorized off-road vehicle use from construction on projects with inadequate access control.

Decommissioning and reclamation can recover some of the soil productivity, but is not 100 percent effective. Large construction projects, roads, and pipelines are the types of projects that have high effects on soils. The implementation of BMPs and reclamation on all projects would minimize soil impacts.

The cumulative impact to soils from Gateway West, when taken together with the already substantial impact of past and present activities and proposed future action on some sensitive soils, could be substantial even with expected erosion control measures fully effective.

4.4.18 Water Resources

The impacts to surface waters from Gateway West include potential for sedimentation and temperature increases due to road crossing construction and ROW clearing. These impacts would be minimized but not entirely eliminated by the conditions of the SWPPP

and additional mitigation measures. It is reasonable to assume that other construction projects would also minimize but not eliminate their impact. However, when taken together with the substantial degradation to surface water resources from grazing, fires, and invasive species, the additional minor impacts of Gateway West and other proposed projects would contribute to a substantial cumulative impact.

Water usage would occur for most facility construction projects in the CIAA, mostly for dust control and mixing concrete for other transmission line facilities, energy generation facilities, commercial developments, and roads. This water usage is important because of federally listed threatened and endangered plants and fish in these watersheds; the cumulative effects are discussed in Sections 4.4.9 and 4.4.13, respectively. Because Gateway West would not require any water rights, there would be no cumulative effects on water rights.

4.4.19 Land Use

The WWE Corridor PEIS (DOE and BLM 2008) designates corridors on federal lands within 11 western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines, as well as electricity transmission and distribution facilities. However, it does not take into account the current federal land use plans (such as the BLM RMPs) that still exclude those uses along many parts of the corridor. As a result, the siting of these types of facilities within the WWE corridor would still require amendments to existing federal land management plans (RMPs and MFPs) that could change existing land use allocations for the affected lands. In addition, Gateway West is only partially located within this designated corridor. Gateway West would cumulatively add to the changes made to these federal land use plans by the past, present, and reasonably foreseeable future projects. The routes that cross more public lands or would impact more sensitive resources on federal lands would have a greater contribution to this cumulative effect on public land use plans than those that cross less public lands.

Long linear projects such as Gateway West, as well as many of the other reasonably foreseeable projects within the CIAA (see Table 4.2-9), typically cross multiple land management types such as federal, state, and privately held lands. There are currently conflicting sentiments regarding the placement of these types of projects. Many feel that projects designed for the greater good of the public should be placed on public lands to the greatest extent practical, because they feel that this is consistent with the original purpose of these lands. However, others feel that public lands were designated to protect sensitive resources and should be excluded from developments whenever practical (indicating that these projects should be placed on private lands to the extent practical). Although public lands were established for a variety of reasons, and the various federal and state land management agencies manage their respective lands for different goals, this conflicting sentiment regarding the proper placement of projects meant for the public good will likely continue. The Project has cumulatively added to this debate, which has resulted from past, present, and reasonably foreseeable future projects.

The differential cumulative effects of Gateway West when taken together with other reasonably foreseeable future actions as well as past and present actions and management is would be substantial, regardless of land ownership.

Section 4.1.3, above, details the federal land management plan amendments that would be needed to change land classification or VRM class if a particular route were selected. In all cases of public land reclassification, more activities in addition to the construction and operations of Gateway West would be permissible without additional land management plan amendments for the same restrictions the proposed amendments address. In several cases, where the parcel being reallocated is small, there is no additional infrastructure that could reasonably fit within the parcel in addition to Gateway West and therefore the cumulative impact of the RMP amendment would be negligible.

Projects are sited to avoid impacting sensitive resources to the greatest extent practical. As more projects are constructed through areas located adjacent to sensitive resources, the possible paths that can be taken to avoid these resources become limited.

Because rangelands are the most common land use within the CIAA, the past, present, and reasonably foreseeable projects have and will continue to affect it to a considerable degree. The other land use types found within the CIAA have experienced fewer impacts than rangeland, due either to their rarity in the CIAA or because developers avoid them. While wetlands and riparian areas are both rare in the CIAA, developers typically avoid these areas due to the added restrictions and regulations applicable to developments within them.

OHV use is increasing on public lands. OHV riders may have more opportunities available as a result of the Project. New access roads used for construction and maintenance provide additional avenues for riders to gain access to locations that were previously off limits or unavailable. Both increasing authorized and unauthorized OHV use is likely to result in increasing complaints from landowners and the public. As reasonably foreseeable projects increase road density at the same time OHV use increases, there will be a need for additional enforcement and physical barriers to protect some areas.

Gateway West would contribute to cumulative effects along with reasonably foreseeable projects through energy development and use of designated utility corridors as specific areas are avoided and more development occurs but would not reduce the capacity of public or private lands to support existing land uses.

4.4.20 Agriculture

Past, present, and reasonably foreseeable activities that could combine with Gateway West and result in cumulative effects to agriculture include projects with the potential to affect prime farmland, livestock grazing, crop production, CRP lands, and dairy farms. The effects from past and present activities that have shaped current patterns of agricultural use are generally accounted for in the existing conditions overview presented in Section 3.18.1. The analysis area used for CIAA on agriculture is the counties crossed by Segments 8 and 9 of the Project.

The Segments 8 and 9 Revised Proposed Routes and other routes would have temporary and permanent effects on agricultural land, which includes cropland and pasture, as would other projects developed within the CIAA. Potential impacts from the Project would be reduced with implementation of the proposed reclamation methods identified in Appendix B of the 2013 ROD (BLM 2013b). As displayed in Table 4.4-3, the amount of agricultural land affected by either construction or operation of the Revised Proposed Routes would be less than 0.01 percent in any of the counties crossed by Segments 8 and 9. The same would be true for the other routes considered in this SEIS.

Table 4.4-3. Agricultural Lands Impacted by the Revised Proposed Routes in Segments 8 and 9 during Construction and Operations (acres)

County	Total Agricultural Land	Agricultural Land Impacted		Percent Agricultural Land Impacted[2/]	
		Construction[1/]	Operations	Construction	Operations
Ada	144,049	744	50	<0.01	<0.01
Canyon	303,836	58	3	<0.01	<0.01
Cassia	611,055	41	2	<0.01	<0.01
Elmore	344,820	1,528	161	<0.01	<0.01
Gooding	239,640	467	39	<0.01	<0.01
Jerome	188,075	97	16	<0.01	<0.01
Lincoln	129,724	34	6	<0.01	<0.01
Owyhee	748,771	1,443	154	<0.01	<0.01
Twin Falls	484,004	817	86	<0.01	<0.01

1/ Includes line removal actions.
2/ Percent of total area is the land in farms divided by the total respective county or state land area.
Source: USDA 2012

Potential effects to cropland 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. As discussed in Section 3.18 – Agriculture, these types of potential effects are difficult to quantify and would likely be determined through negotiation with landowners.

Other foreseeable projects that would contribute to cumulative effects on agricultural lands in the Analysis Area include Segments 5, 6, 7, and 10 of the Gateway West Project (Twin Falls, Cassia, and Lincoln Counties). Reasonably foreseeable actions, e.g., conversion of agricultural land for residential, industrial, and commercial uses, or through the construction of transmission line facilities and access roads of other projects, would continue to affect farmland by removing acres from production.

When taken together with the ongoing loss of agricultural land to residential, commercial, and industrial development, the small additional area affected by Segments 8 and 9 could be important to individual farmers but it would have little effect on overall crop production and livestock production in the any of the counties crossed by the Project.

4.4.21 Transportation

Linear facilities invariably need to cross other linear features such as highways and railroads. These crossings can interfere with use of the roads and railroads during

project construction, including the need to reroute or delay traffic. However, these impacts would be temporary and only last as long as construction activities occur within the area. If other reasonably foreseeable projects are constructed at the same time and in similar location as the Revised Proposed Routes, variations, or other routes, or immediately before or after this project, then there could be a minor temporary cumulative effect on traffic volumes on local roads, which would be mitigated by traffic controls required by both county and federal regulations.

4.4.22 Air Quality

As stated in Section 3.20 – Air Quality, existing air quality in Idaho is generally good to excellent. Current air emissions due to present activities, including power plant operation, residential use of wood for heating, use of gasoline- and diesel-powered cars and trucks for most transportation of people and cargo, and occasional wildfires, do not have a substantial cumulative adverse effect on air quality as demonstrated by the USEPA classification of “attainment” for most of Idaho. Proposed projects in the CIAA that could contribute to deterioration in air quality include the proposed natural gas power plant in Idaho, which would contribute to reductions in air quality in southwestern Idaho, where there is one area of non-attainment for PM_{10} that overlaps the proposed Gateway West Project.

Because Gateway West would have no measurable impact on air quality within the CIAA, it would not contribute to the cumulative impact of other projects on air quality in the CIAA. This is the case across the Segments 8 and 9 Revised Proposed Routes, route variations, and other routes.

Predicted CO_2e emissions (total emissions of all greenhouse gases converted to equivalent of CO_2) for 2020 are 46,958,462 tons for Idaho (CCS 2010). Estimated total CO_2 emissions from construction of Segments 8 and 9 are approximately 75,500 tons, and GHG emissions from operations activities would be less than 3 tons CO_2e per year. Therefore, construction and operations of Gateway West would not add substantially to the cumulative effects of past, present, and reasonably foreseeable future projects in terms of GHG emissions.

4.4.23 Electrical Environment

The analysis of electrical effects determined that Gateway West would have no effects on health or safety; therefore, there would be no cumulative effects to other past, present, or reasonably foreseeable future projects. This is the case across all routes. Cumulative effects of noise due to corona effects are treated in Section 4.4.25.

4.4.24 Public Safety

Like Gateway West, nearly all current and reasonably foreseeable construction and long-term operations projects have requirements to monitor and treat noxious weeds, which includes the use of herbicides in many cases. Use of herbicides does not pose a risk to public health and safety when label instructions are followed, as is required. Construction of any project also has the risk of uncovering previously unknown environmental contamination. Remediation methods would be applied to control and reduce risk from past environmental contamination if any is found that would spread or affect public health.

Electrical projects (transmission and distribution lines, substations, etc.) pose a risk of electrocution; however, requirements for fencing and posting these sites where people might come into contact with them effectively minimize the risk.

In the past, transmission and distribution lines have caused wildland fires. New construction techniques and equipment as well as ongoing maintenance standards result in newer lines posing much less of a risk than older and smaller electrical lines. Employment of current safety standards to the construction and operations of Gateway West would reduce the risk to public health and safety to minor. Cumulative effects on public safety do not differ substantially by route because the measures in place to protect the public during both construction and operations would apply both for Gateway West and other projects. Assuming other present and future projects would also be required to adhere to current safety standards, the cumulative effects of these projects would be minimal.

4.4.25 Noise

Cumulative impacts due to construction noise could occur within 1,000 feet of the Project area or ancillary facilities as other projects or activities add to the noise from the time of Gateway West construction. In some cases, other construction projects could be using the same roads as Gateway West and additional construction-related traffic noise could occur, though it is very unlikely that these projects would be constructed concurrently. No substantial long-term changes in the volume of traffic and resulting potential transportation noise impacts are expected. Therefore, Gateway West would not contribute substantially to adverse cumulative noise impacts during construction.

Operations noise from Gateway West is limited to corona noise. Corona noise, depending on background sound levels, is masked by other sound sources within short distances from the ROW. Cumulative impacts on noise do not differ substantially by route because the measures in place to reduce noise of both construction and operations would apply both for Gateway West and other projects. Cumulative operational noise impacts are possible where Gateway West crosses, or is in close proximity to, other high voltage transmission lines (e.g., 230-kV and above) such as areas where Segment 8 would parallel the existing 500-kV line within 250 feet. However, there would be no cumulative effect when taken together with other transmission lines because of the separation distances and lack of sensitive receptors. Section 3.23 provides a discussion of operational sound levels where Segment 8 is in close proximity to the existing 500-kV line and Routes 8G and 9K are also 250 feet apart under one action alternative. Impacts of the cumulative audible corona noise from these lines are addressed in the direct impacts analysis.

4.4.26 Morley Nelson Snake River Birds of Prey National Conservation Area

Section 3.24 – Morley Nelson Snake River Birds of Prey National Conservation Area describes the resources and values associated with the SRBOP and discusses the impacts that may result from implementing Gateway West. Past, present, and reasonably foreseeable activities that could combine with Gateway West and result in

cumulative effects to the SRBOP would include projects with the potential to affect the resources and values for which the SRBOP was established:

- upland habitat/vegetation,
- raptors/upland wildlife,
- cultural resources/NHTs,
- NHTs, and
- recreation and visitor services.

As discussed in Section 3.24, the SRBOP is managed under the concept of dominant use. Public activities and uses that existed when the legislation was enacted are allowed to continue to the extent that they are compatible with the purposes for which the SRBOP was established – i.e., to provide for the conservation, protection, and enhancement of raptor (birds of prey) populations and habitats 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. The 2008 SRBOP RMP divided the SRBOP into three management areas that reflect differences in soils, precipitation, fire history, seeding history, current vegetation, and site potential. Additional areas have burned since the 2008 RMP.

Under the Preferred Alternative, two additional 500-kV transmission line ROWs would be allowed outside designated corridors for approximately 2.2 miles; however, no new utility corridor would be designated. Therefore, the cumulative effects resulting from this amendment would be the same as those described for the Project.

As with Gateway West, projects with the potential to affect the resources and values of the SRBOP would require compensatory mitigation to ensure the resources and values of the SRBOP are mitigated and enhanced (see the Compensatory Mitigation Framework in Appendix K). Any subsequent NEPA analysis (including cumulative impacts) required for the Gateway West Compensatory Mitigation Plan would be done on a case-by-case basis. Therefore, it is not possible to determine the cumulative impacts of mitigation and enhancement from the Gateway West Project in consideration with mitigation and enhancement from other future foreseeable project at this time. However, provided that mitigation and enhancement are required to offset reasonably foreseeable remaining residual effects from any project considered within the SRBOP, net benefits would be achieved.

5.0 CONSULTATION AND COLLABORATION

This chapter highlights the consultation and collaboration process for the revised proposed Project, including the general public as well as Tribal governments, and federal, state, and local agencies and organizations.

5.1 PUBLIC INVOLVEMENT

5.1.1 Scoping

In addition to the brief summary of scoping found in Chapter 1, this section describes the public scoping process, including the means used to notify the public about the opportunity to comment at this stage in the NEPA process. The scoping comment period began on September 19, 2014, and ended on October 24, 2014.

5.1.1.1 Federal Register

Initiation of the SEIS process and the public scoping meetings were announced through the *Federal Register,* news releases, and the BLM Idaho Project Web site (http://www.blm.gov/id/st/en/prog/nepa_register/gateway-west.html) as described below.

The public scoping process for the SEIS began with the publication in the *Federal Register* of the BLM's NOI to (1) prepare an SEIS to support the BLM's consideration of the Proponents' August 2014 application for a ROW grant to use public lands for portions of the Gateway West Transmission Line Project; and (2) conduct public scoping meetings. The NOI was published on September 19, 2014 (79 *Federal Register* 56399). The NOI is presented in Appendix C-1 of the Scoping Report (Appendix I of this SEIS) and on the Project Web site, referenced above.

5.1.1.2 Scoping Materials

The BLM prepared a package of handouts and displays to present information at the scoping meetings. A handout titled "Why Are We Here" was distributed to all attendees of the scoping meetings and is included in Appendix C-3 of the Scoping Report. This handout and other materials used at the scoping meetings are available online at the Project Web site (see above).

5.1.1.3 Media Releases and Public Service Announcements

The BLM prepared and distributed news releases to announce the scoping period and publicize the scoping meetings and their respective locations. The news releases were posted on the BLM Idaho Project Web site and are contained in Appendix C-2 of the Scoping Report. News releases were distributed to local and regional newspapers, radio stations, and TV stations in Idaho and the region, as well as notifications on BLM-Idaho Facebook and Twitter social media. Legal notices were published in newspapers of record. Table 5.1-1 shows the newspapers that printed the legal notice.

Table 5.1-1. Legal Notices in Newspapers of Record

Publication	Publication Location
The Idaho Statesman	Boise, Idaho
Kuna Melba News	Kuna, Idaho
The Owyhee Avalanche	Murphy, Idaho
Glenns Ferry Gazette	Glenns Ferry, Idaho
Mountain Home News	Mountain Home, Idaho

Flyers with information about public meetings were posted at various public locations in communities where meetings were held. A list of locations is shown in Table 5.1-2.

Table 5.1-2. Meeting Posters Displayed in the Community

Business/Building	Location
Arctic Circle	Kuna, Idaho
Kuna Public Library	Kuna, Idaho
Paul's Market	Kuna, Idaho
U.S. Bank	Kuna, Idaho
U.S. Post Office	Kuna, Idaho
Murphy General Store	Murphy, Idaho
Owyhee County Courthouse	Murphy, Idaho
Owyhee County Historical Museum	Murphy, Idaho
U.S. Post Office	Murphy, Idaho
Cooks Food Town	Gooding, Idaho
Franklin Building Supply	Gooding, Idaho
Gooding City Hall	Gooding, Idaho
Gooding Public Library	Gooding, Idaho
Lupita's Boutique & Tienda	Gooding, Idaho
Main Locke Insurance	Gooding, Idaho
Ridley's Food & Drug	Gooding, Idaho
U.S. Post Office	Gooding, Idaho
Wells Fargo Bank	Gooding, Idaho
Ziggy's Gas & Grub	Bliss, Idaho

5.1.1.4 Scoping Meetings

The BLM hosted four public meetings in October 2014 to provide planning and NEPA information to the public and agencies and to offer opportunities to identify issues and concerns. Public scoping and the scoping meetings were publicized on the BLM project Web site and through the local media. As summarized in Table 5.1-3, a total of 189 members of the public attended the various public meetings.

Table 5.1-3. Public Scoping Meeting Dates, Locations, and Attendance

Meeting Date	Meeting Location	Attendance
October 7, 2014	BLM Boise District Office Boise, ID	44
October 7, 2014	Kuna Senior Center Kuna, ID	51
October 8, 2014	Gooding Fairgrounds Gooding, ID	9
October 9, 2014	Owyhee County Historical Museum Murphy, ID	85
	Total Attendance	**189**

A scoping packet was offered to all who attended the public meetings and is also available on the BLM's Project Web site, http://www.blm.gov/id/st/en/prog/nepa_register/gateway-west.html.

5.1.1.5 Scoping Period Comment Letters

A total of 740 individual comments were identified and coded. The major comment categories are presented in the Scoping Report (see Appendix L of this SEIS). Appendix B to the Scoping Report includes the list of codes (Appendix B-1) and a table with the coded comments (Appendix B-2).

These letters and comments were reviewed by a team of analysts and logged into a database that tracks and sorts comments throughout the Project's NEPA process. Scoping comments are addressed in the analysis documented in the SEIS.

5.1.2 Draft SEIS Public Review and Comment Period

This section describes the public Draft SEIS process, including the techniques used to notify the public about the opportunity to comment at this stage in the NEPA process. The 90-day Draft SEIS comment period began on March 11, 2016, and concluded on June 9, 2016.

5.1.2.1 Draft SEIS Announcements

The availability of the Draft SEIS and the public comment period was announced using a variety of tools:

- **Federal Register** – The BLM published a Notice of Availability in the *Federal Register* on March 11, 2016. The Notice of Availability announced the release of the BLM's Draft SEIS on the proposed Gateway West Transmission Line Project. The Notice of Availability also announced the BLM's intent to conduct public meetings and collect public comments on the document.
- **Notification mailer and e-mail** – The BLM prepared and distributed a newsletter notification, which was mailed and e-mailed to interested parties in the proposed and alternative Project corridors and to others interested in the proposed Project. Approximately 4,670 mailers and 2,800 emails were sent to a combination of BLM, Forest Service, and Project Proponent mailing list contacts.
- **Press releases** – The BLM prepared and distributed two press releases regarding the Draft SEIS comment period, public open house meetings, and to encourage public participation. The first press release was distributed on March 11, 2016, to announce the release of the Draft SEIS, the start of the 90-day comment period, and the public open house schedule. A second press release was distributed on March 30, 2016, to announce the addition of a fifth public meeting in Hagerman, Idaho.
- **BLM Gateway West Project Website** – The BLM Project website was updated to announce the release of the Draft SEIS. The updates included the public meeting and comment period schedule, details about where to find information related to particular resources in the document, and a link to an updated version of the Project interactive map. An electronic version of the document was made available to the public for viewing and download.

- **BLM Gateway West Online open house –** An online open house website was available online from April 4, 2016, through June 9, 2016. It included all displays, materials, and information provided at in-person open houses, including the Project interactive map. Public comments were accepted electronically through the online open house. The online open house received more than 190 visits from 125 users, and 13 comments were submitted through the online open house.

5.1.2.2 Draft SEIS Meetings

The BLM hosted five public meetings in April 2016 to provide information on the document and encourage public comments on the Draft SEIS. As summarized in Table 5.1-4, a total of 284 members of the public attended the various public meetings.

Table 5.1-4. Public Draft SEIS Meeting Dates, Locations, and Attendance

Meeting Date	Meeting Location	Attendance
April 18, 2016	Hagerman, Idaho	39
April 19, 2016	Boise, Idaho	21
April 19, 2016	Kuna, Idaho	40
April 20, 2016	Twin Falls, Idaho	23
April 21, 2016	Murphy, Idaho	161
	Total	**284**

5.1.2.3 Draft SEIS Comment Letters

There were 147 individual letters submitted to the BLM during the comment period, and included in those letters were 711 individual comments. These letters and comments were reviewed by a team of analysts and logged into a database that was used to track and sort comments for response in the FSEIS. Comments received during the Draft SEIS comment period are addressed and responded to in Appendix L of this FSEIS.

5.2 CONSULTATION

Formal consultations required by law and agency policy were conducted between the BLM and other government entities, including federal and state agencies. The following section highlights these consultations for the SEIS.

5.2.1 Government-to-Government Tribal Consultation

In compliance with Section 106 of the NHPA (as amended) and the ACHP's revised regulations (36 CFR 800), the BLM initiated government-to-government consultation in April 2008 at the beginning of the Gateway West Project (Table 5.2-1). The consultation was conducted to inform the Shoshone-Bannock and Shoshone-Paiute 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.

A letter was sent to the Shoshone-Bannock Tribes to update them on the status of the Project and the SEIS in October 2014. The BLM consulted with Shoshone-Bannock Tribes in July 2015 on the Administrative Draft SEIS. The Tribes informed the BLM that another consultation would not be requested until the Tribes had reviewed the Draft

SEIS for their comments. A consultation meeting with the BLM would be requested following their review and comment on the Draft SEIS.

In lieu of a letter and following established consultation with these Tribes, the BLM participated in face-to-face meetings with the Shoshone-Paiute Tribes as indicated in Table 5.2-1. The PA for the Project was signed in July 2013 and the Final PA was sent to all consulting parties including the Tribes in August 2014. There was a separate, Project-specific MOU between the BLM and the Shoshone-Paiute Tribes signed in November 2011. There has been ongoing consultation for another MOU over the last 2 years with the Shoshone-Paiute Tribes, that when signed will replace the November 2011 MOU.

Periodic updates on routing changes have been provided to all of the Tribes. Following the established consultation under the *Wings and Roots* Program with the Shoshone-Paiute Tribes, which is the recognized government-to-government procedure in the Twin Falls and Boise Districts, the BLM has held six specific Gateway West Project ad hoc meetings with them.

The Shoshone-Paiute Tribes have expressed concern over portions of the alignment that are not in the WWE corridor. They have expressed that they remain opposed to the Project lines being located inside of the SRBOP. They have also expressed concern that, if Segment 9 was placed along Baja Road and double-circuited with the existing 138-kV line in the SRBOP, the existing 138-kV line towers would not be removed. They also oppose activity in sage-grouse habitat. They indicated they would like this Project to follow the WWE corridor or other existing corridors.

Table 5.2-1. Status of Tribal Consultation for the SEIS

Name of Tribe	Date of Initial Contact	Summary of Issues Raised during Consultation
Shoshone-Paiute Tribes	July 28, 2013	Enhancement proposal introduced as new item.
Shoshone-Paiute Tribes	August 19, 2013	Record of Decision noted as information only.
Shoshone-Paiute Tribes	December 6, 2013	Ad hoc meeting.
Shoshone-Paiute Tribes	February 20, 2014	Introduction of new Project Manager, Jim Stobaugh; Project update; PowerPoint presentation on raptors with a handout.
Shoshone-Paiute Tribes (sent to chair)	October 3, 2014	Letter to update the Tribe on the status of the Project and the SEIS.
Shoshone-Bannock Tribes	October 3, 2014	Letter to update the Tribe on the status of the Project and the SEIS.
Shoshone-Paiute Tribes	October 8, 2014	Ad hoc meeting on revised Gateway West routes.
Shoshone-Paiute Tribes	October 10, 2014	Final RAC Subcommittee reports provided to Tribe.
Shoshone-Paiute Tribes	About October 21, 2014	Provided maps to the Tribe with locations of recorded cultural resource sites in the SRBOP and Orchard Combat Training Center.

Table 5.2-1. Status of Tribal Consultation for the SEIS (continued)

Name of Tribe	Date of Initial Contact	Summary of Issues Raised during Consultation
Shoshone-Paiute Tribes	November 12, 2014	Ad hoc meeting, Tribal comment period.
Shoshone-Paiute Tribes	November 20, 2014	*Wings and Roots* meeting.
Shoshone-Bannock Tribes	February 3, 2015 to February 6, 2015 Doodle Poll emails	Called to see if anyone from the Tribe planned to attend the 6280 Trails Manual meeting.
Shoshone-Bannock Tribes		Carolyn indicated she misunderstood the date and had missed the meeting.
Shoshone-Paiute Tribes	February 24 and 25, 2015 emails	Sent Ted an update after the trails mtg on March 3, 2015 and acknowledge the need for a government-to-government meeting through *Wings and Roots*.
Shoshone-Paiute Tribes	April 16, 2015 email	Sent out meeting summary notes on from the March 3, 2015 6280 Trails Manual meeting.
Shoshone-Bannock Tribes	April 16, 2015 email	Sent out meeting summary notes on from the March 3, 2015 6280 Trails Manual meeting.
Shoshone-Paiute Tribes	March 3, 2015	Meeting focused on two BLM Trails Manuals and their impacts to the Project.
Shoshone-Paiute Tribes	May 21, 2015	Project update, Tribal request for an ad hoc meeting.
Shoshone-Paiute Tribes	May 27, 2015	*Wings and Roots* meeting.
Shoshone-Paiute Tribes	June 5, 2015 phone call	Discussed government-to-government June and July 2015 meeting dates through *Wings and Roots*.
Shoshone-Paiute Tribes	June 10, 2015 email	Sent email on government-to-government meeting information and in coordination with the Tribe identified meeting dates for June and July 2015.
Shoshone-Bannock Tribes	June 11, 2015 email	Sent out request to continue government-to-government consultation (via staff-to-staff initiation).
Shoshone-Paiute Tribes	June 12, 2015 email	Sent email on government-to-government meeting agenda/information and confirmed meeting dates for June and July 2015.
Shoshone-Paiute Tribes	June 17, 2015	Ad hoc meeting. Invite Tribal input on Administrative Draft SEIS, provided CD of Cultural Resource Technical Report.
Shoshone-Paiute Tribes	July 22, 2015	Tribal comment to Administrative Draft (ADSEIS) due.
Shoshone-Bannock Tribes	July 21, 2015	Government-to-government consultation meeting on Project ADSEIS review and Cultural Resources Technical Report with staff.
Shoshone-Paiute Tribes	August 31, 2015	Emailed Carolyn Smith, Shoshone Bannock; Upon Tribal request of potential ethnographic study, BLM requested in email what "vision the Tribe has for the ethnographic study"... and..."determine how we may proceed with your request"...in "a formal Scope of Work once we know how the Tribes would like to engage in the study." (no response received to date)
Shoshone-Paiute Tribes	March 24, 2016	Ad hoc meeting. Invite through Wings & Roots Program Tribal input on Revised Administrative Draft SEIS; provided Tribes CDs

Table 5.2-1. Status of Tribal Consultation for the SEIS (continued)

Name of Tribe	Date of Initial Contact	Summary of Issues Raised during Consultation
Shoshone-Paiute Tribes	May 18, 2016	Ad hoc meeting. Invite through Wings & Roots Program Tribal comments on Revised Administrative Draft SEIS; Made emphasis on requesting information on types of mitigation to be developed
Shoshone-Paiute Tribes	June 5, 2016	Emailed Doug McConnaughey, Wings & Roots; Invited Shoshone-Paiute Tribe for follow-up on Tribal input requested for mitigation
Shoshone-Paiute Tribes	June 5, 2016	Emailed invite to Carolyn Smith, Shoshone-Bannock Tribe for comments on Revised Administrative Draft SEIS; Made emphasis on requesting information on types of mitigation to be developed (no response received to date)
Shoshone-Paiute Tribes	July 20, 2016	Ad hoc meeting. Consulted on Tribal input for mitigation and other project concerns; discussed project schedule

5.2.2 Cooperating Agencies

5.2.2.1 U.S. Fish and Wildlife Service

Consultation with the USFWS under Section 7 of the ESA began in March 2008 and has continued throughout the scoping and EIS analysis process. The USFWS is a cooperating agency and continues to participate in the NEPA process. The BLM is working with the USFWS regarding ESA and the possibility of re-initiating consultation.

5.2.2.2 National Park Service

The NPS continues to participate in the NEPA process as a cooperating agency. Required consultation with the NPS under NEPA began in March 2008 and continued throughout the scoping, EIS, and supplemental EIS analysis process. The BLM also followed the consultation requirements with the NPS under the National Historic Trails Act for the management and protection of nationally significant historic trails (e.g., Oregon NHT).

5.2.2.3 U.S. Army Corps of Engineers

The USACE has been participating in the NEPA process as a cooperating agency since March 2008 and has continued throughout the scoping, EIS, and supplemental EIS analysis process. Participation by the USACE has emphasized consideration of potential effects on aquatic resources to inform future decisions regarding compliance with Section 404 of the CWA.

5.2.2.4 Advisory Council on Historic Preservation

Federal agencies are required by Section 106 of the NHPA to consider the effects on historic properties (listed or eligible for listing on the NRHP). The BLM, as the lead federal agency, must provide the ACHP an opportunity to comment on adverse effects on properties listed on or eligible for the NRHP. The ACHP formally requested to participate in the development of a PA for the Project. A PA was developed for the Project (found in Appendix N of the FEIS) through a collaborative process with the invited participation of all interested parties. It specified phased survey and reporting

and provided the framework and direction for a project-wide HPTP (the Proponents' draft can be found in Appendix C-1 of the FEIS) and for site-specific segment HPTP development. The executed PA addresses the entire Project, including Segments 8 and 9.

5.2.2.5 Idaho State Historic Preservation Office

Following the consultation requirements of the NHPA, the BLM sent Project notification letters to the Idaho SHPO in March 2008 at the beginning of the Gateway West Project. The Gateway West PA was executed on September 12, 2013. The PA covers the entire Project, including Segments 8 and 9. The BLM continues to coordinate with the Idaho SHPO on the review of cultural reports and development and finalization of the HPTP.

5.2.2.6 Idaho Department of Fish and Game

Following the consultation requirements of the Fish and Wildlife Coordination Act, the BLM has involved and notified the IDFG of the Project through mailing and focused stakeholder meetings.

5.2.2.7 Idaho Governor's Office of Energy Resources

The BLM has followed the consultation requirements with the State of Idaho Office of Energy Resources (OER) under NEPA, which began in March 2008 and has continued throughout the scoping, EIS, and SEIS analysis process. The Idaho OER is a cooperating agency and continues to participate in the NEPA process.

5.3 PREPARERS AND CONTRIBUTORS

This section contains the list of preparers and contributors for the Final SEIS.

5.3.1 Bureau of Land Management

Last Name	First Name	Responsibility	Affiliation	Education	Years of Experience
Boeck	Justin	Fire and Fuels Management	Boise District Office	M.S., Environmental Science	16
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Breithaupt	Brent	Paleontology	Wyoming State Office	M.S., Paleontology	5
Cooper	Natalie	Realty Specialist – Renewable Energy Coordination Office Team Lead	Idaho State Office	B.S., Forestry and Natural Resources	17
Feeney	Heather	Communications/ Public Involvement; Chapter 1, Chapter 5	Idaho State Office	M.A., Communications B.A., Political Science	12

Last Name	First Name	Responsibility	Affiliation	Education	Years of Experience
Fehlau	Robin	Recreation, National Conservation Lands	Idaho State Office	M.S., Outdoor Recreation B.S., Physical Geography	23
Flanigan	Seth	NEPA Specialist	Boise District Office	M.P.A., Environment & Natural Resources	6
Gaston	Jenna	Cultural Resources, National Historic Trails – National Transportation Support Team	Idaho State Office	M.S., Anthropology/ Archaeology	31
Halford	Anne	Vegetation Resources, TES Plants	Idaho State Office	M.S., Plant Physiology	28
Halford	Kirk	Archaeology	Idaho State Office	M.A., Anthropology	28
Heslin	Terry	National Historic Trails, Transportation	Idaho State Office	B.S., Management	13
Mayes	Eric	NEPA, Chapter 3, Chapter 4	Idaho State Office	B.S., Geography	13
Porter	Karen	Minerals, Geologic Hazards	Idaho State Office	B.S., Geology	35
Ralston	Brent	Planning	Idaho State Office	B.S., Freshwater and Marine Fisheries	22
Roller	Patricia	Chapter 3 Effects and Mitigation	Boise District Office/ Morley Nelson Snake River Birds of Prey National Conservation Area	M.S., Wildlife and Fisheries Science	20
Ross	Jeff	Cultural Resources, National Historic Trails, Paleontology	Jarbidge Field Office	B.A., Anthropology	28
Seath	Cheryl	Public Safety, Soils, Hazardous Materials	Idaho State Office	B.A., Geology	25
Shaw	Dean	Cultural Resources, Tribal Consultation	Boise District Office	B.A., Anthropology	24
Stobaugh	James	Project Management	Nevada State Office	B.S., Range Science	35
Suhr Pierce	Julie	Socioeconomics, Environmental Justice	Utah State Office (Great Basin Zone)	Ph.D., Environmental, Natural Resource & Public Economics and Applied Decision Theory	12

Last Name	First Name	Responsibility	Affiliation	Education	Years of Experience
Sutter	Jason	General Wildlife and Fish; Special Status Wildlife and Fish – National Transmission Support Team	Idaho State Office	M.S., Raptor Biology	17
Thrift	Brian	Plan Amendments	Twin Falls District Office	M.S., Animal & Range Sciences	1
Whitesides	Scott	Chapter 1, Chapter 2, Chapter 4, Plan Amendments	Utah State Office	B.A., Anthropology M.A., Maritime Studies	5
Wimmer	Mark	NEPA (Chapter 1, Chapter 2, Chapter 4, Plan Amendments) – National Transmission Support Team	St. George Field Office (Utah)	M.S., Range Science	12

5.3.2 Third-Party Contractor Team

The following is the list of third-party contractor staff responsible for preparation of the Final SEIS.

Last Name	First Name	Responsibility	Affiliation	Education	Years of Experience
Brimacombe	Karen	Vegetation, TES Plants, Invasive Plant Species	Tetra Tech	M.S., Botany	14
Cavanagh	Suzy	Chapter 2, Plan Amendments, Chapter 4, Chapter 5	Tetra Tech	M.S.,Geology	20
Crookston	John	Chapter 1, Chapter 2, Wildlife, Special Status Wildlife Species	Tetra Tech	M.S., Biology/Ecology	13
Dadswell	Matt	Socioeconomics, Agriculture, Environmental Justice, Land Use and Recreation	Tetra Tech	M.A., Economic Geography	20
Evans	Robert	Visual Resources	Tetra Tech	M.S., Landscape Architecture	9
Franklin	Kerri	Public Involvement	EnviroIssues	Master of Public Administration	4
Gravender	David	Technical Editor	Tetra Tech	M.A., English	13
Harloe	Lisa	Wetlands	Tetra Tech	B.S., Biology/Botany and Public Administration and Policy Analysis	15

Last Name	First Name	Responsibility	Affiliation	Education	Years of Experience
Iozzi	Joe	NEPA Lead	Tetra Tech	B.S., Forest Management	32
Katz	Rachael	Land Use and Recreation	Tetra Tech	M.P.A., Natural Resource Management	10
Killam	William	Cultural / Historical Resources	AECOM	B.A., Sociology/ Anthropology/ Psychology	35
Kraus	Jennifer	Water Resources	Tetra Tech	B.S, Environmental Science/Biology	18
Lawson	Chris	Air Quality	Tetra Tech	M.A., Geography	36
Litzenberger	Hannah	Public Involvement	EnviroIssues	B.S., Natural Resources	8
Nilsson	Elena	Cultural Resources	AECOM	M.A., Anthropology, B.A., English	35
Noel	Scott	Electrical Environment	HDR	B.A., Geography and Environmental Planning	14
Omdal	Morgan	Geographic Information Systems Coordinator	Tetra Tech	B.S., Zoology	12
Pellerin	Patricia	Noise, Public Health and Safety	Tetra Tech	M.E.Sc., Chemical/Bio-chemical Engineering	10
Ranzetta	Kirk	National Historic Trails, Cultural Resources	AECOM	Ph.D. & M.A. Urban Affairs and Public Policy, B.A Historic Preservation	20
Ritchie	Annalissa	Plan Amendments	Tetra Tech	M.S., Forest Resources	13
Spillers	Paul	Minerals, Geologic Hazards, Paleontology, Soils	Tetra Tech	B.S., Geology	23
Tucker	Gordon	Cultural Resources	AECOM	Ph.D., Anthropology	39

5.4 FINAL SEIS DISTRIBUTION

Public reading rooms, agencies, and governmental units listed below were notified of the document's availability on the BLM Idaho Project Web site and received a copy on CD-ROM. In addition, printed copies of the document were provided to the BLM Idaho State Office, the BLM Boise District Office, the BLM Twin Falls District Office, the BLM Library (National Operations Center - Denver), and the Idaho Governor's Office of Energy Resources.

5.4.1 Native American Tribal Governments

- Shoshone-Paiute Tribes of the Duck Valley Indian Reservation
- Shoshone-Bannock Tribes of the Fort Hall Indian Reservation

5.4.2 Federal Agencies

- U.S. Fish and Wildlife Service
- National Park Service
- U.S. Army Corps of Engineers
- U.S. Air Force (Mountain Home AFB)
- Idaho Army National Guard
- U.S. Environmental Protection Agency (Region 10)

5.4.3 Municipal Governments

- City of Boise
- City of Caldwell
- City of Kuna
- City of Meridian
- City of Nampa

5.4.4 County Governments

- Ada County
- Canyon County
- Elmore County
- Gooding County
- Jerome County
- Owyhee County
- Twin Falls County

5.4.5 U.S. House of Representatives and U.S. Senate

- U.S. House of Representatives
  - Congressman Raúl Labrador
  - Congressman Mike Simpson
- U.S. Senate
  - Senator Mike Crapo
  - Senator Jim Risch

5.4.6 State of Idaho

- Idaho Office of Energy Resources
- Idaho Department of Fish and Game

5.4.7 Public Reading Rooms and Depository Libraries

- Ada Community Library, Victory Branch

- Boise Public Library
- Boise State University, Albertsons Library
- Bruneau Valley District Library
- College of Idaho, N.L. Terteling Library
- College of Southern Idaho Library
- College of Western Idaho Library
- Gooding Public Library
- Hagerman Public Library
- Kuna Library District
- Meridian Library District, Cherry Lane Library
- Mountain Home Public Library
- Nampa Public Library
- Northwest Nazarene University, John E. Riley Library
- State Law Library
- Twin Falls Public Library

5.4.8 Bureau of Land Management Offices

- Boise District Office/Bruneau and Four Rivers Field Offices
- BLM Library, National Operations Center
- Burley Field Office
- Idaho State Office
- Owyhee Field Office
- Shoshone Field Office
- Twin Falls District Office/Jarbidge Field Office
- Washington Office

6.0 GLOSSARY AND INDEX

GLOSSARY

100-year floodplain—The area that would be inundated by a flood with a recurrence interval of once in 100 years, on average. This can also be stated as areas that have a 1 percent chance of being flooded in a given year. (See **Floodplain**.)

A-weighted sound level—The weighting of sound over the frequency spectrum to account for the sensitivity of the human ear.

Access road—Roads constructed to each structure site first to build the tower and line, and later to maintain and repair it. Access roads are built where no roads exist. Where county roads or other access is already established, access roads are built as track roads to the structure site (see **track roads**). Access roads are maintained even after construction, except where they pass through cultivated land. There, the road is restored for crop production after construction is completed.

Agriculture—A habitat type characterized by land planted and kept in crops.

Alluvium—Deposits left by flowing water, usually clay, silt, sand, or gravel.

Alternative/Alternate—Options that a federal agency considers to address the significant issues and meet the purpose of and need for a proposed project in an environmental analysis. Also used to describe other routes under consideration.

American Indian Religious Freedom Act (AIRFA)—AIRFA was passed in 1978 to protect the rights of American Indians, Eskimos, Aleuts, and Native Hawaiians to engage in traditional cultural practices. Rights ensured under the law include the possession of sacred objects, the practice of traditional ceremonies, and the access to sacred sites. The Act requires federal agencies to provide access to and use of sacred sites (within specified limitations) and to eliminate interference in the practice of Native religions.

Ampere (A)—A unit of measurement of electric current, which is the rate that electrons flow in a wire; one ampere is 6.023 x 1023 electrons per second. The measurement is similar to gallons per minute of water in a pipe.

Analysis Area—A 1,000-foot-wide area centered over the Proposed Route and Route Alternatives, as well as a 50-foot-wide area centered over any access roads that extend outside of the 1,000-foot-wide area.

Archaeological Resources Protection Act (ARPA)—ARPA (16 U.S.C. 470) was signed into law in 1979. The purpose of the Act is:

> *…to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before the date of the enactment of this Act.*

The Act established a permitting process for the survey and excavation of archaeological materials on Federal and Tribal lands, stipulating that only qualified professionals meeting the Secretary of the Interior's guidelines may be lawfully authorized to conduct such work.

Area of Critical Environmental Concern (ACEC)—An area where special management attention is required to protect and prevent irreparable damage to important cultural, historic, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.

Area of Potential Effect (APE)—The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.

Attainment area—An area considered to have air quality as good as or better than the National Ambient Air Quality standards as defined in the Clean Air Act.

Aquatic—Occurring in, or closely associated with, water.

Bald and Golden Eagle Protection Act—A law that prohibits the take, possession, selling, purchasing, bartering, or transporting of live or dead bald or golden eagles, or any parts, nests, or eggs of these birds.

Bay (of a substation)—A substation "bay" is the physical location within a substation fenced area where the high-voltage circuit breakers and associated steel transmission line termination structures, high-voltage switches, bus supports, controls, and other equipment are installed.

Bedrock—Solid rock beneath the soil and superficial rock.

Best Management Practices (BMPs)—A practice or combination of practices that are the most effective and practical means of preventing or reducing the amount of environmental impact, including but not limited to, pollution generated by nonpoint sources to a level compatible with water quality goals.

Big game—Large mammals that may be taken by hunters, pursuant to local government restrictions and regulations.

Biological Assessment—Information prepared by, or under the direction of, a Federal agency to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing; or (3) adversely modify proposed critical habitat. Biological assessments must be prepared for "major construction activities." See 50 CFR §402.02. The outcome of this biological assessment determines whether formal consultation or a conference is necessary. [50 CFR §402.02, 50 CFR §402.12]

Biological Opinion—Document which includes: (1) the opinion of the Fish and Wildlife Service or the National Marine Fisheries Service as to whether or not a Federal action is likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat. [50 CFR §402.02, 50 CFR §402.14(h)]

Blackout—The unplanned loss of all electrical service to a group of users in a geographical area.

Blading—Use of a bulldozer, grader, or other construction equipment to level or shape a travel surface.

Bog—Wet, spongy ground; a small marsh or swamp; one type of wetland.

Border zone—A zone on each side of the wire zone to the edge of the ROW, maintained to exclude vegetation more than 25 feet tall.

Bull trout—Members of the char subgroup of the salmon family (salmonids), which also include the Dolly Varden, lake trout, and Arctic char.

Bureau of Land Management (BLM)—A federal agency under the U.S. Department of the Interior that is responsible for carrying out a variety of programs for the management and conservation of resources on 258 million acres. The BLM manages multiple resources and uses, including energy and minerals, timber, forage, recreation, wild horse and burro herds, fish and wildlife habitat, wilderness areas, and archaeological, paleontological and historical sites. The BLM has been designated as the lead federal agency for the environmental review of the Gateway West Transmission Line Project.

Candidate species—Plant and animal taxa considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions. [61 FR 7596-7613 (February 28, 1996)]

Capacity—Refers to the amount of power a transmission facility (line, transformer, etc.) can reliably deliver. Capacity is measured in megawatts and is limited by the current (in amperes) that the facility can carry or the minimum voltage levels present at a substation (under either steady-state or outage conditions).

Carbon monoxide (CO)—An odorless and colorless gas formed from one atom of carbon and one atom of oxygen.

Census block—A subdivision of a census tract that typically contains between 600 and 3,000 people.

Census block group—Smallest area for which a census compiles sample data; composed of census blocks.

Census County Division (CCD)—A subdivision of a county that is a relatively permanent statistical area established cooperatively by the Census Bureau and state and local government authorities.

Census tract—A subdivision of a county smaller than a CCD that often follows visible features, but may also follow governmental boundaries and other non-visible features; homogenous with respect to population characteristics, economic status, and living conditions.

Centerline—A line on a map or flagged on the ground that indicates the location of a linear feature such as a road or a transmission line. The linear feature is further defined

by its total width, either for construction or operation, which is bisected into two equal parts by the centerline.

Circuit—An electrical device that provides a path for electrical current to flow, or along which an electrical current can be carried. In the case of high-voltage transmission, a set of wires energized at transmission voltages extending beyond a substation which has its own protection zone and set of breakers for isolation.

Clean Water Act (CWA; 33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972)—Enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Section 404 of the CWA also requires the USACE to administer permits for dredge or fill in waters of the U.S. Pursuant to section 401 of the federal CWA, any permit or license issued by a federal agency for an activity that may result in a discharge into waters of the U.S. requires certification from the state in which the discharge originates. This requirement allows each state to have input into federally approved projects that may affect its waters (rivers, streams, lakes, and wetlands) and to ensure the projects would comply with state water quality standards and any other water quality requirements of state law.

Clean Water Act 303(d) list—List of waterbodies that do not meet water quality standards.

"Cold" rebuild—Rebuilding an existing transmission line without electricity flowing in the conductors during construction.

Colluvium—Rock fragments, sand, etc., that accumulate on steep slopes or at the foot of cliffs.

Common mode failure—An arrangement in which any failures are on lines adjacent to each other on a common transmission tower or two parallel transmission lines in close proximity to each other, transformers sharing the same breaker in a substation bay, etc.

Community of shared interest—Geographically dispersed individuals who could experience common conditions of environmental effect.

Compensatory Mitigation—Compensatory mitigation means to compensate for remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied, by replacing or providing substitute resources or environments (see 40 CFR § 1508.20) through the restoration, establishment, enhancement, or preservation of resources and their values, services, and functions. Impacts are authorized pursuant to a regulatory or resource management program that issues permits, licenses, or otherwise approves activities. While the term "mitigation" can be used as shorthand for "compensatory mitigation," "mitigation" is a deliberate expression of the full mitigation hierarchy and "compensatory mitigation" describes only the last phase of that sequence (600 DM 6).

Conductor—The wire cable strung between transmission towers through which electric current flows.

Connected actions—Actions that are closely related and therefore should be discussed in the same impact statement. Defined by CEQ (40 CFR 1508.25) as actions that are automatically triggered which may require an EIS, cannot or will not proceed unless other actions are taken previously or simultaneously, or if the actions are interdependent parts of a larger action and depend on the larger action for their justification. Connected actions are limited to actions that are currently proposed.

Concentrated animal feeding operation (CAFO)—A lot or facility, together with any associated treatment works, where both of the following conditions are met: First, animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period. And secondly, crops, vegetation, forage growth, or post-harvest residues are not sustained over any portion of the operation lot or facility.

Constraint—A resource or condition that potentially limits transmission line routes, including areas that are closed by regulations (e.g. municipal airports) or where impacts would be very difficult or impossible to mitigate due to resource protection and other legal requirements.

Cooperating agency—A federal, state, or local government agency that has accepted an invitation to participate in the NEPA process by the lead federal agency. The invitation is generally formal and accompanied by the signing of a Memorandum of Understanding. Typically, a cooperating agency has jurisdiction by law or special expertise with respect to any environmental issue which will be addressed by the NEPA analysis EISs (40 CFR 1508).

Corridor—For the purposes of this project, the corridor is either: 1) the geographic area within which a transmission line is located or planned to be located (typically used to develop a working alignment for the initial screening of alternatives); if an environmentally sensitive area is found, the transmission line alignment can be shifted within the corridor to avoid adverse impacts to the sensitive area; or 2) a linear area designated by law or in a land use plan that is the preferred location for placement of linear rights of way such as transmission lines.

Corona—Corona occurs in regions of high electric field strength on conductors, insulators, and hardware when sufficient energy is imparted to charged particles to cause ionization (molecular breakdown) of the air.

Council on Environmental Quality (CEQ)—Coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. CEQ was established within the Executive Office of the President by Congress as part of the National Environmental Policy Act of 1969 (NEPA) and additional responsibilities were provided by the Environmental Quality Improvement Act of 1970.

Critical habitat—For ESA-listed species consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Act on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific

areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species. [ESA §3 (5)(A)] Designated critical habitats are described in 50 CFR §17 and 226.

Crucial range—Can describe any particular seasonal range or habitat component (often winter or winter/yearlong range in Wyoming) but describes that component which has been documented as the determining factor in a population's ability to maintain itself at a certain level (theoretically at or above the WGFD population objective) over the long term. [*Report on Standardized Definitions for Seasonal Wildlife Ranges*, Wyoming Chapter of the Wildlife Society, July 1990]

Cultural resource—The term "cultural resource" includes 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. Cultural resources also include **Traditional Cultural Properties**.

Culvert—A corrugated metal or concrete pipe used to carry or divert runoff water from a drainage; usually installed under roads to prevent washouts and erosion.

Cumulative effects—Effects that result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. Such impacts may individually have minor impacts, but collectively may have significant impacts.

Current—The amount of electrical charge flowing through a conductor (as compared to voltage, which is the force that drives the electrical charge), which is measured in amperes or amps.

Cushion plants—Forbs with stems and leaves densely aggregated near the ground surface.

Day-night sound level (L_{dn})—A value calculated by averaging the 24-hour hourly L_{eq} levels at a given location and adding 10 dB to noise emitted during the nighttime period (10:00 p.m. – 7:00 a.m.) to account for the increased sensitivity of people to noises that occur at night.

Dead-end structures—Heavy towers designed for use where the transmission line loads the tower primarily in tension rather than compression, such as in turning large angles along a line or bringing a line into a substation.

Debris flow—Rapid movement of water-charged mixtures of soil, rock, and organic debris down steep stream channels.

Decibel—A decibel is a unit for expressing relative difference in power, usually between acoustic signals, equal to 10 times the common logarithm of the ratio of two levels.

Decommissioning—Removal of Project facilities at the end of the operational life of the transmission line.

Demand—1) The rate at which electric energy is delivered to or by a system or part of a system, generally expressed in kilowatts or megawatts, at a given instant or averaged

over any designated interval of time. 2) The rate at which energy is being used by the customer.

Depressional areas—Wetland areas that receive water from overland runoff and precipitation.

Design features—Measures or procedures incorporated into the proposed action or an alternative, including measures or procedures which could reduce or avoid adverse impacts. Because these features are built into the proposed action or an alternative, design features are not considered mitigation.

Dewatering—The elimination of water from waterways so that excavation can occur.

Direct effects—Direct effects are those caused by the Project at the same time and place as the impact, such as soil disturbance.

Distribution line—The structures, insulators, conductors, and other equipment used to deliver electricity directly to the customer, including commercial facilities, small factories or residences.

Distribution underbuild—Using transmission poles to also carry distribution conductors from existing system taps by situating the distribution lines on cross-arms below the transmission lines.

Double-circuit transmission line—A transmission line composed of six electrical phases (two independent circuits of three phases each) and two lightning protection shield wires. One of the lighting protection shield wires is a steel overhead ground wire (OHGW), and the other is an optical ground wire (OPGW).

Double-contingency—Utilities are required to conduct analyses for reliability that take into account more than a single event that could affect the grid. More formally, a double-contingency analysis takes into account at least two unlikely, independent, and concurrent changes in process conditions that could trigger a failure in the electrical generation and delivery system.

Early successional (or early seral)—An immature forest often characterized by a single-age class and open canopies; stands are between 1 and 30 years old.

Earthquake buffer—A specified area beyond which effects from earthquakes of a specified magnitude would not likely damage buildings or structures.

Easement—A grant of certain rights to the use of a piece of land. A grant of easement across a private parcel for a transmission line typically includes the right to enter the easement area to build, maintain, and repair transmission facilities, including access roads. Permission for these activities is included in the negotiation process for acquiring easements over private land. The land itself remains in private ownership.

Edge effect—Changes in vegetation and animal communities that are caused by one habitat type being immediately adjacent to a different habitat type. Edge effects can include changes in temperature, humidity, and plant and wildlife species present in the area.

Electric and magnetic fields (EMF)—Fields describing properties of a location or point in space and its electrical environment, including the forces that would be experienced

by a charged body in that space by virtue of its charge or the movement of charges. The voltage, which is the "pressure," produces an electric field that moves the electricity through wires. The current produces a magnetic field, which is a measure of how much electricity is flowing. Thus, wherever there is electric current flowing (including through any type of wiring), there is both an electric and a magnetic field.

Emergent—Plants that have their bases submerged in water.

Eminent Domain—When a utility company acquires property for public use through a court action, in which a court decides that the proposed subsequent use is in the public interest and also determines the compensation to be paid to the owner.

Encroachment Permit—Written permission from a landowner to enter a parcel of private property for the purposes of temporary activity, such as surveying, conducting environmental data gathering, etc.

Endangered Species Act of 1973 (ESA)—A law establishing a regulatory system to protect species that are at risk of extinction. NOAA Fisheries and the U.S. Fish and Wildlife Service decide whether to list species as Threatened or Endangered. Under the Act, federal agencies must avoid jeopardy to and aid the recovery of listed species.

Endangered species—Any species officially listed by the U.S. Fish and Wildlife Service or NOAA Fisheries as being in danger of extinction throughout all or a significant portion of their range

Energy—In the electric utility industry, it represents the amount of power used or transmitted over a given amount of time.

Enhancement—the heightening, intensifying, or improving of one or more resources or values.

Environmental justice—A concept concerning disproportionately high and adverse human health or environmental effects of a federal agency's programs, policies, and activities on minority or low-income populations.

Environmental Impact Statement (EIS)—Part of compliance with the National Environmental Policy Act (NEPA), an EIS is a comprehensive public document that analyzes the impacts of a major federal action that may significantly affect the quality of the human environment. When complete, it is a tool for decision making as the EIS describes the positive and negative environmental effects of a proposed action, describes alternative actions and provides an analysis of environmental impacts and ways to mitigate such impacts across all alternatives considered in detail. An EIS examines physical and biological resources, resource uses, fire management, special designations, and social and economic conditions.

Environmental Protection Measures (EPMs)—Environmental protection measures have been developed by the Companies to maintain environmental quality and meet requirements of various land management plans. These measures apply project-wide unless modified through negotiations with individual landowners or superseded by permits granted by federal, state, or local agencies.

Ephemeral stream—One that flows only in direct response to precipitation and whose channel is at all times above the water table.

Equivalent sound level (L_{eq})—the steady, continuous sound level, over a specified time, which has the same acoustic energy as the actual varying sound levels over that same time.

Essential habitat—Those areas possessing the same characteristics as critical habitat for Threatened and Endangered but not species declared critical habitat by the Secretary of the Interior or Commerce. [Wyoming chap. of the Wildlife Society, 1990]

Exceedence levels (L levels)—The A-weighted sound level that is exceeded for a specified percentage of the time.

Executive Order—A rule or order issued by the president to an executive branch of the government and having the force of law.

Executive Order 13007—This order was issued by President Clinton in 1996 in the interest of protecting and preserving Indian religious practices. The order established the responsibility of federal land managers to (to the extent practicable) to "accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners" and to "avoid adversely affecting the physical integrity of such sacred sites.**"**

Executive Order 13175 – Issued by President Clinton in 2006, this order was issued to: "…establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes." The order set forth a set of guidelines for federal agencies, mandating consultation and coordination with tribal officials when formulating policy that has "substantial direct effect" on Indian tribes.

Experiential impact—Impact that could negatively affect the experience of using or viewing an area.

Extra-High Voltage Transmission Lines (230 kV; 345 kV; 500 kV)—Used for transmitting electrical energy over great distances.

- Higher voltage lines are more efficient than lower voltage lines. A higher voltage transmission line will result in fewer losses than a transmission line with a lower voltage.
- Higher voltage lines often have "bundled" conductors, meaning that multiple wires are hung from the same insulator. This increases the amount of power that can be carried on a single circuit.

Fault—An event occurring on an electric system such as a short circuit, a broken wire, or an intermittent connection.

Federally listed—Species listed as **Threatened** or **Endangered** by the U.S. Fish and Wildlife Service.

Feasible—Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, regulatory, technical, and safety factors.

Firm Demand—That portion of the **demand** that a power supplier is obligated to provide except when system reliability is threatened or during emergency conditions.

Flashover—An electrical discharge through air around or over the surface of insulation, between objects of different potential, caused by placing a voltage across the air space that results in the ionization of the air space.

Floodplain—That portion of a river valley adjacent to the stream channel which is covered with water when the stream overflows its banks during flood stage.

Fly yard—A Project-material staging area used specifically to support helicopter use.

Fragmentation—The breaking up of contiguous areas of vegetation/habitat into smaller patches.

Forb—An herbaceous plant that is not a grass or not grasslike.

Forest Service—See **U.S. Department of Agriculture Forest Service.**

Forest/Woodland—A habitat type characterized by being dominated by trees. Forests are densely covered by trees and have a continuous or nearly continuous canopy and little shade reaching the forest floor. In a woodland, trees are more widely scattered and sunlight reaches the floor, often supporting an understory of shrubs, grasses, and/or forbs.

Fugitive dust—Visible emissions released from sources other than stacks; for instance, dust blown from storage piles, road dust, emissions leaking from sides of buildings or open areas in buildings.

Functional impact—Impact that could preclude the use of or access to an area or an activity.

Gauss—A unit of magnetic induction.

General Land Office (GLO)—The GLO was created in 1812 as an independent agency to oversee the surveying and sale of public lands and was charged with maintaining land survey data for the entire United States and its territories. The agency was later placed under the authority of the Department of the Interior and eventually merged with the Grazing Service to form the BLM. The BLM facilitates public access to GLO data through its website in the form of digital images of federal land patent and survey maps produced between 1820 and 1908.

Geographic Information System (GIS)—A computer representation of data that is geographically distributed in three dimensions. These data can be generated and displayed to show their physical location. Each data set with a certain type of information constitutes a “layer” in the GIS. GIS layers can be superimposed to show the spatial relationships of different items.

Grasslands—Habitat types dominated by grasses (family Poaceae) with little woody vegetation or other forbs. In the Analysis Area, most grasslands are dominated by introduced grass species, though some native grasslands are present.

Greenfield route—A route that would be located away from existing linear corridors, thereby creating a new land use.

Habitat types—Communities of plants that typically occur together.

Hertz (Hz)—The unit of frequency in cycles per second; power systems in the U.S. operate with a frequency of 60 Hz.

High Potential Site/High Potential Route Segment—The term "high potential" in this context pertains to route segments or sites associated with National Historic Trails (NHT) with an increased likelihood of being historically significant. Federal land managers are required to identify such resources under the National Historic Trails System Act.

High voltage—Lines with 230 kV or above electrical capacity.

Histosols—Soils derived from organic matter often associated with wetland areas.

Historic property—Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior.

Horizontal boring (HDD; or jack-and-bore)—An augering operation that simultaneously pushes a 36- to 42-inch steel casing through a crossing (e.g., water crossing) and removes the spoil inside the casing with a rotating auger.

"Hot" rebuild—Replacing an existing transmission line and its structures while maintaining power in the existing lines.

Hub and spoke—Refers to a transmission system in which each substation is a hub and receives or sends electricity along the spokes, with a backbone connecting the hubs.

Hydrology—The science dealing with the properties, distribution, and circulation of water.

Idaho Power—Idaho Power is a wholly owned subsidiary of IDA-CORP, a holding company. Idaho Power is responsible for providing electrical service to its service area, which includes most of southern Idaho and a portion of eastern Oregon, serving more than 480,000 general business customers. Idaho Power is a regulated public utility under the laws of the State of Idaho and is also a public utility under the jurisdiction of the Federal Energy Regulatory Commission (FERC).

Implosive fittings—A method of attaching the conductor to the insulator assembly at the dead-end structure. It uses explosives to compress the metal together. Implosive fittings do not require heavy equipment, but do create noise similar to a loud explosion when the primer is struck. The implosive type sleeve is faster to install than hydraulic compression fittings and results in a very secure connection between the conductor and the sleeve. Implosive sleeves are planned for the Project.

Indian tribe—An Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians. Government-to-government

consultation is required for any project between the federal government and the government of any potentially impacted tribe.

Indirect effects—Those effects that are caused by the action and are later in time or farther removed in distance, such as sedimentation from soil disturbance, but are still reasonably foreseeable.

Insulators—A ceramic or other nonconducting material used to keep electrical circuits from jumping over to ground.

Integrated Resource Plan (IRP) (also known as the Energy Plan for the Future)—A comprehensive look at present and future demands for electricity, as well as a plan for meeting those demands.

Intermittent or seasonal stream—One which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.

Intermountain West—The region of North America lying west of the Rocky Mountains and east of the Cascade Mountains of Washington and Oregon and the Sierra Nevada Mountains of California

Invasive species—A species that is not native to the habitat under consideration and whose introduction causes, or is likely to cause, economic or environmental harm (Executive Order 13112). Invasive plants are typically adaptable, aggressive, and have a high reproductive capacity.

Invertebrates—Any animal without a backbone or spinal cord; any animal other than a fish, amphibian, reptile, bird, or mammal.

Irretrievable commitments—A term that applies to the loss of production, harvest, or use of natural resources. Four example, some or all of the timber production from an area is lost irretrievably while an area is serving as a winter sports site. The production list is irretrievable, but the action is not irreversible. If the use changes, it is possible to resume timber production.

Irreversible commitments—A term that describes the loss of future options. Applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, that are renewable only over long periods of time.

Isolated wetlands—Wetlands that have no connection with any tributary system that flows into traditional navigable waters or interstate waters (e.g., intrastate lakes, streams, prairie potholes, etc.)

K factor—A measure of soil susceptibility to erosion and rate of runoff.

Kcmil (1,000 cmils)—A quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of circular mils. A circular mil (cmil) is the area of a circle with a diameter of one thousandth (0.001) of an inch.

Key Observation Point (KOP)—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 from the Project. Views from KOPs are

described by distance zones and are based on perception thresholds (changes in form, line, color, and texture).

Kilovolt —One thousand volts (kV). Also see **volt**.

Landscape—For the purposes of the U.S. Department of the Interior (DOI) policy and related Departmental efforts, a "landscape" is as an area encompassing an interacting mosaic of ecosystems and human systems characterized by a set of common management concerns. The landscape is not defined by the size of the area, but rather by the interacting elements that are relevant and meaningful in a management context. The term "landscape" is not exclusive of areas described in terms of aquatic conditions, such as watersheds, which may represent the appropriate landscape-scale (600 DM 6).

Landslide —Any mass-movement process characterized by downslide transport of soil and rock, under gravitational stress, by sliding over a discrete failure surface; or the resultant landform. Can also include other forms of mass wasting not involving sliding (rockfall, etc.).

Large woody debris (LWD)—Any piece of downed wood larger than 4 inches in diameter and 6 feet long.

Lattice tower—A freestanding steel framework tower that is often used to support electric transmission lines with voltages above 100 kilovolts.

Laydown yard—see **Staging Area**

Lead Agency—The agency or agencies preparing, or having taken primary responsibility for preparing, an environmental document as required by NEPA. For the Gateway West Transmission Line Project, the BLM is the lead agency.

Line losses—Energy consumed by the conductor generating heat during transport of power through each line; a function of load, circuit length, conductor size, and electrical "resistance."

Lithic landscape—An area or region where aboriginal people habitually tested and procured tool stone and lithic materials.

Lithic scatter—Consists of stone material that has been left behind or dropped and can include stone tools such as projectile points, knives, or simply debris from stone tool manufacture or lithic procurement activities.

Load—The amount of electric power or energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-consuming equipment of customers.

Load growth—An increase in demand for electricity typically driven by a variety of events, including population increases and new commercial and industrial projects that provide jobs to that population. (See **Load**.)

Low-gradient—With gentle slopes.

Major stationary source—a source that emits more than a certain amount of a pollutant as defined by the U.S. Environmental Protection Agency. The amount of

pollutants allowed for certain new sources is defined by the EPA's New Source Performance Standards.

Management Area (MA)—Unit of federal land having different management emphasis or direction.

Manual 6280—Provides policies for the management of National Scenic and Historic Trails. Specifically, this manual identifies requirements for the management of congressionally designated NHTs; trails undergoing a National Trail Feasibility Study; trails that are recommended as suitable for National Trail designation through the National Trail Feasibility Study; inventory, planning, management, and monitoring of designated National Scenic and Historic Trails; and data and records management requirements for National Scenic and Historic Trails. The manual also provides guidance on the application of NEPA to NHTs and Trails Under Study.

Marshaling yard—See **Staging Area**.

Mass wasting—The slow downward slope of rock debris.

Megawatts (MW)—A megawatt is one million watts, or one thousand kilowatts; an electrical unit of power.

Mid-successional (or mid-seral)—A forest often characterized by a single-age class and closed canopies and most commonly harvested in commercial timber operations; stands are typically between 30 and 80 years old.

Migratory bird—A bird that moves seasonally to different ranges to maximize breeding and feeding opportunities.

Migratory Bird Treaty Act (MBTA)—A law enacted in 1918 that prohibits pursuing, hunting, taking, capturing, killing, possessing, selling, bartering, purchasing, delivering, transporting, and receiving any migratory birds, parts, nests, or eggs.

Milligauss (mG)—A unit used to measure magnetic field strength; one-thousandth of a gauss.

Minority community—A group of people who are considered a minority in the United States population and who experience common conditions of environmental effect. (See **Environmental justice**)

Mitigation—**Avoiding** an impact altogether by not taking a certain action or parts of an action; **Minimizing** impacts by limiting the degree or magnitude of the action and its implementation; **Rectifying** an impact by repairing, rehabilitating, or restoring the affected environment; **Reducing** or eliminating an impact over time by preservation and maintenance operations during the life of the action; and **Compensating** for an impact by replacing or providing substitute resources or environments. (40 CFR 1508.20)

Mitigation and Enhancement Portfolio (MEP)—A plan submitted by the Proponents aimed at offsetting impacts to resources and values and enhancing the resources and values found in the SRBOP.

Mitigation Hierarchy—The elements of mitigation, summarized as avoidance, minimization, and compensation, provide a sequenced approach to addressing the foreseeable impacts to resources and their values, services, and functions. First,

impacts should be avoided by altering project design, location, or declining to authorize the project; then minimized through project modifications and permit conditions; and, generally, only then compensated for remaining unavoidable impacts after all appropriate and practicable avoidance and minimization measures have been applied. The DOI policy affirms this hierarchical approach, while recognizing that in limited situations, specific circumstances may exist that warrant an alternative from this sequence, such as when seeking to achieve the maximum benefit to impacted resources and their values, services, and functions (600 DM 6).

Multipurpose yards—The multipurpose yards will serve as field offices, reporting locations for workers, parking space for vehicles and equipment, sites for material storage, fabrication assembly and stations for equipment maintenance, and concrete batch plants (also known as a **laydown yard**, **staging area** or **marshaling yard**).

National Environmental Policy Act (NEPA)—Federal statute, signed into law on January 1, 1970, that contains procedures to ensure that federal agency decision makers take environmental factors into account. The two major purposes of the NEPA process are citizen involvement and better informed decisions. The Act establishes national environmental policy and goals for the protection, maintenance, and enhancement of the environment, and it provides a process for implementing these goals within the federal agencies. The Act also establishes the Council on Environmental Quality (CEQ) and requires an environmental impact statement on all major Federal actions significantly affecting the quality of the human environment. [42 U.S.C. 4332 2(2)(C).]

National Historic Landmark—A historic property that the Secretary of the Interior has designated a National Historic Landmark.

National Historic Preservation Act (NHPA)—The National Historic Preservation Act (Public Law 89-665 and amendments thereto; 16 U.S.C. 470 et seq.) was enacted in 1966. It has had major amendments, primarily additions to expand the effect of the law or to clarify its implementation, in 1980 and 1992. The law contains a strong policy statement supporting historic preservation activities and programs.

National Historic Trails (NHTs)—Extended trails which follow as closely as possible and practicable the original trails or routes of travel of national historic significance (16 U.S.C.1242 [a]).

National Historic Trails System Act—This Act (P.L. 90-543, as amended through P.L. 111-11, March 30, 2009) was passed in 1968 to establish a national trails system, including recreational, scenic, and historic trails. The Act specifies that the Secretary of the Interior and/or the Secretary of Agriculture is responsible for developing and administering the trails system.

National Register of Historic Places (NRHP)—Authorized by the NHPA of 1966 (P.L. 102-575), the NRHP is the National Park Service's (NPS) official list of the Nation's historic places that have been determined worthy of historic preservation.

National Vegetation Classification System (NVCS)—A hierarchical classification system that defines vegetation associations by species composition, uniform habitat

conditions, and uniform physiognomy (i.e., the general characteristic of the landscape such as shrub-steppe or mixed conifer).

Native American Graves Protection and Repatriation Act (NAGPRA)—NAGPRA was established in 1990 to provide a means for museums and curation facilities to return certain collected items to Native American and Native Hawaiian groups. The Act pertains to the repatriation of human remains, funerary objects, sacred objects, and objects of cultural patrimony. Federal grants are awarded to indigenous groups and institutions holding collections under the act to assist in the repatriation process, which is overseen by the Native American Graves Protection and Repatriation Review Committee.

New Source Review (NSR)—Federal pre-construction review for affected sources located in non-attainment areas for air quality.

Nitrogen oxides—A group of compounds consisting of various combinations of nitrogen and oxygen atoms.

No Action Alternative—The predicted result of the denial of the applications for Right-of-Way Grant and Special Use Permit. Under the No Action Alternative, the Gateway West Project would not be constructed (no new substations, substation expansion, or transmission line).

National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries)—The federal agency that oversees threatened and endangered anadromous fish species.

Nonattainment area—An area that does not meet air quality standards set by the Clean Air Act for specified localities and periods.

Northern Tier Transmission Group (NTTG)—A group of transmission providers and customers actively involved in the sale and purchase of transmission capacity that delivers electricity in the Pacific Northwest and mountain states.

Notice of Intent (NOI)—A public notice, published in the Federal Register, that an environmental impact statement will be prepared and considered in the decision making for a proposed action. It also provides background information on the proposed project in preparation for the scoping process.

Notice to Proceed (NTP)—Letter from a principal (client or owner) to a contractor stating the date the contractor can begin work subject to the conditions of the contract. The performance time of the contract starts from the NTP date.

Noxious weed—A legal term, meaning any plant officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property.

Off-highway vehicle—Land vehicles mostly used for recreation purposes on public or private trails, beaches or fields, or in the woods; usually not legal to operate on public highways, streets or roads. Examples are all-terrain vehicles (ATVs), off road motorcycles or dirt bikes, snow mobiles and four wheel drive vehicles such as jeeps and trucks.

Old growth—A forest typically at least 200 years of age with moderate to low canopy closure; a multi-layered, multi-species canopy dominated by large overstory trees; numerous large snags; heavy accumulations of fallen wood; smaller trees in various age classes, as well as shrubs and herbaceous vegetation in the understory and on the forest floor.

Open camps or habitation sites—Defined minimally by the presence of one or more hearth features.

Open Access Transmission Tariff (OATT)—Electronic transmission tariff accepted by the U.S. Federal Energy Regulatory Commission requiring the Transmission Service Provider to furnish to all shippers with non-discriminating service comparable to that provided by Transmission Owners to themselves.

Opportunity—A resource or condition that can accommodate a transmission line route, including existing utility or transportation corridors.

Oregon-California Trails Association (OCTA)—OCTA is a non-profit (501 (C) (3) Association) headquartered in Independence, Missouri. Members are dedicated to preservation of overland emigrant trails and educating the public on the emigrant experience through publication of their Overland Journal and News from the Plains newsletter in addition to other public outreach efforts.

Outage—Events caused by a disturbance on the electrical system that requires the provider to remove a piece of equipment or a portion or all of a line from service. The disturbances can be either natural or human-caused.

Overload—Moving too much current flow over transmission facilities. Equipment has safeguards: in the event of system overload, switches will disconnect sensitive equipment from the flow of electricity**.**

Ozone—Associated with the corona discharge of high-voltage transmission lines. Rapidly recombines back to O_2.

PacifiCorp (Rocky Mountain Power)—Rocky Mountain Power is the trade name under which PacifiCorp delivers electricity to more than 955,000 customers in the Rocky Mountain Power service area, which includes portions of Utah, Wyoming, and Idaho. It transmits electricity via a grid of transmission lines throughout a six-state region. PacifiCorp serves 1.7 million retail customers through its distribution system. Rocky Mountain Power operates under oversight and regulatory controls of the public utility commissions of Wyoming, Utah, and Idaho. PacifiCorp is a public utility under the jurisdiction of the FERC.

Palustrine—Northwest Wetland Inventory system that includes wetlands dominated by trees, shrubs, and persistent emergent plants associated with water bodies that cover less than 20 acres or with water less than 6.6 feet deep.

Parturition areas—Areas where habitat is appropriate for female big game animals to seclude themselves while giving birth to young in late spring or early summer. Such areas are usually characterized by ample hiding cover and forage.

Perennial stream—A stream that flows continuously.

Petitioned species—A species for which a formal request is made to the U.S. Fish and Wildlife Service to give Endangered Species Act protection as either threatened or endangered. The Service reviews the information contained in the petition and other scientific information in their files to determine if further analysis is needed.

Physiographic—Pertaining to the features and phenomena of nature.

Power—The rate at which work is done. The basic unit of measure for power is the watt (w).

Prevention of Significant Deterioration (review)—Federal pre-construction review for affected sources located in attainment areas for air quality. It is intended to prevent a new source from causing air quality to deteriorate beyond acceptable levels.

Prime farmland—A land use classification used by the U.S. Department of Agriculture (7 CFR §657.5) where a favorable growing season, adequate precipitation or irrigation source, and soil characteristics result provide good to excellent crop production.

Programmatic Agreement—A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a federal agency program, complex undertaking, or other situations in accordance with 36 CFR § 800.14(b).

Proponents—Idaho Power Company and PacifiCorp, collectively.

Proposed Action—The Proposed Action for the federal agencies is to consider whether to issue right-of-way grants across various parcels of public lands to allow the construction and operation of portions of new 230-kV and 500-kV electric transmission system that would be located on federally managed lands between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho.

Proposed Route—The route of the proposed Project as sited and proposed by the Proponents and presented to the federal agencies for their consideration in applications for right-of-way grants.

Protohistory—Refers to a period between prehistory and history, during which a culture or civilization has not yet developed writing, but other cultures have already noted its existence in their own writings.

Public Scoping Report—A report developed by the BLM that documents public outreach efforts and summarizes the comments received during the public scoping period.

Purpose and Need (NEPA)—Under the National Environmental Policy Act of 1969 (NEPA), the need to take an action may be something the agency identifies itself, or it may be a need to make a decision on a proposal brought to it by someone outside of the agency, for example, an applicant for a permit. Alternatives are measured against how well they meet the underlying need and best achieve the purposes to be attained.

Purpose and Need (project proponent)—As identified by an applicant or proponent of a project, the purpose and need describes the intended outcome of the project and the compelling reason why it is being proposed. Alternatives are measured against how well they meet the underlying need and best achieve the purposes to be attained.

Raptor—A bird of prey that feeds upon smaller animals.

Record of Decision (ROD) —The document that is prepared to substantiate a decision based on an EIS. The ROD is the final step for the BLM and Forest Service in the EIS process. The ROD states the final agency decisions, identifies the alternatives considered and discusses mitigation, enforcement and monitoring commitments.

Regeneration station—A station amplifying the signals between substations or regeneration stations when the distance between exceeds 55 miles. Regeneration stations consist of a building 12 by 32 by 9 feet tall, a fenced yard, access road, and distribution power supply from the local distribution system. They are typically built very near the transmission line and have the fiber optic cable entry and exit runs to connect to the overhead ground fiber optic cables along the transmission line.

Reliability—Transmission systems must be built with sufficient levels of redundancy to enable the transmission system to reliably operate in the event of the loss of any single element (i.e., transmission line segment or substation element). Following loss of any single element, the transmission operator has 20 minutes to readjust system flows, thereby bringing flows on lines and transformers to within normal ratings, in preparation for the next facility outage.

Remaining effects—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).

Remote sensing—"Remote sensing is the science and art of obtaining information about an object, area, or phenomenon through the analysis of data acquired by a device that is not in contact with the object, area, or phenomenon under investigation."[1] The term is most often applied to aerial or satellite-based imagery recording and interpretation.

Residual effects—Those effects remaining after mitigation has been applied to the proposed action or an alternative.

Revegetate—Re-establishing vegetation on a disturbed site.

Revised proposed Route—The route of the proposed Project as sited and proposed by the Proponents in their revised application for right-of-way grants for segments 8 and 9 submitted in August 2014.

Right-of-way (ROW)—Refers to the area, generally centered on a specified centerline, requested by the Proponents of BLM and of other landowners and managers for the construction, operation, and maintenance of a linear feature such as a road, electric transmission line, or pipeline.

Right-of-way (ROW) grant—An authorization to use or occupy a specific piece of public land for a certain project, such as a road, pipeline, transmission line, or communication site. A ROW grant authorizes rights and privileges for a specific use of

[1] Lillesand, Thomas M., and Ralph W. Kiefer. 1987. *Remote Sensing and Image Interpretation*. John Wiley & Sons. New York.

the land for a specific period of time. For a transmission line, this includes the construction, operation, maintenance, and termination of the Project. Generally, a ROW is granted for no longer than 30 years.

Riparian areas—Vegetation communities that occur adjacent to waterways such as streams, rivers, springs, ponds, lakes, or tidewater and that 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.

Riprap—Broken stones put in areas to prevent erosion, especially along river and stream banks.

Riverine system—Wetland inventory system that includes wetlands not dominated by trees, shrubs, or persistent emergents that are contained within a river channel.

Roadless area—An area of undeveloped public land typically exceeding 5,000 acres within which there are no improved roads maintained for travel by means of motorized vehicles intended for highway use.

Sage-grouse lek—A location used by male sage-grouse, generally every year, to assemble during the mating season and engage in competitive displays that attract females.

Scenery Management System—The Scenery Management System (SMS) replaces the Visual Management System (VMS) used in the most recent Medicine Bow National Forest Land and Resource Management Plan. The SMS provides an overall framework for the orderly inventory, analysis, and management of scenery. The new system applies to all national forests and grasslands administered by the Forest Service and to all Forest Service management activities. The SMS process uses particular ecosystems as the environmental context for aesthetics.

Scoping—Part of the federal environmental analysis process required under NEPA where significant issues are identified for detailed analysis. Scoping includes, but is not limited to, a formal scoping period early in the analysis process in which members of the public are invited to review the proposed project and identify possible issues or concerns with the project.

Section 106—Section 106 of the NHPA is a clause stating that heads of federal agencies must consider potential effects to any sites eligible for listing on the NRHP prior to the approval of licenses or the issuance of federal funds for undertakings on lands over which they hold jurisdiction.

Sedimentation—The deposition or accumulation of sediment.

Sensitive species—Those plants and animals identified by the Regional Forester for which population viability is a concern as evidenced by significant current or predicted downward trend in populations or density and significant or predicted downward trend in habitat capability.

Seral—Pertaining to the stages of ecological succession occurring in communities of plants and animals until the climax is reached.

Severe winter relief range—A documented survival range which may or may not be considered a crucial range area as defined above. It is used to a great extent, only in occasionally extremely severe winters (e.g., 2 years out of 10). It may lack habitat characteristics which would make it attractive or capable of supporting major portions of the population during normal years but is used by and allows at least a significant portion of the population to survive the occasional extremely severe winter. [Wyoming Chap. of Wildlife Society 1990]

Shrub wetlands—Wetlands dominated by woody perennial vegetation smaller than trees.

Shrubland—A habitat type characterized by woody vegetation smaller than trees (in general, having multiple main stems and being less than 20 feet in height and six inches diameter at breast height at maturity). In the Analysis Area, common shrubland plant species are big sage, mountain sagebrush, rabbitbrush, antelope bitterbrush, greasewood, and fourwing saltbush.

Single-circuit transmission line—A transmission line composed of three electrical phases and two lightning protection shield wires. One of the lighting protection shield wires is a steel OHGW, and the other is typically an OPGW.

Single-contingency—An analysis for reliability that takes into account a single event that could affect the grid. (See also **Double-Contingency**)

Siting study area—Initially defined as being 10 miles on either side of the centerlines of the Proposed Route and Route Alternatives considered in the initial siting process. The siting study area was designed to be large enough to include ancillary facilities, including roads, substations, structures, and areas needed for construction. As mapped, the siting study area includes 28 million acres. See also **Analysis Area.**

Soil erosion—The movement of soil particles, usually as a result of wind or water forces. Many factors affect soil erosion, including soil grain size, cohesion factor, soil moisture content, type and amount of vegetative cover, precipitation amount and intensity, steepness of slope, and wind speed.

Source Station—A power station that is the receiving point for energy from distant generation delivered over high voltage power lines.

Snag—A dead or dying tree.

Span length of a transmission circuit—the distance between two transmission support structures traveled by the conductors, measured either horizontally or along the conductors from the end of one insulator string to the end of the next insulator string.

Special Use Permit—A legal document that allows occupancy, use, rights, or privileges of National Forest System (NFS) land. The authorization is granted for a specific use of the land for a specific period of time.

Special Status Species—Species of plants or animals that have been designated by government agencies as needing special monitoring, conservation, or protection, usually due to declining populations. This group includes federally endangered and threatened species as well as other designations.

Species—A group of interbreeding individuals not interbreeding with another such group; similar, and related species are grouped into a genus.

Staging Area—A fenced, generally flat location where materials, equipment, and vehicles are stored prior to their use in construction of the transmission line or its ancillary facilities. Also known as a **laydown yard, marshaling yard,** or **multipurpose yard**.

Structures—Refers to a type of support used to hold up transmission or substation equipment.

State Historic Preservation Office (SHPO)—Created under Section 101 of the NHPA to survey and recognize historic properties, review nominations for properties to be included in the National Register of Historic Places, review undertakings for the impact on the properties as well as support federal organizations, state and local governments, and the private sector. States are responsible for setting up their own SHPO; therefore, each SHPO varies slightly on rules and regulations.

Stray voltage—Stray voltage is an extraneous voltage that appears on grounded surfaces in buildings, barns, and other structures, including utility distribution systems.

Stream Channel (Idaho)—By statute definition in Idaho, a natural water course of perceptible extent that has definite beds and banks, and which confines and conducts continuously flowing water. Only present channels are regulated under the stream alteration permit. Historic channels that no longer conduct continuously flowing water are excluded from permit requirements. Continuously flowing water is defined as an amount of water capable of providing for the migration and movement of fish, but excludes those portions of streams that naturally go dry at the location of the alteration.

Stream channel alteration—Any activity that will obstruct, diminish, destroy, alter, modify, relocate, or change the natural existing shape or direction of water flow of any stream channel.

Substation—A fenced site containing switching and transformation equipment needed to transform one voltage to another and for protecting and controlling transmission and distribution lines. A substation is used to raise voltages for long distance transmission and to lower transmission voltages for distribution to the end users.

Sub-transmission Lines (69 kV; 138 kV; 161 kV)—Lines used for transmitting electrical energy between substations that are close to one another (up to approximately 100 miles). These lines will typically not carry as much energy as the extra-high voltage lines.

Summer or Spring-Summer-Fall range—A population or portion of a population of animals use the documented habitats within this range annually only (from the previous winter) to the onset of persistent winter conditions (variable, but commonly this period is between 5/1 and 11/30 or shorter in Wyoming). (5/1 – 11/14, adopted by WGFD in 2004) [Wyoming Chapter of Wildlife Society 1990]

Switches—Devices used to mechanically disconnect or isolate equipment; found on both sides of circuit breakers.

System reliability—The ability of a power system to provide uninterrupted service, even while that system is under stress.

Take—Harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct toward a species listed under the ESA.

Talus—Rock debris that has accumulated at the base of a cliff or steep slope.

Tap—The point at which a transmission line is connected to a substation or other electrical device to provide service to a local load.

Temporary Use Permit—A permit given for temporary use of federally managed lands. A temporary use permit is typically issued for the construction of a project, followed by a special use permit or long-term right-of-way grant for the operation of the project.

Terrestrial—Occurring on land.

TES species—threatened and endangered species listed or candidates for listing under the federal ESA and those species listed by the BLM and the Forest Service as sensitive.

Threatened species—Those species officially listed by the U.S. Fish and Wildlife Service that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range. [ESA §3(20)]

Total Maximum Daily Load (TMDL)—A quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect bodies of water.

Topsoil—The uppermost soil layer, generally ranging from a few inches to less than one foot in thickness. Topsoil is the site of greatest organic content, contains the most soil nutrients, and supports the greatest amount of plant life.

Track road—Unimproved dirt roads without surfacing or regular maintenance, generally 8 to 12 feet in width.

Traditional Cultural Property (TCP)—A property that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.

Transformers—Electrical equipment usually contained in a substation that is needed to change voltage on a transmission system.

Transmission line—A system of structures, wires, insulators, and associated hardware that carry electric energy from one point to another in an electric power system. Lines are operated at relatively high voltages varying from 69 kV up to 765 kV, and are capable of transmitting large quantities of electricity over long distances.

Trona—A monoclinic mineral, grayish or yellowish hydrous sodium carbonate and bicarbonate, $Na_2CO_3 \cdot NaHCO_3 \cdot 2H_2$, occurring in dried or partly evaporated lake basins.

Turbidity—The state or condition of opaqueness or reduced clarity of a fluid, due to the presence of suspended matter.

Undertaking—Defined at 36 CFR 800.16(y) as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency."

Viewshed—As defined in the BLM Visual Resource Management Manual, refers to "the landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor."

Visual Contrast Rating (VCR)—A systematic process used by the BLM to analyze potential visual impact of proposed projects and activities.

Visual Impact Assessment Point (VAP)—Specific locations where transmission facilities constructed along the alternative corridors would be visible.

Visual resource inventory (VRI)—A systematic process for determining the visual values on public lands. The inventory process has three parts: scenic quality evaluation, sensitivity level analysis, and delineation of distance zones. Based on the combinations of the three, BLM-managed lands can then be categorized as Class I (most valued and highest quality of scenery) to Class IV (areas of low scenic quality and sensitivity at most or all distance zones). These inventory classes represent the existing visual resources.

Visual Resource Management (VRM) system (BLM)—The BLM system identifies four VRM Classes (I through IV) with specific management prescriptions for each class. The system is based on an inventory of the existing scenic quality, viewer sensitivity, and viewing distance zones. The management class for a given area is typically arrived at by comparing the scenic quality, visual sensitivity, and distance zone with the overall goals set forth for the area.

Volt—The international system unit of electric potential and electromotive force—a measure of electrical "pressure".

Voltage—The electrical potential difference between two points expressed in volts; the driving force that causes a current to flow in an electrical circuit.

Waters of the United States—Broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce such as rivers, streams (including ephemeral streams), reservoirs, lakes, and adjacent wetlands. The USACE Wetlands Delineation Manual dated January 1987 (USACE 1987) and its current supplements must be used to determine if an area has sufficient wetland characteristics to be a water of the United States.

Watershed—The area that drains to a common waterway.

Weathering steel—A group of steel alloys developed to eliminate the need for painting (proposed for all H-frame structures).

West-wide Energy (WWE) Corridor—The designation of energy corridors, based on Section 368 of the Energy Policy Act of 2005, on federal lands in 11 western states, including Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

West-wide Energy Corridor Programmatic EIS—Considers 11 contiguous western states for the possible construction, operation, maintenance, and decommissioning and

dismantling of energy infrastructure such as oil and gas pipelines and electric transmission lines. The states considered are Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming (www.corridoreis.anl.gov).

Wetlands—Defined for regulatory purposes as "Those areas that are inundated or saturated by surface or ground water (hydrology) at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation (hydrophytes) typically adapted for life in saturated soil conditions (hydric soils). Wetlands generally include swamps, marshes, bogs, and similar areas (33 CFR 328.3 and 40 CFR 232.2(r))."

Winter range—Areas that are used by animals, primarily big game, during winter months when forage is scarce and snow is often deep.

Winter/yearlong range—A population or a portion of a population of animals makes general use of the documented suitable habitat within this range on a year-round basis. But during the winter months (commonly between 12/1 and 4/30), there is a significant influx of additional animals into the area from other seasonal ranges. (11/15 – 4/30, adopted by WGFD in 2004).

Wire zone—A linear zone under the transmission wires, and extending 10 feet beyond them, maintained in vegetation cover less than 5 feet high.

Yearlong range—A population or portion of a population of animals makes general use of the suitable documented habitat within the range on a year round basis. Exception occasionally, under severe conditions (extremely severe winters, drought) animals may leave the area.

Zoning—Regulations used to guide growth and development; typically involve legally adopted restrictions on uses and building sites in specific geographic areas to regulate private land use.

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