Record of Decision for the Energy Gateway South Transmission Project

Utility Right-of-Way and Resource Management Plan Amendments

BLM/WY/PL-14/009+5001
Case Files: WYW-174597, WYW-174597-01
COC-72907, COC-72907-01
UTU-87237, UTU-87237-01

BLM

Wyoming State Office

December 2016

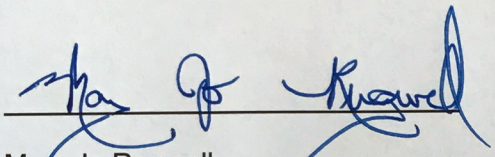
Final Agency Actions

Issuance of Right-of-Way Grants

Wyoming State Director's Recommendation

I recommend approval of an electric transmission line right-of-way grant (WYW-174597, WYW-174597-01) to PacifiCorp, subject to the terms, conditions, stipulations, and environmental protection measures developed by the U.S. Department of the Interior and identified in this Record of Decision (ROD), including its appendices, and the Plan of Development developed by PacifiCorp that is appended to this ROD.

In addition, it is my decision to amend the Rawlins Resource Management Plan (RMP) in Wyoming to bring the Selected Alternative into conformance with management objectives in this RMP.



Mary Jo Rugwell
Wyoming State Director

Colorado State Director's Recommendation

I recommend approval of an electric transmission line right-of-way grant (COC-72907, COC-72907-01) to PacifiCorp, subject to the terms, conditions, stipulations, and environmental protection measures developed by the U.S. Department of the Interior and identified in this ROD, including its appendices, and the Plan of Development developed by PacifiCorp that is appended to this ROD.

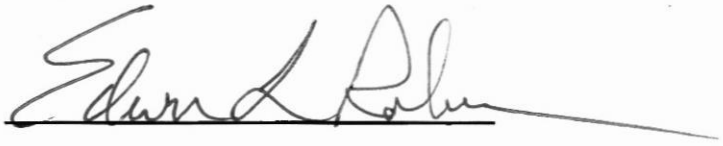
In addition, it is my decision to amend the Little Snake RMP in Colorado to bring the Selected Alternative into conformance with management objectives in this RMP.

Ruth Welch
Colorado State Director

Utah State Director's Recommendation

I recommend approval of an electric transmission line right-of-way grant (UTU-87237, UTU-87237-01) to PacifiCorp, subject to the terms, conditions, stipulations, and environmental protection measures developed by the U.S. Department of the Interior and identified in this ROD, including its appendices, and the Plan of Development developed by PacifiCorp that is appended to this ROD.

In addition, it is my decision to amend the Price, Vernal and Pony Express RMPs in Utah to bring the Selected Alternative into conformance with management objectives in these RMPs.



Edwin L. Roberson
Utah State Director

Approval by Assistant Secretary

I hereby approve the decisions recommended by the State Directors, subject to the conditions identified in this ROD. My approval of these decisions constitutes the final decision of the Department of the Interior and, in accordance with the regulations at 43 CFR 4.331(b), 4.410(a)(3), is not subject to appeal under Departmental regulations at 43 CFR 4. Any challenge to this decision, must be brought in federal district court and is subject to 42 USC 4370m-6.

Approved by:

12-13-16

Janice M. Schneider
Assistant Secretary
Land and Minerals Management
U.S. Department of the Interior

Executive Summary

This Record of Decision (ROD) reflects the decision of the United States (U.S.) Department of the Interior (DOI) Bureau of Land Management (BLM) to approve a right-of-way grant and associated Resource Management Plan (RMP) amendments for the Energy Gateway South Transmission Project (Project). This ROD is issued consistent with the requirements of Title II and Title V of the Federal Land Policy and Management Act (FLPMA), 43 United States Code (USC) 1712-1723 (Title II) and 1761-1771 (Title V), other applicable laws, and associated implementing regulations. The decisions in this ROD apply only to BLM-administered lands.

After extensive environmental analysis, consideration of public comments, and compliance with all federal laws and policies, it is the decision of the BLM to approve the Project and the associated RMP amendments as explained below. Specifically, this ROD authorizes a right-of-way grant for the construction, operation, and maintenance of the transmission line and associated facilities proposed by PacifiCorp. It also approves land use plan amendments to the BLM Rawlins, Little Snake, Pony Express, Price, and Vernal RMPs.

The Project includes the construction of a 416-mile, single circuit 500-kilovolt (kV) alternating current (AC) transmission system extending from the permitted Aeolus Substation, near Medicine Bow in Carbon County, Wyoming, to the existing Clover Substation, near Mona in Juab County, Utah. The impacts of this action were analyzed in the Final Environmental Impact Statement (EIS) for the Project (announced in the Federal Register on May 13, 2016).

The BLM's approval will take the form of a 30-year right-of-way grant, issued in conformance with Title V of FLPMA and BLM's implementing regulations found at 43 Code of Federal Regulations (CFR) Part 2800. The BLM will also issue a temporary (i.e., short-term) right-of-way grant for areas to be used only during construction for a period of 5 years. Construction of the Project must commence within 5 years after the effective date of the right-of-way grant. BLM has the discretion to renew a right-of-way grant if doing so is in the public interest, subject to applicable legal requirements.

The route alignment approved by this ROD (referred to as the Selected Alternative) follows the Agency Preferred Alternative in the Final EIS (WYCO-B and COUT-C). The permanent facilities authorized by the right-of-way grant include:

- Constructing a single-circuit, alternating current 500kV overhead transmission line (including structures, shield wires, conductors, and insulators) between the Aeolus Substation and Clover Substation;
- Constructing two series compensation stations, at points between the Aeolus and Clover substations, to improve the transport capacity and efficiency of the transmission line;
- Constructing communication regeneration stations associated with the transmission line (approximately every 55 miles);
- Rebuilding two existing 345kV transmission lines between the Clover and Mona Substations (in the existing rights-of-way);
- Rerouting the Mona to Huntington 345kV transmission line through the Clover Substation;
- Relocating an approximate 2-mile portion of an existing line (Bears Ears to Bonanza 345kV transmission line) to eliminate multiple line crossings in a short distance and avoid the Raven Ridge Area of Critical Environmental Concern; and
- Developing access roads.

This right-of-way grant is conditioned on the Applicant's satisfaction of the mitigation plans and monitoring requirements and all the commitments and requirements outlined in this ROD (refer to Appendix B). It will also require compliance with all applicable tribal, federal, state, and local laws and regulations. Pursuant to 43 CFR 2805.10, the Applicant may not use the right-of-way until the BLM accepts a Plan of Development (POD) that addresses all of the requirements in the ROD and issues a Notice to Proceed (NTP). As explained in this ROD the BLM will not issue a NTP for construction until the Applicant prepares an updated POD (called the final POD) that incorporates the draft POD (Appendix D) and all of the information and requirements in this ROD, including all appendices. In the interim, and as explained below, the BLM may issue NTPs for certain pre-construction activities, such geotechnical testing, before the final POD is completed and the overall NTP for construction is issued.

The Final EIS and Proposed Land-use Plan Amendments was released for a 30-day protest period and a 60-day Governors' Consistency Review commencing on May 13, 2016. All protesting parties received response letters from the BLM Director conveying the Director's decision regarding the concerns raised in the protests. As explained in this ROD, the Director concluded that BLM followed applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Final EIS and Proposed Land-use Plan Amendments. Therefore all protests were denied, and no changes were made to the BLM decision as a result of the protests. Although there was no formal comment period on the Final EIS, after its publication the BLM received comment letters, which were considered to the extent practicable.

This ROD constitutes the Department's and BLM's final decision for the Project, including mitigation and monitoring requirements.

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Background

On November 28, 2007 PacifiCorp submitted an *Application for Transportation and Utility Systems and Facilities on Federal Lands* (Standard Form 299) to the Bureau of Land Management (BLM) for the Energy Gateway South Transmission Project (Project). This application was revised by the Applicant on December 17, 2008; October 11, 2010; and January 15, 2013, to reflect changes in the Project description, including reductions in the Project's' geographic footprint and changes to the Applicant's preferred route.

The Project is part of the Applicant's transmission expansion program, known as Energy Gateway Expansion program. In May 2007, the Applicant announced a multi-year program to reinforce its existing power transmission system by developing approximately 2,000 miles of high-voltage transmission line to provide power from existing and new renewable (e.g., wind, solar) and thermal (e.g., gas, coal) generation sources to meet growing customer needs, ease transmission congestion, and improve the flow of electricity throughout the west. The major components of the west-wide expansion program are the (1) Gateway Central, (2) Gateway West, and (3) Gateway South transmission projects.

This Record of Decision (ROD) addresses the Gateway South Project (EGS Project or Project) and explains the decisions of the BLM to authorize Project-related actions affecting BLM-administered lands and to amend portions of BLM RMPs. Consistent with the National Environmental Policy Act (NEPA), the BLM has integrated its land use planning process with its evaluation of the proposed Project. With approval of these plan amendments, the Project will conform to the approved RMPs (43 CFR 1610.5-3).

As part of the EGS Project, as approved, the Applicant will construct, operate, and maintain a 500-kilovolt (kV), overhead, single-circuit, alternating-current transmission line beginning near Medicine Bow, Carbon County, Wyoming at the Aeolus Substation, which was permitted as part of the Gateway West transmission project. The line would then extend south and west to the Clover Substation (constructed as part of Gateway Central transmission project) near Mona, Juab County, Utah.

The BLM has prepared this ROD based on consideration of the information in the Final Environmental Impact Statement (EIS) and related documents. This decision in this ROD pertains only to those lands in the Project area administered by the BLM. The U.S. Forest Service (USFS), National Park Service (NPS), and Bureau of Indian Affairs (BIA) will issue separate decisions regarding authorizations for lands under their jurisdictions.

Purpose and Need for the Federal Action

The purpose of this federal action is to respond to the Applicant's right-of-way application for construction, operation, and maintenance of the proposed transmission line and associated facilities on federal land.

The purpose and need of the BLM stems from the overarching policy and direction in the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, and the BLM's mission, which is multiple-use and sustained-yield management of the National System of

Public Lands. The purpose and need of the United States Forest Service (USFS) stems from the overarching policy and direction in the Multiple Use and Sustained Yield Act of 1960 (as amended), which authorizes and directs the Secretary of Agriculture to develop and administer the renewable resources on the National Forest System lands for multiple use and sustained yield of the products and services. FLPMA also provides the BLM and the USFS with discretionary authority to grant use (i.e., right-of-way and special-use authorization, respectively) of land they administer, taking into consideration impacts on natural and cultural resources (including historical resources). In doing so, the BLM and the USFS must endeavor "to minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment" through avoidance or mitigation (FLPMA Title V).

The agencies' purpose and need is further guided by the President's Climate Action Plan (President of the United States 2013), which is a broad-based plan to cut carbon pollution. Part of the plan focuses on expanding and modernizing the electric grid to promote clean energy sources. To this end, the agencies are charged with analyzing applications for utility and transportation systems on federal land they administer. When analyzing applications, the BLM also must consider the 2011 Western Electricity Coordinating Council 10-Year Regional Transmission Plan recommendations regarding future transmission needs (Western Electricity Coordinating Council 2011).

Statutory and Regulatory Background

Under FLPMA and the BLM's implementing regulations, the BLM is responsible for managing the public lands for multiple uses, including transmission of electric energy (43 CFR 2806). Title V of FLPMA authorizes the Secretary of the Interior to "grant, issue, or renew rights-of-way for generation, transmission, and distribution of electric energy" (43 USC 1761[a][4]; 43 CFR part 2800). Under 43 CFR 2801.2, the BLM's objective is to grant rights-of-way and to control their use on public lands in a manner that: "(a) protects the natural resources associated with public lands and adjacent lands, whether private or administered by a government entity; (b) prevents unnecessary and undue degradation to public lands; (c) promotes the use of rights-of-way in common, considering engineering and technological compatibility, national security, and land use plans; and (d) coordinates, to the fullest extent possible, all BLM actions under regulations in this part with state and local governments, interested individuals, and appropriate quasi-public entities." In addition to FLMPA, BLM is obligated to ensure that the actions it authorizes comply with other applicable laws, including NEPA, the National Historic Preservation Act (NHPA), and the Endangered Species Act (ESA) (see Other Laws section of this ROD below).

In addition to these authorities, the BLM also considers the direction and objectives established by the Energy Policy Act of 2005 (EPAct), which directs the Secretary to both designate energy corridors and seek to expedite applications to construct transmission lines within such corridors in order "to take into account the need for upgraded and new transmission and distribution facilities to (1) improve reliability; (2) relieve congestion; and (3) enhance the capability of the national grid to deliver electricity" (42 USC 15926).The BLM recognizes the need for upgraded and new electricity transmission and distribution facilities to improve reliability, relieve congestion, and enhance the capability of the national grid to deliver electricity, as directed in the EPAct. Approval of the Project by this ROD assists the BLM in meeting the purpose of the EPAct.

Approval of this Project also advances Executive policies. In October 2009, nine federal entities—the Council on Environmental Quality (CEQ); the U.S. Department of the Interior

(DOI); the U.S. Department of Agriculture (USDA); the U.S. Department of Energy (DOE); the U.S. Department of Commerce; the U.S. Department of Defense (DOD); the U.S. Environmental Protection Agency (USEPA); the Federal Energy Regulatory Commission; and the Advisory Council on Historic Preservation (ACHP)—signed a Memorandum of Understanding (MOU) committing each of the signatories to increase their coordination to expedite and simplify the process for analyzing, permitting, and building transmission lines on federal lands.

On October 5, 2011, the Administration announced the formation of a Rapid Response Team for Transmission (RRTT) composed of the nine agencies that signed the MOU. This team was formed to more quickly advance the permitting for seven pilot transmission projects, including this Project. The RRTT mission is to "accelerate responsible and informed deployment of these seven key transmission facilities by:

- Coordinating statutory permitting, review, and consultation schedules and processes among involved federal and state agencies as appropriate through Integrated Federal Planning;
- Applying a uniform and consistent approach to consultations with Tribal governments; and
- Expeditiously resolving interagency conflicts and ensuring that all involved agencies are fully engaged and meeting schedules."(CEQ 2011)

Executive Order (E.O.) 13604, issued on March 22, 2012, acknowledged the critical need to invest in and improve infrastructure, including transmission, to maintain the Nation's competitiveness.

Finally, on June 7, 2013, a Presidential Memorandum was issued that requires modernization of our Nation's electric grid through improved siting, permitting, and review, as critical to, among other things, our efforts to make electricity more reliable and economic, promote clean energy sources and enhance energy security. Finally, the President's Climate Action Plan sets a goal of developing 20,000 MW of renewable energy on public lands by 2020 (Executive Office of The President 2013).

In December 2015, Congress passed the Fixing America's Surface Transportation (FAST) Act. Title 41 of the FAST Act ("FAST-41") creates a new entity–the Federal Permitting Improvement Council–to oversee the cross-agency Federal permitting and review process. It also expands the scope of projects for which reviews will be accelerated by adding new agencies (FERC and NRC) and infrastructure sectors (conventional energy generation and manufacturing), and establishes new procedures that standardize interagency consultation and coordination practices. Other FAST Act provisions addressing the project delivery process and tracking environmental review and permitting milestones, are set out in Title I and Title IX. The Project is covered by the FAST Act. The approval of the Project also would help meet these objectives.

As part of its decision to issues a right-of-way grant, in accordance with 43 CFR 1610.5-3, the BLM must not only consider its transmission-related objectives, but also whether the proposed Project conforms with existing RMPs in Wyoming, Colorado, and Utah. These plans identify management objectives for various public land resources, appropriate use on restricted areas, and expected practices to be followed by surface-disturbing and use activities.

Portions of the proposed transmission line alternatives would not conform to certain RMP management objectives. Therefore, the BLM considered whether to amend the RMPs to ensure

that the Project is conforms to the RMPs; the amendments were analyzed in the Draft and Final EISs pursuant to 43 CFR 1610.5-5.

Project Overview

The EGS Project involves the construction, operation, and maintenance of a single-circuit 500kV transmission line from the permitted Aeolus Substation, near Medicine Bow in Carbon County, Wyoming, to the existing Clover Substation, near Mona in Juab County, Utah. Permanent facilities would include:

- Constructing a single-circuit, alternating current 500kV overhead transmission line (including structures, shield wires, conductors, and insulators) between the Aeolus Substation and Clover Substation
- Constructing two series compensation stations, at points between the Aeolus and Clover substations, to improve the transport capacity and efficiency of the transmission line
- Constructing communication regeneration stations associated with the transmission line (approximately every 55 miles)
- Rebuilding two existing 345kV transmission lines between the Clover and Mona Substations (in the existing rights-of-way)
- Rerouting the Mona to Huntington 345kV transmission line through the Clover Substation
- Relocating an approximate 2-mile portion of an existing line (Bears Ears to Bonanza 345kV transmission line) to eliminate multiple line crossings in a short distance and avoid the Raven Ridge Area of Critical Environmental Concern; and
- Developing access roads

Construction of the Project is planned to begin in 2020, placing the Project in-service between 2022 and 2024. Multiple segments of the route could be under construction at the same time. The majority of the construction activity would occur in the first 2 years followed by revegetation and reclamation activities.

Decisions to be Made

The decisions to be made by the BLM are whether to: (1) grant, grant with modifications, or deny a right-of-way to construct, operate, and maintain the proposed facilities on land it administers, including applicable terms and conditions of any such authorization and temporary use authorization(s); and (2) amend portions of the BLM RMPs to ensure consistency with the BLM's authorization.

The BLM, as lead agency, in coordination with cooperating agencies, prepared an EIS analyzing the Applicant's plan for and the potential environmental impacts of constructing, operating, and maintaining the Project.

In accordance with 43 CFR 1610.0-5(b), actions that occur on federal lands administered by the BLM, including a decision to grant a right-of-way under Title V of FLPMA, are guided by decisions specified in the approved BLM RMPs. The applicable RMPs for BLM-administered lands crossed by the proposed transmission line and associated facilities on the selected route are listed in this ROD. The BLM evaluated the proposed route for the Project and alternative

routes to determine if they conform to the approved RMPs governing the public lands where the Project would be sited. The BLM has determined that, for the selected route, the Proposed Action would not conform to certain aspects of its approved land use plans, identified later in this document. That is, in some cases, the proposed transmission line and associated facilities require the BLM to amend certain approved land use plans.

Therefore, through this decision, the BLM is authorizing approval of a right-of-way for the Project and deciding to amend the affected RMPs identified in the Land Use Plan Amendment Section of this ROD. Those amendments are designed to allow for a right-of-way for the proposed transmission line and associated facilities. The land use plan amendments are described in Chapter 5 of the Final EIS, which also includes a description of the planning process and the environmental analysis relating to the proposed land use plan amendments.

Use of any public land authorized under the right-of-way grant for the Project would be contingent on BLM receiving and approving final engineering and design construction plans as part of the final Plan of Development (POD for construction). Until BLM issues Notice to Proceed (NTP; refer to Appendix B for explanation of the process), no surface-disturbing activities associated with construction can occur. Prior to the completion of the POD for construction and issuance of the overall NTP for the Project, the Applicant may request NTP for geotechnical investigation and other site surveys prior to the completion of the POD for construction. Such a NTP will be conditioned on the completion of all necessary site survey work associated with the geotechnical investigation or surveys, and review and approval of those surveys by the relevant agencies.

Specific items that will require a NTP before the right-of-way holder may use the granted areas are identified in Appendix B of this ROD. In addition, the Applicant may not begin construction until compliance with all applicable federal, state, and local and other laws and regulations is documented as satisfactorily complete, as appropriate.

Decision

Right-of-Way Authorization and Selected Alternative

After reviewing the Final EIS and other documentation relating to the proposed right-of-way and plan amendments, the BLM has decided to authorize issuance of a grant to PacifiCorp for a 250-foot-wide right-of-way on 227.9 miles of BLM-administered lands for the construction, operation, and maintenance of a 500kV transmission line following Alternatives WYCO-B and COUT-C, the Agency Preferred Alternative (refer to Map 1 of this ROD). Alternatives WYCO-B and COUT-C are hereafter referred to as the Selected Alternative. This decision would achieve the Project's purpose while also avoiding, minimizing, or compensating for impacts to sensitive resources along the route.

The right-of-way authorization decision applies only to BLM-administered lands in the Project area. In making its decision, however, BLM considered effects on other public lands managed by the BLM, as well effects on private lands and lands managed by agencies other than the BLM. Legal descriptions for the right-of-way granted on BLM-administered lands in the BLM Rawlins, Little Snake, White River, Vernal, Price, Salt Lake, Richfield, and Fillmore Field Offices are included in Appendix C of this ROD.

The decision includes approval of the draft POD that was submitted by the Applicant for purposes of the BLM's NEPA analysis. That POD, which is attached as Appendix D, has been reviewed and approved by the cooperating agencies and the BLM. It is based on information and data carried forward from the Final EIS. As noted above, the requirements for completing an acceptable final POD for construction (prior to any surface disturbing activities other than geotechnical) are included in Appendix B. The final POD must include all of the information and measures included in the draft POD.

The draft POD covers the entire Project and includes the following measures:

- West-wide Energy Corridor (WWEC) interagency operating procedures, which must be adhered to wherever the Selected Alternative is located within a designated WWEC;
- Design features of the Project for environmental protection, as described in Chapter 2 of the Final EIS (refer to Table 2-8) and contained in the draft POD (Appendix D of this ROD);
- BLM RMP land use stipulations, best management practices (BMP), and standard operating procedures applicable to transmission line rights-of-way for Project construction, operation, and maintenance as described in the Final EIS; and
- Additional mitigation and monitoring measures to avoid, minimize, or (over time) rectify impacts. The agency-required mitigation measures are described in Chapter 2 of the Final EIS (refer to Table 2-13). The agency-required mitigation measures have been refined and incorporated into the draft POD (Appendix D of this ROD); the final POD will be required to include application of the mitigation measures based on final design and engineering of the Selected Alternative.

Following the completion of various resource surveys (e.g., for biological, cultural, and paleontological resources) and the review and acceptance by the agency (or agencies) responsible for overseeing the surveys, the agency-required measures in the draft POD will be refined based on those surveys to prepare the final POD for construction. The agencies will be asked to review the final POD. Preparation and approval of the final POD is a required condition of BLM's right-of-way grant(s). Furthermore, the Applicant agrees to be bound by all terms and conditions, stipulations, and mitigation prescribed in such documents. As noted above, completion of the final POD is a precondition of NTP issuance (except for geotechnical work). The Applicant may add requirements to the approved final POD after issuance but the additions may require updated resource surveys or additional NEPA reviews, which will turn on whether the BLM determines the change(s) are substantial. Approval of changes may involve issuance of a variance or amendment to the POD, and potentially amendment to the right-of-way grant. These procedures are spelled out in Appendix A-5 of the draft POD.

Map 1

Selected Alternative

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Alternative Routes

- Selected Alternative
- Alternative Route

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Link Node

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Land Jurisdiction, BLM 2013; City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
Printed: November 2, 2016

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The final POD also will incorporate the additional measures identified in the following documents:

- The Programmatic Agreement (PA) developed by the BLM, State Historic Preservation Officers (SHPO) for Wyoming, Colorado, and Utah, and the Ute Tribe of the Uintah and Ouray Reservation (Ute Tribe), on December 9, 2016, which was executed and is incorporated into this ROD (Appendix E of this ROD);
- The January 2016 Biological Opinion (BO) and informal consultation issued by the U.S. Fish and Wildlife Service (FWS), which has been incorporated into the ROD (Appendix F of this ROD), along with all conservation measures for federally listed species as identified in the July 2015 Final Biological Assessment (BA), including addendum; and
- All standard, terms, conditions, and stipulations of the BLM right-of-way regulations at 43 CFR part 2800.

As noted above, mitigation measures, terms, and conditions have been developed based on the analysis in the Final EIS. Site-specific implementation details will be adopted prior to issuance of a NTP and will include the requirements identified in Appendix B of this ROD and the following:

- The Applicant's completion of the final POD, which is subject to review and approval by the BLM and other agencies with regulatory authority over affected resources. This final POD will include provisions for site-specific mitigation and monitoring during construction, operation, and maintenance of the Project.
- Incorporation of the species-specific conservation measures developed by the BLM and the FWS through the ESA Section 7 consultation process to eliminate or minimize impacts on federally listed species as identified in the BA and BO into the Biological Resources Conservation Plan to be contained in the final POD for construction. Measures include specific requirements related to transmission line structure types (e.g., power line poles) to minimize Project impacts on sensitive species. Species-specific conservation measures (finalized in the BA, dated January 2015) apply to ESA-listed species where they occur regardless of jurisdiction.
- Incorporation of the species-specific conservation measures for greater sage-grouse developed through the NEPA process and carried forward in the BA for consideration by the FWS into the Greater Sage-Grouse Mitigation Plan to be contained in the final POD for construction. No construction can begin until the BLM has determined that the Greater Sage-Grouse Mitigation Plan complies with federal and state policies for avoiding or minimizing adverse effects on the species and its habitat and the approved plan is consistent with FWS and state agencies recommendations. Species-specific conservation measures (finalized in the BA, dated January 2015) apply to greater sage-grouse priority and general habitat management areas.
- Satisfaction of the requirements set forth in the PA developed in compliance with Section 106 of the NHPA, including posting a financial security (i.e., cultural bond, such as a surety bond, irrevocable letter of credit, etc.) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing the Historic Properties Treatment Plan (HPTP), or other mitigation activities, and to be required by the Applicant in its contracts for services in support of the PA and for reclamation requirements and activities.

Although the BLM does not have authority over state or private land, the Applicant has agreed that provisions of the draft and final PODs will be applied consistently to state and private land as well as federal land, unless otherwise indicated by the state and/or by private landowners. This commitment is consistent with the BLM's obligation to enforce the requirements of the

NHPA and the ESA to protect important historic properties and threatened and endangered species, respectively, regardless of land jurisdiction or ownership. The BLM will retain discretionary federal agency oversight of the Project in case reinitiation of consultation is necessary.

This decision to issue the right-of-way grant(s) does not authorize the Applicant to commence construction of any Project facilities or proceed with other ground-disturbing activities in connection with the Project on BLM-administered public lands. The Applicant may not commence construction of Project facilities or proceed with any ground-disturbing activities related to the Project on BLM-administered public lands until the Applicant, in accordance with 43 CFR 2807.10, receives from the BLM a written final NTP, which could consist of multiple NTPs governing various portions of the projects. These NTPs may require the submission of additional information that must first be reviewed and approved by the BLM's Authorized Officer.

To obtain a NTP (as summarized above and detailed in Appendix B), the Applicant must:

- Demonstrate complete fulfillment of all the required mitigation requirements described in this ROD (including Appendix B).(Where one or more segments of the Project's right-of-way are co-located with another project, the Applicant is nevertheless required to ensure that its final POD addresses all required mitigation requirements described in this ROD before BLM will issue a NTP for construction of the Project. That said, the BLM will consider proposals collaboratively developed by the project applicants for co-located segments that jointly address the mitigation requirements for each independent project. Such joint proposals must be submitted to the BLM and include assurance that all required mitigation for actual disturbance within the co-located right-of-way will be fulfilled in the event that any participating project is not completed. Similarly, to the extent the Applicant wishes to rely on mitigation efforts already underway in a co-located segment, the application must also provide a joint proposal/agreement related to such ongoing efforts);
- Obtain all necessary state, local and tribal approvals and permitting requirements, including a Certificate of Public Convenience and Necessity from the appropriate State Public Service/Utility Commissions; and
- Submit a performance bond for construction and initial reclamation for the right-of-way grant(s) (and USFS special-use authorization) to ensure compliance with all the terms and conditions identified in this ROD, the final POD, and applicable regulations. Acceptable bond instruments include cash, irrevocable letter of credit, cashier's or certified check, certificate or book entry deposits, negotiable U.S. Treasury bonds equal in value to the bond amount, or surety bonds from the approved list of sureties (U.S. Treasury Circular 570 available on-line), made payable to BLM.

The right-of-way grant for a 250-foot-wide right-of-way and all associated long-term Project facilities will be issued for a term of 30 years with a right of renewal. BLM will issue a temporary (i.e., short-term) right-of-way grant for areas to be used only during construction for a period of 5 years. Construction of the Project must commence within 5 years after the effective date of the right-of-way grant. BLM has the discretion to renew a right-of-way grant if doing so is in the public interest. A renewal request will be subject to NEPA review.

The BLM also may issue a NTP for geotechnical investigation (analyzed in the Final EIS) prior to issuing a NTP to construct, operate, and maintain the Project, provided that all necessary survey work associated with the geotechnical investigation is completed, and the reports are

reviewed and approved by the BLM. The holder may, on approval from BLM, assign the right-of-way grant to another party in conformance with 43 CFR 2800.

A decommissioning bond will be required 2 years prior to the expiration of the right-of-way grant, unless a timely request to renew those authorizations has been submitted. The decommissioning bond amount is to be determined with a Reclamation Cost Estimate Report submitted by the Applicant, and the final amount approved by the BLM. All costs of preparing and submitting this report shall be borne by the bond holder. If the right-of-way grant is renewed by the BLM, the bond will be terminated. If the grant is not renewed, the BLM will hold the bond until reclamation acceptable to the BLM Authorized Officer is completed.

Land use Plan Amendments

Based on the analysis in the Final EIS, the BLM will amend portions of the following BLM RMPs to: (1) modify visual resource management (VRM) classifications; (2) widen portions of a utility corridor designated in a land use plan to include the Project right-of-way; and/or (3) establish the Project right-of-way as an utility corridor.

Consistent with NEPA, the BLM has integrated its land use planning process with its evaluation of the proposed Project. With approval of these plan amendments, the Project will conform to the approved RMPs (43 CFR 1610.5-3).

Rawlins Field Office Resource Management Plan (RFO2 in the Final EIS)

The Rawlins RMP currently states the relevant goal, management objectives, and management actions for visual resource management (page 2-48):

> *Goal – Manage public lands according to VRM classes that are determined based on land use allocation decisions made in this RMP.*
>
> *Management Objectives:*
>
> - *Establish VRM Classes for the RMPPA [Resource Management Plan Planning Area].*
> - *Maintain the overall integrity of visual resource classes while allowing for development of existing and future uses.*
>
> *Management Actions*
>
> - *Manage visual resources to meet the Wyoming Standards for Healthy Rangelands.*
> - *VRM classes are designated as shown on Map 2-50 (Table 2-9 and Appendix 25 [of the RMP]).*

The following text is added to amend the second management action (***new text in bold italics***):

WYCO-B

The portion of the 250-foot-wide right-of-way for the Energy Gateway South Transmission Project in VRM Class III lands along Link W302 from Milepost 0.3 to 1.0 (approximately 0.7 mile) is amended to VRM Class IV (a total of 21 acres) for only those

portions of the Project that still exceeds acceptable levels of change that could occur in VRM Class III after application of all feasible measures to reduce impacts on visual resources is exhausted.

Little Snake Field Office Resource Management Plan (LSFO1 in the Final EIS)[1]

The BLM Little Snake RMP currently states the relevant goal and objectives for visual resource management (RMP-34):

Goal - Recognize and manage visual resources for overall multiple use and quality of life for local communities and visitors to public lands.

Objectives for achieving these goals include:

- *Maintain visual characteristics/values as designated by management classes.*
- *Ensure land management projects and uses meet VRM objectives within the boundaries of the designated VRM management class.*

Additionally, management actions list the areas by VRM Class to be managed according to those objectives. The following text is added to amend the list of Class IV locations (***new text in bold italics***):

The portion of the 250-foot-wide right-of-way for the Energy Gateway South Transmission Project in VRM Class III lands along Link C91 from Milepost 3.4 to 4.0 of the Project (approximately 0.6 mile) is amended to VRM Class IV (a total of 18 acres) for only those portions of the Project that still exceeds acceptable levels of change that could occur in VRM Class III after application of all feasible measures to reduce impacts on visual resources is exhausted.

Pony Express Resource Management Plan (Salt Lake Field Office; SLFO1 in the Final EIS)

The utility corridor decisions in the Pony Express RMP ROD (page 56, Figure 10) are amended to include the 1.3 miles of the Project right-of-way as a utility corridor.

Price Field Office Resource Management Plan (PFO5 in the Final EIS)

The right-of-way decision presented in in the Lands and Realty section of the BLM Price approved RMP under LAR-23 (page 122) is amended as follows (***new text in bold italics):***

LAR-23

*All utility corridors within the PFO [Price Field Office] are designated for any size utility and transportation uses needed. The corridors are 1 mile in width crossing any BLM-administered public lands**, with the exception of the utility corridor established along Interstate 70 (I-***

[1]A conformance issue related to the use of a designated underground-only utility corridor arose during the protest period. BLM denied the protest because the BLM's decision on the TransWest Express transmission project amended the Little Snake RMP, which eliminated the inconsistency.

70), which is 1.5 miles in width. *These approved corridors will be the preferred location for future major linear [rights-of-way] that meet the following criteria:*

Pipelines with a diameter greater than 16 inches

Transmission (not distribution) lines with a voltage capacity of 69 kV or greater

Significant conduits requiring a permanent width greater than 50 feet.

Map R-21 in the approved RMP also would be revised to show the amended corridor width along I-70.

Vernal Field Office Resource Management Plan (VFO1, VFO2, VFO3 in Final EIS)

The Vernal RMP currently states the relevant goals and objectives for visual resource management (page 136).

Goals and Objectives:

- *Manage the public lands (see Figure 16a) in such a way to preserve those scenic vistas, which are deemed to be most important.*
- *In their impact on the quality of life for residents and communities in the areas.*
- *In their contribution to the quality of recreational visitor experiences.*
- *In supporting the regional tourism industry and segments of the local economy dependent on public land resources.*
- *Seek to complement the rural, agricultural, historic, and urban landscapes on adjoining private, state, and tribal lands by maintaining the integrity of background vistas on the public lands.*

Specific management decisions are listed by VRM Class including VRM-4, which states "Approximately 786,612 acres will be managed as VRM Class III." The following text is added to amend management decision VRM-4 (***new text in bold italics***):

The portion of the 250-foot-wide right-of-way for the Energy Gateway South Transmission Project in VRM Class II lands (associated with the Lower Green River Corridor Area of Critical Environmental Concern) along Link U400 from Mileposts 7.2 to 7.5 and 7.7 to 9.3 of the Project (approximately 1.9 miles) is amended to VRM Class III (a total of 58 acres) for only those portions of the Project that still exceeds acceptable levels of change that could occur in VRM Class II after application of all feasible measures to reduce impacts on visual resources is exhausted.

Additionally, specific management decisions are listed by VRM Class including VRM-5 which states "Approximately 643,641 acres will be managed as VRM Class IV." The following text is added to amend management decision VRM-5 (***new text in bold italics***):

The portion of the 250-foot-wide right-of-way for the Energy Gateway South Transmission Project in VRM Class III lands along Link U300 from Milepost 8.1 to 8.5 of the Project (approximately 0.4 mile) is amended to VRM Class IV (a total of 12 acres) for only those portions of the Project that still exceeds acceptable levels of change

that could occur in VRM Class III after application of all feasible measures to reduce impacts on visual resources is exhausted.

And:

The portion of the 250-foot-wide right-of-way for the Energy Gateway South Transmission Project in VRM Class III lands along Link U401 from Milepost 2.5 to 3.6 of the Project (approximately 1.1 miles) is amended to VRM Class IV (a total of 33 acres) for only those portions of the Project that still exceeds acceptable levels of change that could occur in VRM Class III after application of all feasible measures to reduce impacts on visual resources is exhausted.

Decision Rationale and Management Considerations

The route combination of Alternatives WYCO-B and COUT-C is identified as the Selected Alternative because this route attains the Applicant's interests and objectives for the Project while protecting sensitive resources within the Project area, and meets the BLM's mission and management objectives and purpose and need for the federal action. A combination of several issues led the BLM to approve the Selected Alternative, including consideration of goals and objectives for the Project area as outlined in the relevant BLM RMPs, and competing interests and values of the public discussed in this section. The right-of-way grant also is based on the rationale described in the following sections.

Response to the BLM Purpose and Need

As described above, approval of the right-of-way grant for the Selected Alternative is consistent with the BLM's purpose and need by responding to the Applicant's application under Title V of FLPMA (43 USC 1701) for a right-of-way grant to construct, operate, and maintain a 500-kV electric transmission line and other facilities on public lands in compliance with FLPMA, BLM right-of-way regulations, and other applicable federal laws. With the adoption of the land use plan amendments listed in this ROD, the Selected Alternative is also consistent with all BLM RMPs where the Project is located.

Meeting the Applicant's Interests and Objectives

As a regulated utility, the Applicant is responsible for providing increased capacity (as required to serve growing loads); providing safe, reliable electricity to its customers at a reasonable cost; addressing constraints in the Applicant's existing transmission system; and providing electricity to the wholesale market when excess electricity exists or when required for other system-balancing alternatives. Through planning studies and analysis, the Applicant determined its existing system, last upgraded more than 25 years ago, is fully used and needs to be upgraded. In 2007, the Applicant committed to expanding its transmission network to ensure sufficient capacity would be available to meet the needs of its existing and new customers. The Project is planned to provide additional power transmission to meet forecasted customer load and growth.

The Applicant developed the Project to comply with its 2015 Integrated Resource Plan that was approved by the public utility commission in order to make improvements to its bulk

transmission network to reliably transport electricity from generation resources (owned generation and market purchases) to various load centers. More specifically, additional transmission infrastructure is needed in the region to:

- Maintain compliance with mandated national reliability standards that require the Applicant to have a plan to "operate to supply projected customer demands and projected Firm Transmission Services, at all demand levels over the range of forecast system demands";[2]
- Meet obligations and requirements specifically required under the Applicant's Federal Energy Regulatory Commission approved Open Access Transmission Tariff
- Ensure customers have an adequate supply of reliable and low-cost energy;
- Reliably deliver power to continuously changing customer energy-supply demands under a wide variety of system operating conditions;
- Supply all electrical demand and energy requirements of customers, taking into account planned and unplanned system outages;
- Allow the Applicant to access energy available from existing markets and to sell excess generation to those existing markets when it is cost-effective for customers;
- Support options for generation resource development, including economically feasible renewable generation as specified in the Applicant's current (2015) and future Integrated Resource Plans; and
- Meet the current and reasonably anticipated 20-year energy-supply requirements, policies, rules, and laws at the federal level and in the states the Applicant serves

A detailed description of the Applicant's interests and objectives for the Project is presented in Appendix A of the Final EIS.

Consideration of the Issues Relevant to BLM's Decision

In approving the Selected Alternative, the BLM carefully considered the effects of each alternative route on climate and air resources; geological, mineral, and paleontological resources; soils; water; vegetation, including special status plant species; wildlife, including special status wildlife species and migratory birds; aquatic resources; cultural resources and Native American concerns; visual resources; recreation; land use, including rangeland resources; special designations; transportation; social and economic resources; public health and safety; wild horses; the National Conservation Lands; and wildland fire. The evaluation of potential impacts to these resources was integral to the identification of the Agency Preferred Alternative in the EIS, and ultimately the identification of the Selected Alternative. This analysis can be found in Chapter 3 of the Final EIS. Environmental documents that were considered in making this decision included the Draft and Final EIS, the BA and the BO, as well as documents specific to National Forest System lands.

The range of issues summarized and analyzed in the Final EIS was derived from the scoping process and public involvement (described in detail in Chapter 6, Section 6.3, of the Final EIS). These issues were used to identify, refine, and evaluate alternative routes, and to direct the level of detail needed for each of the environmental resource studies completed for the EIS. A complete list of the issues identified and where each issue is addressed in the EIS is presented in Table 1-1 of the Final EIS.

[2]North American Electric Reliability Council Transmission Planning Standard TPL-002-1.

From the inclusive list of issues identified in scoping and public involvement, many issues are addressed by design features of the Project or were found not to be substantive through the effects analysis conducted for the Project. However, several planning issues proved to be pivotal to Project development and critical to the decision for the Selected Alternative. These issues include potential impacts on greater sage-grouse habitat and compliance with the BLM management policies and procedures for greater sage-grouse, cultural and historic resources, National Conservation Lands, and other planned activities in the Project area. Considerations related to each of these resources are addressed below.

In addition to helping inform the selection of the preferred Alternative, the BLM's evaluation of resource impacts was used to identify all practicable measures to avoid or minimize environmental harm to resources. This ROD requires the adoption and implementation of these measures as part of the Selected Alternative.

Greater Sage-Grouse

Impacts on greater sage-grouse and loss of sage-grouse habitat were identified as issues by the BLM, cooperating agencies and the public during scoping in 2011. The extent of greater sage-grouse habitat crossed by potential routes and resulting direct and indirect impacts on greater sage-grouse were issues considered during development of alternative routes for the Project.

On September 24, 2015, the BLM announced the availability of the ROD and Approved Resource Management Plan Amendments (ARMPAs) for the Rocky Mountain Region Greater Sage-Grouse Subregions of Lewistown, North Dakota, Northwest Colorado, and Wyoming (80 *Federal Register* 57639) and the Great Basin Region Greater Sage-Grouse Subregions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (80 *Federal Register* 57633).

Compliance with the Approved Resource Management Plan Amendments

The Project would cross greater sage-grouse Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) in Wyoming, Colorado, and Utah. The BLM ARMPAs identify PHMAs as avoidance areas for high-voltage transmission lines, except for specific priority high-voltage transmission projects (i.e. TransWest Express transmission project), including portions of the Energy Gateway South project that are co-located with that specific project (*refer to MD-LR-3 in the BLM ARMPAs for the Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs Field Offices; MD-LR-4 in the BLM ARMPAs for Northwest Colorado; and MA-LR-2 in the BLM ARMPA for Utah.)*. The ARMPAs also identified that the NEPA process for the Project has been underway for several years, and impacts on sage-grouse were assessed in the EIS. Project-specific conservation measures and the mitigation plan framework (Appendix K of the Final EIS) were developed for the Project through the Project NEPA process and are identified in the Final EIS.

While the conservation measures in the ARMPAs do not apply to the Project where co-located with high priority transmission in Wyoming and Colorado, the Applicant has made commitments to comply with seasonal restrictions in the ARMPAs, complete the Habitat Equivalency Analysis (HEA), and develop a comprehensive Greater Sage-Grouse Mitigation Plan (based on the components outlined in the Sage-Grouse Mitigation Framework Plan and HEA, included in Appendix K of the Final EIS), which will identify appropriate levels of compensatory mitigation to

demonstrate a net conservation gain. The HEA quantifies the permanent or interim loss of habitat services resulting from Project-related impacts and potential habitat service gains that can be achieved by Project-related mitigation programs. The complete Greater Sage-Grouse Mitigation Plan will be developed, reviewed, and approved by the BLM and the cooperating agencies when the final design and engineering of any Selected Alternative have been completed. In addition, the BLM and cooperating agencies developed Project-specific conservation measures through the NEPA process, which included siting to avoid, to the extent feasible, locally important habitats. The development of a Greater Sage-Grouse Mitigation Plan and other mitigation requirements for greater sage-grouse are addressed in Appendix B of this ROD, Mitigation and Monitoring Requirements.

Wyoming and Colorado

The Project would cross greater sage-grouse PHMA and GHMA in Wyoming and Colorado. In Wyoming, the Project is within the Wyoming Governor's Executive Order (2015-4, Greater Sage-Grouse Core Area Protection) transmission corridor. In both states, the Project is co-located with the TransWest Express priority transmission project.

Where the Project is co-located with the TransWest Express transmission project through Wyoming and Colorado, the ARMPAs for Wyoming and Northwest Colorado identified that the NEPA process for the Project has been underway for several years and impacts on sage-grouse were assessed in the EIS and that Project-specific conservation measures and the mitigation frameworks were developed for the Project as part of the NEPA process. As a result, the specific measures identified in ARMPA do not apply where it is co-located with TransWest Express transmission project as outlined above.

Utah

In Utah, the Project crosses PHMA and GHMA and is not co-located with high priority transmission projects. In Utah, the mitigation measures in the BLM ARMPA for Utah apply, specifically MA- SSS-3 and MA-SSS-5. These include, but are not limited to, colocation with existing infrastructure; tall structure, noise, and seasonal restrictions; disturbance caps; lek buffers; required design features; and mitigation that results in a net conservation gain.

Project Compliance

Compliance of the Selected Alternative with the ARMPAs would be achieved because (1) the Project is co-located with lower-voltage transmission lines and other linear rights-of-way, (2) the disturbance cap analysis indicates that the 3 percent disturbance cap required by the BLM ARMPA for Utah would not be exceeded in PHMA, (3) the alternative route does not cross within 2 miles of leks through PHMAs, (4) the Applicant has committed to complying with noise and seasonal restrictions in PHMA, and (5) the Applicant has committed to completing a Greater Sage-Grouse Mitigation Plan that demonstrates a net conservation gain.

A NTP will be required, documenting approval of the completed mitigation plan, including compensatory mitigation obligations, prior to commencement any surface-disturbing activity associated with construction of the transmission line.

Cultural and Historic Resources

Consistent with the approved PA for the EGS Project (Appendix D1 of the POD), Class III cultural resources inventory surveys (intensive pedestrian surveys) will be conducted for the entire transmission-line route, associated access roads, and any other ancillary facilities or additional work space, as required. The results will be documented in four Class III Technical Reports, one for each state and one for tribal lands.

All cultural resources identified in the survey will be evaluated for eligibility for listing on the National Register of Historic Places (NRHP) based on criteria set forth in the federal regulation 36 CFR 60.4. The final Class III technical reports will facilitate the BLM, in consultation with the SHPOs and the Ute Tribe (on tribal lands), to identify NRHP-eligible properties and make determinations of eligibility and findings of effect on those properties, and to develop HPTPs. The HPTPs will address the effects of the Project on identified historic properties. Eligible cultural resource sites will be treated in accordance with the direction in the HPTPs. The HPTPs will be implemented in consultation with the BLM, SHPOs, the Ute Tribe, other involved agencies, and consulting parties (including other tribes).

National Conservation Lands

Lower Green River Suitable Wild and Scenic River

The Selected Alternative crosses the Lower Green River Suitable Wild and Scenic River segment, tentatively classified as scenic, for 0.8 mile within the 1-mile-wide utility corridor designated in the Vernal RMP. The Project will not alter the river's free-flowing condition or directly affect the river's outstandingly remarkable values (recreational opportunities and fish habitat). The Project will affect the view and experience of recreational users traveling on the river but will not hinder opportunities for fishing, hunting, waterfowl viewing, floating, and camping. Placement of Project components across the Lower Green River segment will be micro-sited prior to construction in coordination with the BLM, to minimize surface or visual disturbances from the towers or other facilities. This mitigation requirement is included in NTP requirements (Appendix B of this ROD).

Continental Divide National Scenic Trail

The Selected Alternative crosses the Continental Divide National Scenic Trail (NST), administered by the USFS, on BLM-administered lands in the Rawlins Field Office. The Project will cross the trail perpendicularly and will dominate views for 1 mile, in particular where skylined structures will be located on Coal Mine Ridge and Atlantic Rim (refer to Section 3.2.19.5.4 of the Final EIS).

The crossing of the Continental Divide NST occurs in proximity to the permitted alignment for the Energy Gateway West Project along a portion of the NST relocated as mitigation for the Chokecherry-Sierra Madre Wind Farm Project. Avoidance and minimization measures to mitigate impacts on the Continental Divide NST will be applied for the life of the impacts from the Project. For residual (i.e., unavoidable) effects on the values and settings of the Continental Divide NST, which would remain after applying avoidance and minimization measures, compensatory mitigation will be required, of a degree that is commensurate with the impacts. Compensatory mitigation may include projects, such as land acquisitions or perpetual easements to secure portions of the trail, or improvements to existing trail segments, along the

impacted portion of the Continental Divide NST. As described in Section 2.4 of the Final EIS, the POD will further refine the application of mitigation for the development and implementation of the Project based on final design of the Project, including off-site mitigation measures (in addition to selective mitigation measures), as appropriate. These mitigation requirements are included in NTP requirements (Appendix B of this ROD).

Lands with Wilderness Characteristics

The Selected Alternative crosses units of lands with wilderness characteristics that have not been inventoried, for which inventories have been completed but no public planning process has been conducted. In Utah, three of these units—Currant Canyon, Bad Lands Cliffs, and Desolation Canyon Addition—are part of a citizen's wilderness proposal for which the BLM has completed two of the evaluations with the third evaluation currently being processed but not complete.

The preliminary review of all, but the Currant Canyon area, indicated these lands include areas with active oil and gas leasing and development. In other units, located in the Little Snake Field Office, the Project is co-located with the TransWest Express transmission project.

The analysis in the Final EIS discloses the effects on these units as well as the mitigation to be implemented to reduce the Project's impacts on the units' wilderness values. The BLM will require compensatory mitigation to offset these impacts where the other mitigation measures would not effectively address impacts on those values. To offset these impacts, the BLM requires that the Applicant perform, or provide funding to perform, preservation and/or restoration actions to improve the same amount of acres of wilderness characteristics as outlined in Appendix B of this ROD, Mitigation and Monitoring Requirements.

Other Planned Activities

The land use plan amendments for the TransWest Express transmission project have been developed concurrently with this Project, through public scoping and release of the Draft and Final EISs. This Project and the TransWest Express transmission project follow similar alignments from an area south of Rawlins, Wyoming to Dinosaur, Colorado where the Selected Alternatives for the two projects diverge. The TransWest Express Project continues to roughly parallel U.S. Highway 40 across the Uinta Basin whereas this Project turns to the southwest toward Bonanza and then to the west, crossing the Green River and Argyle Ridge, before paralleling existing transmission lines into Spanish Fork Canyon where the two projects share a common alignment to Nephi, Utah.

Consideration of Public Comments and Concerns

The BLM prepared a public involvement plan as part of the EIS process. The purpose of the plan is to serve as a guide for conducting public engagement activities during the NEPA process.

The first opportunity for the public to be involved in the Project was scoping. The purpose of scoping was to identify early in the NEPA process the range, or scope, of issues that should be addressed in the EIS. A Notice of Intent (NOI) was published in the *Federal Register* on April 1, 2011, announcing preparation of the EIS and possible plan amendments as well as the

opportunity for the public to participate in the process and provide input. Publication of the NOI on April 1, 2011, initiated the formal 90-day scoping period, which ended on June 30, 2011. During this period (May and early June 2011), 12 open-house meetings were held in locations along the alternative routes, to inform the public about the Project and the NEPA process, and to solicit input on the Project and potential issues.

Due to the extent of privately owned lands potentially crossed by the Project, the public involvement process was critical in informing the BLM decision to permit the Project as decisions made on BLM-administered lands affect adjacent private land owners as well as other land-managing agencies (e.g., USFS, state lands, etc.)

The BLM published a NOA of the Draft EIS for public review and comment in the *Federal Register* on February 21, 2014. The U.S. Environmental Protection Agency published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on the same day, which initiated a 90-day public comment period. During the comment period, 603 comment submittals on the Draft EIS were received from various federal, state, and local agencies; various special interest groups; and individuals. The comments received and responses to the substantive comments are provided in Appendix P of the Final EIS.

Based on agency and public comments received, the BLM expanded the analysis of the Draft EIS when it prepared the Final EIS. The Final EIS assessed impacts on all lands, including private lands, to determine effects on resources and respond to issues identified during public scoping. Also in response to agency and public comments and additional information received since the Draft EIS was published, the following additional routes were analyzed in the Final EIS:

- Co-location of the reference centerline for the transmission line closer to existing and/or proposed transmission lines;
- Route variation in the area of the Deerlodge Road entrance to Dinosaur National Monument;
- Route variation in the Colorado-Utah border area;
- Route variation in the Uinta Basin;
- Route variation in the Argyle Canyon area (including Camp Timberlane, Argyle Canyon, and Argyle Ridge); and
- Route Variation in Spanish Fork Canyon.

These additional alternative routes and/or route variations are described in Appendix G of the Final EIS.

Statement of No Unnecessary or Undue Degradation

Congress declared that is it the policy of the United States that the public lands be managed for multiple use and sustained yield, in a manner to protect certain land values, to provide food and habitat for species, and to provide for outdoor recreation and human occupancy and use (43 USC 1701(a)(7)(8)). Multiple use management means that public land resources are to be managed to best meet the present and future needs of the American public, balanced to take into consideration the long-term needs of future generations without permanent impairment of the lands (43 USC 1702(c)). BLM manages public land through land use planning, acquisition, and disposition, and through regulation of use, occupancy, and development of the public lands (Subchapters II and III, respectively, 43 USC 1711 to 1722, and 1731 to 1748).

FLPMA specifically provides 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" (43 USC 1732(b)). The process for siting and evaluating the Project has involved extensive efforts on the part of BLM and cooperating agencies, local governments, public commenters, and other organizations. This process identified a Selected Alternative that accomplishes the BLM's purpose and need while preventing any unnecessary or undue degradation of the lands. This process included:

- The siting of the Project in or adjacent to designated corridors or existing linear facilities, and avoiding lands that have been specifically designated for the protection of specific resources.
- The evaluation of alternative routes which could meet the BLM's purpose and need for the Project while avoiding and minimizing the overall impacts of the Project.
- The development of mitigation measures, including compensation requirements, to further avoid, minimize, or compensate for those impacts.

In addition, BLM's right-of-way regulations at 43 CFR 2805.11(a)(1) to (5) require that BLM limit the grant to those lands the BLM determines:

- The applicant for the right-of-way will occupy with authorized facilities;
- Are necessary for constructing, operating, and maintaining the authorized facilities;
- Are necessary to protect the public health and safety;
- Will not unnecessarily damage the environment; and
- Will not result in unnecessary or undue degradation.

Statement of Technical and Financial Capability

The BLM's right-of-way regulations require a project application to include information on an applicant's financial and technical capability to construct, operate, maintain, and terminate the project (43 CFR 2804.12(a)(5)).

The Applicant, PacifiCorp, is a federally regulated utility serving more than 1.8 million customers across 136,000 square miles in six western states. This Project is part of PacifiCorp's large-scale transmission expansion program named the "Energy Gateway Transmission Expansion Program", and is an extension of the Applicant's long and successful history of developing and maintaining transmission infrastructure. The Applicant's commitment to developing the Project is demonstrated by the substantial investment of capital and time already made to date.

The Applicant's statement of technical and financial capability is provided in its right-of-way application for the Project. Based on the information provided, the BLM has determined that the Applicant has the technical and financial capability to construct the Project.

Consideration of Applicable Laws, Regulations, and Policies

The BLM has met all federal obligations requiring specific actions or reviews as part of its approval of the Selected Alternative, as described in the Relationship to Other Plans, Policies, and Programs section in this ROD.

Connected Actions

The BLM has determined that the Project is independent of, and will be built regardless of, any specific proposed generation or other transmission projects. The primary purposes of the Project are to (1) enable the Applicant to meet its legal obligation to ensure sufficient firm point-to-point and network transmission capacity is available to meet the electric demands of all its customers now and into the future; (2) provide transmission service to its third-party network customers; (3) ensure reliable electrical service to all its customers; (4) provide the Applicant with access to rich and diverse generation resources throughout its service territory; and (5) maximize infrastructure benefits.

For these responsibilities to be met, a backbone of high-capacity transmission lines is needed to transport the electricity from where it is or can be generated to where it is needed. Third-party electricity generators may arrange transmission contracts on existing transmission lines, this Project, or other proposed high-voltage transmission lines. Therefore, there is no interdependence between this Project and proposed generation or high-voltage transmission lines. However, these other proposed projects would contribute to cumulative impacts on resources affected by the Project. Accordingly, their effects were disclosed in the cumulative analysis section of the Final EIS.

Mitigation and Monitoring

Rules implementing NEPA expressly require that an EIS identify and address appropriate mitigation measures in its discussion of environmental consequences and that the associated ROD state whether all practicable means to avoid or minimize environmental harm from the selected alternative have been adopted, and if not, why not. Consistent with those requirements, mitigation and monitoring measures were identified by the Applicant in the draft POD. Also, mitigation and monitoring measures were developed through the NEPA process to avoid, minimize, rectify over time, or compensate for resource impacts.

This Project includes the following measures, terms, and conditions:

- Design features of the Proposed Action for environmental protection and agency-required mitigation measures outlined in Chapter 2 (Table 2-8 and 2-13, respectively) and Section 4 of the draft POD (Appendix D of this ROD);
- Terms and conditions in the PA (Appendix E of this ROD)
- Conservation measures in the BO (Appendix F of the ROD)
- Additional mitigation and monitoring measures related to greater sage-grouse found in Appendix B of this ROD; and
- Standard terms, conditions, and stipulations (43 CFR part 2800).

The final agency-approved POD for construction will be required to incorporate all of the mitigation measures required by this ROD, including those identified in the draft POD. Demonstrating compliance with these mitigation and monitoring requirements (Appendix B of this ROD) is a pre-requisite to NTP issuance for construction of the Project. Monitoring plans developed as part of the final POD must include an adaptive management element. Additionally, the BLM will require the Applicant to post a financial security (such as a surety bond, letter of credit, etc.) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing the HPTP (i.e., Cultural Bond), or other mitigation activities, to be required by

the Applicant when they contract for services in support of the EGS Project's PA for reclamation requirements and activities.

In support of these measures, the BLM requires the Applicant to provide for an environmental compliance inspection contractor (CIC), to represent the BLM during the construction, and reclamation phases of the Project. The CIC will report directly to the BLM. The primary role and responsibility of the CIC is to ensure the Applicant's compliance with all terms, conditions, and stipulations of the right-of-way grant(s), the final POD, and other permits, approvals and regulatory requirements, as described in Section 1.9 of the Final EIS and Section 1.6 of the draft POD (refer to Appendix D of this ROD). Additionally, the CIC will follow the Environmental Compliance Management Plan, included as Appendix A5 of the POD.

The Applicant will also be responsible for monitoring the reclamation of the transmission line, access roads not needed for operation and maintenance, and ancillary facilities, as described in Appendix C1 (Reclamation, Revegetation, and Monitoring Framework Plan), and for compliance with Appendix B2 (Noxious Weed Management Plan) of the POD.

Based on the foregoing and consistent with 40 CFR 1505.2(c), the BLM has determined based on the analysis in this ROD that all practicable mitigation measures that are necessary to fully mitigate the potential effects of the Project according to federal laws, rules, policies, and regulations have been adopted by this ROD.

Alternatives

Alternatives Considered in Detail

Twelve alternative routes (and 12 route variations) were analyzed in the Final EIS, including the Agency Preferred Alternative (the Selected Alternative) on federal lands and the Applicant's Preferred Alternative, as well as the alternative of taking no action. The alternative routes were organized into three segments: (1) Wyoming to Colorado – Aeolus to U.S. Highway 40, (2) Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover, and (3) Colorado to Utah – U.S. Highway 40 to Central Utah to Clover. Maps presenting the alternative routes are presented in Chapter 2, Maps 2-3a and 2-3b, and Volume II of the Final EIS.

Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO)

Alternative WYCO-B (Agency and Applicant Preferred Alternative)

Alternative WYCO-B exits the permitted Aeolus Substation in the utility corridor designated by Wyoming Executive Order 2014-5 for the protection of sage-grouse, continuing to the southwest where it crosses Interstate 80 (I-80) approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles at which point it parallels Wamsutter Road (on the east side of the road) south for approximately 15 miles. At that point, the alternative route continues southwest crossing Flat Top Mountain, continuing toward the Wyoming and Colorado border, approximately 22 miles west of Baggs, Wyoming.

The alternative route continues south/southwest into Colorado through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado

State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest for approximately 22 miles paralleling the existing Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines to a point south of U.S. Highway 40, approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

Additional local route variations along the route of Alternative WYCO-B are presented in Appendix F of the Final EIS.

Alternative WYCO-C

Alternative WYCO-C exits the permitted Aeolus Substation to the southwest and crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 63 miles before veering to the south to parallel an underground pipeline corridor south for approximately 46 miles toward the Wyoming and Colorado border. The underground pipeline corridor that this alternative route parallels is approximately 10 miles east of the Adobe Town Wilderness Study Area (WSA).

The alternative route continues south/southwest through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest paralleling the Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines south of U.S. Highway 40 for approximately 22 miles to approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

Alternative WYCO-D

Alternative WYCO-D exits the planned Aeolus Substation to the south/southwest paralleling the Difficulty to Miners 230kV transmission line, crossing U.S. Highway 30 twice near Hanna, Wyoming, continuing toward I-80. It crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route then continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 48 miles at which point it parallels Wyoming Highway 789 (on the east side of the highway) south toward Baggs, Wyoming, for approximately 40 miles. It crosses the Wyoming and Colorado border approximately 7 miles southwest of Baggs.

The alternative route turns east toward Colorado State Highway 13 where it continues south toward Craig, Colorado, paralleling the east side of the highway for approximately 27 miles. The

alternative route turns west where it parallels the Hayden to Artesia 138kV transmission line toward the Craig Power Plant. From the plant, it continues west paralleling the Hayden to Artesia 138kV and the Bears Ears to Bonanza 345kV transmission lines along U.S. Highway 40 for approximately 60 miles to a point approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

Alternative WYCO-F

Alternative WYCO-F exits the permitted Aeolus Substation to the southwest and crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles. The alternative route then parallels Wamsutter Road (on the east side of the road) south for approximately 20 miles. The alternative route continues south, approximately 3 miles to the west of Wyoming Highway 789. North of Baggs, Wyoming, the alternative route turns west (south of Flat Top Mountain) for approximately 15 miles, then southwest to cross the Wyoming - and Colorado border, approximately 20 miles west of Baggs.

The alternative route continues south/southwest through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge, and then U.S. Highway 40 at a point approximately 12 miles southwest of Maybell. The alternative route continues southwest for approximately 22 miles paralleling the existing Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines to a point south of U.S. Highway 40, approximately 20 miles east of Dinosaur, Colorado.

From U.S. Highway 40, the alternative route could be combined with either the Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX) alternative routes or the Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT) alternative routes to reach the Clover Substation terminus of the Project.

Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover (COUT BAX)

Alternative COUT BAX-B

Alternative COUT BAX-B begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route heads southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the existing transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado/Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area and continues south toward I-70. It crosses the Colorado/Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River,

Utah, and parallels the Huntington to Pinto 345kV transmission line for approximately 50 miles as it crosses the Green River continuing northwest through the San Rafael Swell area. At that point, the alternative route continues west toward Castle Dale, Utah, where it parallels the Huntington to Emery 345kV and the Spanish Fork to Emery 345kV transmission lines north toward the Huntington Power Plant. It then parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT BAX-C

Alternative COUT BAX-C begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route moves southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the Rangely to Meeker 138kV transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado and Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area continuing south toward I-70. It crosses the Colorado/Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River, Utah, and parallels the Huntington to Pinto 345kV transmission line as it crosses the Green River and I-70 where it continues north paralleling U.S. Highway 6 and the Mounds Southwest Park to Moab 138kV transmission line for approximately 12 miles. It then continues west through the San Rafael Swell area along the Green River Cutoff Road (County Road 401), then roughly parallels the Hunter to Pinto 345kV transmission line. It then continues west toward Castle Dale, Utah, where it parallels the Huntington to Emery 345kV and the Spanish Fork to Emery 345kV transmission lines north toward the Huntington Power Plant. It then parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah, where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT BAX-E

Alternative COUT BAX-E begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this starting point, the alternative route heads southwest toward the Rangely to Meeker 138kV transmission line. The alternative route then parallels the Rangely to Meeker 138kV transmission line on the east and south as it crosses Colorado State Highway 139. The alternative route continues southwest toward the Colorado and Utah border where it parallels a pipeline corridor for approximately 40 miles through the Baxter Pass area, continuing south toward I-70, and crossing the Colorado and Utah border approximately 1 mile north of I-70.

The alternative route heads west into Utah, paralleling the north side of I-70 toward Green River, Utah, for approximately 60 miles. It then crosses to the south side of I-70 near Green River, Utah, and parallels the Huntington to Pinto 345kV transmission line as it crosses the Green River and I-70, where it continues north paralleling the Mounds Southwest Park to Moab 138kV transmission line and on the east side of U.S. Highway 6 for approximately 33 miles to a point approximately 14 miles southeast of Wellington, Utah. The alternative route continues west toward the Spanish Fork to Huntington 345kV and the Spanish Fork to Emery 345kV

transmission lines then parallels these two lines north for approximately 10 miles before continuing west following a pipeline corridor over the Wasatch Plateau where it crosses the Energy Loop Scenic Byway as it continues toward Fairview, Utah, north of Cottonwood Canyon continuing west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah and the Clover Substation.

Colorado to Utah – U.S. Highway 40 to Central Utah to Clover (COUT)

Alternative COUT-A

Alternative COUT-A begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels, on the south side, the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative route parallels the existing Bonanza to Mona 345kV transmission line west in the Uinta Basin, south of Roosevelt, Utah and north of Duchesne, Utah, continuing through the Fruitland, Utah, area. From there it continues southwest through the Uinta National Forest south of Strawberry Reservoir (avoiding the Chipman Creek Inventoried Roadless Area) and crosses U.S. Highway 6 near the Sheep Creek Road intersection. Upon crossing U.S. Highway 6, the alternative route continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, where it turns south and crosses U.S. Highway 89 near Birdseye, Utah, then continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route continues paralleling the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

An additional local route variation along the route of Alternative COUT-A is presented in Appendix F of the Final EIS.

Alternative COUT-B

Alternative COUT-B begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative route parallels the existing Bears Ears to Bonanza 345kV line west for approximately 45 miles to a point near Myton, Utah. It then continues southwest paralleling the Carbon to Ashley 138kV transmission line for approximately 45 miles to a point 10 miles northeast of Helper, Utah. It then continues west through the Emma Park area toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. From there it parallels the Bonanza to Mona 345kV transmission line toward Thistle, Utah, where it turns south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT-C (Agency and Applicant Preferred Alternative)

Alternative COUT-C begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado/Utah border.

This alternative route continues to follow the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest roughly following an underground pipeline in an administratively designated utility corridor and crossing the Green River (and a suitable Lower Green River Wild and Scenic River segment, tentatively designated as scenic, and Lower Green River Corridor Area of Critical Environmental Concern) approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the Emma Park area. It continues west toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. It continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, turning south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Additional local route variations along the route of Alternative COUT-C are presented in Appendix F of the Final EIS.

Alternative COUT-H

Alternative COUT-H begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

This alternative route continues following the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative then continues west/southwest following an underground pipeline and crossing the Green River approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the Emma Park area. It continues west following a pipeline corridor over the Wasatch Plateau where it crosses the Energy Loop Scenic Byway as it continues toward Fairview, Utah, north of Cottonwood Canyon continuing west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Alternative COUT-I

Alternative COUT-I begins at a point northeast of Rangely, Colorado, where the Wyoming to Colorado – Aeolus to U.S. Highway 40 (WYCO) alternative routes terminate. From this point, the alternative route parallels the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado and Utah border.

The alternative continues following the Bears Ears to Bonanza 354kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest following an underground pipeline and crossing the Green River approximately 8 miles north of Sand Wash boat launch, continuing through the Tavaputs Plateau toward the

Emma Park area. It continues south/southwest toward Huntington, Utah, where it parallels the Huntington to Mona 345kV transmission line through the Wasatch Plateau northwest toward Mount Pleasant, Utah, continuing toward Fountain Green, Utah where it continues west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

No Action Alternative

If no action were taken, the BLM right-of-way for the Project to cross BLM-administered lands would not be granted and the transmission line and ancillary facilities would not be constructed and the BLM would not amend portions of its RMPs.

Alternatives Considered But Not Studied in Detail

In the preparation of the Draft EIS, an initial evaluation was made of a full range of alternatives. All reasonable alternatives were given further consideration, including alternatives to the transmission line option, new generation facilities, reliance on the existing transmission system, and alternative transmission technologies. Alternatives that were (1) ineffective (i.e., did not meet the BLM's purpose and need), (2) technically or economically infeasible, (3) inconsistent with the basic policy objectives for management of the area (e.g., resource management plans), (4) remote or speculative (i.e., could not be analyzed), or (5) substantially similar in design or effects to another alternative being analyzed were eliminated from further consideration.

Transmission Line Routes Considered and Eliminated

Transmission line alternative routes and segments considered early in the NEPA process and eliminated from detailed analysis based on the systematic analysis for preliminary impact analysis and screening and comparing alternatives (described in Section 2.6.2 of the Final EIS) are presented on Maps 2-4a and 2-4b of the Final EIS. These alternative routes and segments had greater overall impacts than other routes and segments in the same general vicinity.

Alternatives to a Transmission Line Option

Alternatives to constructing new transmission lines and substations, which would reduce the electrical load requirements of the system or provide additional capacity to the system, were considered but did not meet the purpose and need for the Project (refer to Section 2.6 of the Final EIS).

Agency Preferred Alternative

The Agency Preferred Alternative on federal lands is the route the BLM, in coordination with the cooperating agencies, believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. Department of Interior regulations at 43 CFR 46.20(d) allow the responsible official to render a decision on a proposed action as long as it is within the range of alternatives discussed in the relevant environmental document. The decision of the responsible official(s) may combine alternatives discussed, in the

relevant environmental document, if the effects of the combined elements of alternatives are reasonably apparent from the analysis.

The Agency Preferred Alternative was identified by the BLM in coordination with the USFS and other cooperating agencies using criteria-based on key resource concerns and issues, regulation and policy, and Council on Environmental Quality regulations for determining significance. The criteria used include the following:

- Maximizes use of existing designated utility corridors by locating within the corridors or paralleling existing linear utility rights-of-way.
- Avoids or minimizes impacts on resources that are regulated by law, after consideration of Project design features and agency best management practices. This includes impacts on greater sage-grouse.
- Avoids or minimizes impacts on resources that demonstrate potentially unavoidable adverse impacts after consideration of Project design features for environmental protection and selective mitigation measures, even though those resources may not be regulated by law.
- Minimizes the need for plan amendments through conformance to land use plans.
- Avoids or minimizes proximity to private residences and residential areas, thereby addressing concerns with public health and safety, aesthetics, visual effects, and others.
- Minimizes use of private lands, assuming natural resource impacts are more or less similar.

If multiple alternatives meet the preceding criteria, the Agency Preferred Alternative would be the alternative that minimizes technical constraints; construction, operation, and maintenance expense; and/or time.

The Agency Preferred Alternative for this Project is the combination of Alternative WYCO-B and Alternative COUT C.

Alternative WYCO-B exits the Aeolus Substation in the utility corridor designated by the Wyoming Executive Order 2015-4 for protection of greater sage-grouse, continuing to the southwest where it crosses I-80 approximately 10 miles east of Sinclair, Wyoming. The alternative route continues west on the southern side of I-80 (approximately 3 to 5 miles south) for approximately 57 miles. The alternative route then parallels Wamsutter Road (on the east side of the road) south for approximately 15 miles. At that point, the alternative route continues southwest crossing Flat Top Mountain and continues toward the Wyoming and Colorado border, approximately 22 miles west of Baggs, Wyoming.

The alternative route continues south/southwest into Colorado through the Sevenmile Ridge area where it crosses the Little Snake River, the western edge of the Godiva Rim, and Colorado State Highway 318 in an area approximately 10 miles northwest of Maybell, Colorado. The alternative route continues south crossing the Yampa River 5 miles northeast of Cross Mountain Gorge to a point near U.S. Highway 40 approximately 12 miles southwest of Maybell. At that point, the alternative route parallels U.S. Highway 40 for approximately 3 miles before continuing west to avoid crossing the Tuttle Ranch Conservation Easement and to minimize crossing of the Cross Mountain Conservation Easement. The alternative route crosses a state of Colorado parcel before continuing southwest to parallel the Bonanza to Bears Ears 345kV and the Hayden to Artesia 138kV transmission lines for approximately 22 miles south of U.S. Highway 40. The route terminates at a point approximately 20 miles east of Dinosaur, Colorado, and crosses 1.8 miles of the Cross Mountain Ranch Conservation Easement.

From this point, the alternative route continue to parallel the Bears Ears to Bonanza 345kV and the Hayden to Artesia 138kV transmission lines to the west toward the Colorado/Utah border. This alternative route continues to follow the Bears Ears to Bonanza 345kV transmission line southwest toward the Bonanza Power Plant. The alternative route then continues west/southwest following an underground pipeline through an area where the Uinta Basin hookless cactus and clay reed-mustard occurs (federally listed plant species) and crossing the Green River and a suitable Lower Green River Wild and Scenic segment and Lower Green River ACEC in an administratively designated utility corridor approximately 8 miles north of Sand Wash boat launch, continuing west towards the western end of the Tavaputs Plateau. In the plateau, it traverses through Argyle Ridge for approximately 12 miles dropping southwest toward U.S. Highway 191, following the highway through Indian Canyon for approximately 2 miles; it then crosses the highway heading west/northwest into the Emma Park area (approximately 11 miles north of Helper, Utah) toward Soldier Summit for a distance of approximately 21 miles avoiding greater sage-grouse leks/habitat to the south and the Reservation Ridge Scenic Backway (designated by the Forest Service) to the north.

It continues west toward U.S. Highway 6 and parallels the Spanish Fork to Carbon 138kV transmission line northwest for approximately 25 miles. It continues paralleling the Bonanza to Mona 345kV transmission line toward Thistle, Utah, turning south and crosses U.S. Highway 89 near Birdseye, Utah, continuing south/southwest to a point approximately 5 miles north of Fountain Green, Utah. The alternative route continues to parallel the Bonanza to Mona 345kV transmission line west through Salt Creek Canyon, south of Mount Nebo, toward Nephi, Utah, and the Clover Substation.

Environmentally Preferable Action Alternative

The Council on Environmental Quality regulations require the ROD to identify one or more environmentally preferable alternative(s). An environmentally preferred alternative is an alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources. Because it would cause the least damage to the biological and physical environment, the BLM has determined that the No Action Alternative is the environmentally preferable alternative.

However, the No Action Alternative would not allow development of a Project that would meet the Applicant's interests and objectives for the Project or the BLM's purpose and need, including policies aimed at increasing reliability of the national grid. For the reasons detailed in this ROD, the BLM has not selected the No Action Alternative.

Identification of the environmentally preferable alternative among the action alternatives involves some difficult judgments regarding tradeoffs between different natural and cultural impacts and values. With consideration of these tradeoffs, the BLM has determined that the Selected Alternative is the environmentally preferable action alternative. The rationale for this decision includes the following:

- The Selected Alternative avoids or minimizes impacts to physical, biological, and cultural resource that are regulated by law (ESA, Clean Water Act, NHPA, Archaeological Resources Protection Act, etc.);
- The Selected Alternative minimizes impacts to sage-grouse habitat;
- The Selected Alternative minimizes impacts on big game crucial winter range;

- The Selected Alternative minimizes potential habitat for threatened and endangered plant species, including Uintah Basin hookless cactus;
- The Selected Alternative minimizes impacts to modeled potentially suitable clay phacelia habitat; and
- The Selected Alternative minimizes impacts on the Continental Divide National Scenic Trail.

Relationship with Other Plans, Policies, and Programs

Land Use Plan Compliance

BLM lands are administered with direction from land use plans that establish the goals and objectives for the management of the resources that would be affected by the Proposed Action. The Project area includes lands administered by ten BLM field offices (Wyoming – Rawlins; Colorado – Grand Junction, Little Snake, and White River; and Utah – Fillmore, Moab, Price, Richfield, Salt Lake, and Vernal). The relevant approved management plans include the following:

- Record of Decision and Approved Rawlins Resource Management Plan (BLM 2008b) – Rawlins Field Office
- Grand Junction Field Office Record of Decision and Approved Resource Management Plan (BLM 2015a) – Grand Junction Field Office
- Little Snake Record of Decision and Approved Resource Management Plan (BLM 2011b) – Little Snake Field Office
- White River Record of Decision and Approved Resource Management Plan (BLM 2015b) – White River Field Office
- Moab Field Office Record of Decision and Approved Resource Management Plan (BLM 2008c) – Moab Field Office
- Price Field Office Record of Decision and Approved Resource Management Plan (BLM 2008d) – Price Field Office
- Richfield District House Range Resource Management Plan and Record of Decision Rangeland Program Summary (BLM 1987) – Fillmore Field Office
- Richfield Field Office, Record of Decision and Approved Resource Management Plan (BLM 2008e) – Richfield Field Office
- Salt Lake District, Record of Decision for the Pony Express Resource Management Plan and Rangeland Program Summary for Utah County (BLM 1990) – Salt Lake City Field Office
- Vernal Field Office Record of Decision and Approved Resource Management Plan (BLM 2008f) – Vernal Field Office

The BLM has determined that the right-of-way would not conform to certain aspects of some relevant land use plans and that plan amendments are required. This ROD includes a decision to amend portions of the BLM RMPs to be consistent with the right-of-way (refer to the Decision section of this ROD).

State, County and Local Plans

State, county, and local plans were considered during the development of the Draft and Final EISs. Applicable plans are listed and referenced in Section 1.8 in the Final EIS. No comments were provided by the Governors of Wyoming, Colorado, and Utah during the 60-day Governors' consistency review. Although there was no comment period provided for on the Final EIS, the BLM nevertheless received ten comment submittals (i.e., letters or emails) during the 30-day review period for the Final EIS. These comments are summarized in Appendix A of this ROD and were addressed to the extent practicable.

Other Laws

Endangered Species Act

Under the provisions of Section 7(a)(2) of the ESA, a federal agency that carries out, permits, licenses, funds, or otherwise authorizes an activity must consult with the FWS as appropriate to ensure the action is not likely to jeopardize the continued existence of any species listed under the ESA or result in the destruction or adverse modification of designated critical habitat. Consultation activities to meet the Section 7 requirements are detailed in the Consultation section of this ROD.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (MBTA) (16 USC 703-712) states it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; or possess any migratory bird, part, nest, egg or product, manufactured or not. The MBTA provides a framework for state-managed hunting of some species and authorizes the issuance of permits for take of other birds under limited conditions such as for falconry, research, conservation, and to prevent crop predations.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs federal agencies to take certain actions to further implement the MBTA. The federal agencies are directed to develop and implement an MOU with the FWS to promote conservation of migratory bird populations. As such, *BLM Memorandum of Understanding WO-230-2010-04 Between the Bureau of Land Management and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds* outlines a collaborative approach to promote the conservation of migratory bird populations and is intended to strengthen migratory bird conservation efforts by identifying and implementing strategies to promote conservation and reduce or eliminate adverse impacts on migratory birds through enhanced collaboration between the BLM and the FWS in coordination with state, tribal, and local governments. Several design features of the Project are aimed at avoiding or minimizing Project effects on migratory birds, including raptors. Additional mitigation requirements to avoid or minimize effects on migratory birds, including raptors, are presented in Appendix B of this ROD.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA)(16 USC 668-668c), enacted in 1940 as amended, prohibits, without a permit issued by the Secretary of the Interior, anyone from taking eagles, including their parts, nests, or eggs. Several design features of the Project are aimed at

avoiding or minimizing Project effects on bald and golden eagles and other raptors. Additional mitigation requirements to avoid or minimize effects on raptors are presented in Appendix B of this ROD.

Clean Air Act

The screening-level air-quality model performed to analyze potential impacts on air quality could not rule out a potential exceedance of the numerical value of the 1-hour standard for nitrogen dioxide (NO_2) or the 24-hour standard for particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) because of emissions from diesel equipment to be used during Project construction. However, both the 24-hour $PM_{2.5}$ and 1-hour NO_2 National Ambient Air Quality Standards are based on a 3-year average of sub-maximum concentrations, while the model only predicts maximum concentrations over a construction duration of less than 2 years. Based on the conservative assumptions used in estimating the concentrations and dispersion of criteria pollutants generated from construction activities, violations of the National Ambient Air Quality Standards for $PM_{2.5}$, NO_2, or any other criteria pollutant resulting from Project construction would not be anticipated. However, in the absence of more refined analysis, the BLM will require Tier 3 or better diesel equipment to provide a reasonable assurance that 1-hour NO_2 impacts will not exceed that National Ambient Air Quality Standard. This requirement is documented in Appendix B of this ROD.

Safe Drinking Water Act

Potential impacts of the Selected Alternative on drinking water sources (i.e., wells, springs, and shallow groundwater) were determined to be low (refer to Section 3.2.4 of the Final EIS).

Clean Water Act, Executive Order 11988, and Executive Order 11990

The Project has been designed to comply with the requirements of Executive Order 11988 (Floodplain Management), Executive Order 11990 (Wetland Protection), and Sections 401 and 404 of the Clean Water Act (refer to Sections 3.2.4, 3.2.5, and 3.2.10 of the Final EIS).

Paleontological Resources Preservation Act

Surveys for paleontological resources will be conducted, in accordance with the framework for the Paleontological Resources Treatment Plan (PRTP) and the survey protocols in Appendix D of the POD, to identify significant paleontological resources in the inventory area. Excavation activities, erosion of fossil beds exposed due to grading, and unauthorized collection could damage or destroy paleontological resources during construction.

The PRTP was prepared to comply with the Paleontological Resources Preservation Act of 2009 (PRPA) and the requirements of BLM Manual 8270 and Handbook H-8270-1, General Procedural Guidance for Paleontological Resource Management, as well as certain state and local government lands. While the PRPA only applies to paleontological resources on federal lands, state requirements are also included in the PRTP (refer to Section 3.2.3.1.1 of the Final EIS). Specific measures to meet the requirements and conditions of the PRPA, any additional

BLM requirements, and the conditions are included in the PRTP that has been approved by BLM and the relevant state agencies.

Environmental Justice, Executive Order 12898

Potential environmental justice populations are not expected to be disproportionately affected by impacts associated with construction of the Project (refer to Section 3.2.22 of the Final EIS).

Migratory Birds, Executive Order 13186

On April 12, 2010, a National Memorandum of Understanding between the BLM and the FWS was entered into to promote the conservation of migratory birds. The bird species analyzed in the Final EIS were derived from a compilation of species included in the Partners in Flight, North American Bird Conservation Initiative, Intermountain West Joint Venture, North American Waterfowl Management Plan, North American Waterbird Conservation Plan, North American Landbird Conservation Plan, U.S. Shorebird Conservation Plan, Birds of Conservation Concern, National Audubon Society Important Bird Areas, and Bird Habitat Conservation Areas bird lists. The analysis regarding migratory birds presented in the Final EIS is compliant with the terms of both the National MOU (refer to Section 3.2.9 and Appendix J of the Final EIS) and Executive Order 13186. Mitigation requirements related to migratory birds are discussed in Appendix B of this ROD.

Consultation

The BLM is required to prepare EISs in coordination with any studies or analyses required by the Fish and Wildlife Conservation Act (16 USC 661 et seq.), ESA, and the NHPA. Also, in accordance with Executive Order 13175, BLM must consult, government to government, with American Indians, to ensure the tribes are informed about actions that may affect them.

Consultation under Section 7 of the Endangered Species Act

Informal consultation for the Project started with a submittal of written correspondence to the FWS from the BLM in July 2009. In early 2011, the FWS, BLM, USFS, BIA, and U.S. Army Corps of Engineers (federal agencies with the authority and responsibility to perform certain actions associated with the Project) entered into a Consultation Agreement. Additional federal agencies signed the Agreement in 2013 (i.e., Utah Reclamation Mitigation Conservation Commission, National Park Service).

Pursuant to Section 7 of the ESA, the BLM, in cooperation with the appropriate cooperating agencies, prepared a BA to initiate formal consultation with the FWS and fulfill agency obligations under Section 7(a)(2) of the Act for the Agency Preferred Alternative route. The Final BA was submitted to FWS July 2015 and addressed the potential for the Project to affect species listed by the FWS as threatened or endangered under the ESA or those that are proposed or candidate species for such listing across all jurisdictions and land ownership. Candidate species (i.e. greater sage-grouse) or species undergoing status review prior to any

listing determinations are discussed in an advisory context in the BA as their listing status may change over the timeline of Project development.

In the BA, the BLM provided "May Affect Not Likely to Adversely Affect" determinations for June sucker, endangered population and nonessential, experimental population of gray wolf, clay phacelia, shrubby reed-mustard, Mexican spotted owl, western distinct population segment of the yellow-billed cuckoo, Canada lynx, clay reed-mustard, Deseret milkvetch, Ute ladies' tresses, and the nonessential, experimental population of the black-footed ferret and requested concurrence from FWS for the informal consultation. BLM requested formal consultation for Colorado River Fish and designated critical habitat, Platte River Species, and designated critical habitat in association with potential for water depletions and Uinta Basin hookless cactus.

On January 15, 2016, FWS submitted final concurrence for the "May Affect Not Likely to Adversely Affect" determinations for the species above. At the same time, the FWS also issued a Biological Opinion (Appendix F of the ROD) that the Project (1) is not likely to jeopardize the four federally endangered fishes of the Upper Colorado River Basin (bonytail, Colorado pikeminnow, humpback chub, and razorback sucker) and is also not likely to destroy or adversely modify designated critical habitat, (2) is not likely to jeopardize the continued existence of the Platte River species (whooping crane, interior least tern, pallid sturgeon, northern Great Plains population of the piping plover, and western prairie fringed orchid) and is also not likely to destroy or adversely modify designated critical habitat for the whooping crane, and (3) is not likely to jeopardize the continued existence of Uinta Basin hookless cactus.

Consultation under Section 106 of the National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to take into account the effects of actions on historic properties (cultural resources that are either eligible for or listed in the NRHP). Regulations for the implementation of Section 106 are defined in 36 CFR part 800 – Protection of Historic Properties. These regulations define how federal agencies meet their statutory responsibilities as required under the law. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties (36 CFR 800.1). These parties include the ACHP, SHPOs, American Indian tribes, Tribal Historic Preservation Officers, state and other federal agencies, and individuals or organizations with a demonstrated interest in the undertaking due to their legal or economic relation to the undertaking or affected properties, or their concern with the effects of undertakings on historic properties (36 CFR 800.2).

As lead federal agency for compliance with Section 106 of the NHPA, the BLM initiated Section 106 consultation with the SHPOs, Utah Public Lands Policy Coordinating Office (PLPCO), Utah School and Institutional Trust Lands Administration (SITLA), USFS, NPS, and ACHP pursuant to 36 CFR 800.6 and 800.14 (b) of the ACHP's regulations implementing Section 106 of the NHPA in April 2010. The Section 106 process is separate from, but often conducted parallel with, the preparation of an EIS. To ensure compliance with Section 106, in 2010 the BLM assembled a formal group, the cultural resources task group, composed of the BLM State Archaeologists from each of the three states and cultural resources specialists from USFS, BIA, NPS, and Utah PLPCO. The cultural resources task group met at least once a

month during the development of the Project's EIS and Section 106 process. Other agency cultural resources personnel participated during the consultation process as appropriate.

The BLM in consultation with the Wyoming, Colorado, and Utah SHPOs agreed to develop a PA among the various state and federal agencies and consulting parties with an interest in the Project. A PA outlines the stipulations that will be followed concerning the identification, assessment, and treatment of cultural resources for the Project in accordance with 36 CFR 800.15(b). Signatories agree that the Project will be administered in accordance with stipulations and measures set forth in the PA. To date, the signatory parties include the BLM, the three SHPOs, and the Ute Indian Tribe of the Uintah and Ouray Reservation. The ACHP declined to participate because the Project was very similar to the TransWest Express transmission project (with very similar consulting parties involved) in which the ACHP was participating. Invited signatories include the USFS, NPS, U.S. Army Corps of Engineers, BIA, FWS, the Applicant, SITLA, the Utah Department of Transportation, and the Utah Reclamation Mitigation and Conservation Commission. Concurring parties invited to sign the PA include the following:

- Affiliated Ute Citizens (Uinta Valley Bands of Utah Indians)
- Alliance for Historic Wyoming
- The Church of Jesus Christ of Latter-day Saints
- Huntington Eccles Scenic Byway
- Mesa County, Colorado
- Milford Archaeological Research Institute
- Moffat County, Colorado
- National Trust for Historic Preservation
- Old Spanish Trail Association
- Oregon-California Trails Association
- Overland Trail Cattle Company
- The We Nooch Society
- Tracks Across Wyoming
- Utah Public Lands Policy Coordination Office
- Utah Professional Archaeological Council
- Utah Rock Art Research Association
- Utah Statewide Archaeology Society
- Confederated Tribes of the Goshute Reservation
- Eastern Shoshone Tribe of the Wind River Reservation
- Hopi Tribe
- Jicarilla Apache Nation
- Kewa Pueblo (formerly Pueblo of Santo Domingo)
- Navajo Nation
- Northern Arapaho Tribe of the Wind River Reservation
- Northwestern Band of Shoshone Nation
- Ohkay Owingeh (formerly Pueblo of San Juan)
- Paiute Indian Tribe of Utah
- Pueblo of Acoma
- Pueblo of Cochiti
- Pueblo of Isleta
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Nambe
- Pueblo of Picuris

- Pueblo of Pojoaque
- Pueblo of San Felipe
- Pueblo of San Ildefonso
- Pueblo of Sandia
- Pueblo of Santa Ana
- Pueblo of Santa Clara
- Pueblo of Taos
- Pueblo of Tesuque
- Pueblo of Zia
- Pueblo of Zuni
- San Juan Southern Paiute Tribe
- Shoshone-Bannock Tribes of the Fort Hall Reservation
- Skull Valley Band of Goshute Indians of Utah
- Southern Ute Indian Tribe of the Southern Ute Reservation
- Ute Mountain Ute Tribe of the Ute Mountain Reservation.

Through the development of a PA, the BLM and cooperating agencies outlined a phased approach to fulfill the four requirements of Section 106: initiate consultation, identify historic properties, assess adverse effects, and resolve adverse effects. The first step (initiate consultation) requires the BLM to establish the undertaking, identify the appropriate SHPO(s) or Tribal Historic Preservation Office(s), plan to involve the public, and identify other consulting parties. This step is generally scheduled concurrently with the NEPA scoping efforts. The second step (identify historic properties) requires BLM to determine the scope of the efforts (e.g., the methodologies for each type of cultural resource study, the Project Area of Potential Effects for each study), identify historic properties (Class III intensive pedestrian inventories), and evaluate historic significance (i.e., apply the four NRHP criteria and the seven aspects of integrity). During the third step, BLM assesses adverse effects on historic properties identified during the previous step. The second and third steps parallel the NEPA processes of drafting the EIS, conducting public hearings/workshops, and finalizing the EIS. The final step in the Section 106 process is the resolution of adverse effects, which will be documented in the HPTP. A final draft of the PA was provided in Appendix N of the Final EIS). Letters concerning the PA were sent on April 18, 2014, and June 12, 2015, to all of the tribes listed above. Table 1 indicates the tribes that have responded.

TABLE 1
RESPONSES OF TRIBES TO LETTERS CONCERNING THE PROGRAMMATIC AGREEMENT

Tribe	Date of Response	Response
Hopi Tribe	May 6, 2014	The tribe supports the identification and avoidance of their ancestral sites and considers prehistoric archaeological sites of their ancestors to be Traditional Cultural Properties (TCPs).
Pueblo of San Felipe	February 11, 2016	Asked that Tribal Historic Preservation Offices be recognized in the PA. Asked what steps are being taken in the planning process to deal with any discoveries.
Northern Arapaho Tribe	July 9, 2015	Asked to include definition of TCPs and areas of Traditional Ecological Knowledge in the PA. Asked about data confidentiality. Stated that view shed and landscape are very important in respect to TCPs.

The Final PA was signed on December 9, 2016, by the BLM, the SHPOs in Utah, Colorado, and Wyoming, the Wyoming Attorney General, and the Ute Tribe demonstrating that an effective

agreement is in place. Consultation under Section 106 of the NHPA is ongoing and will continue during post-EIS phases of Project implementation.

Government-to-Government Tribal Consultation

The United States has a unique legal relationship with American Indian tribal governments as set forth in the Constitution of the United States, treaties, Executive Orders (e.g., Executive Order 13175), federal statutes, federal policy, and tribal requirements, which establish the interaction that must take place between federal and tribal governments. An important basis for this relationship is the trust responsibility of the United States to protect tribal sovereignty, self-determination, tribal lands, tribal assets and resources, and treaty and other federally recognized and reserved rights. Government-to-government consultation is the process of seeking, discussing, and considering views on policy, and/or, in the case of this Project, environmental and cultural resource management issues. As part of the BLM's government-to-government consultation, tribal officials were informed of the Project and were updated periodically on the status of the Project. For efficiency, government-to-government consultation activities (e.g., updates to tribal council) often were combined with Section 106 tribal consultation activities (described above).

Early in the NEPA process, the BLM, in coordination with the federal and state cooperating agencies, identified 33 American Indian tribes that may have a traditional association with the Project area. The BLM initiated contact with American Indian tribes in accordance with various environmental laws and Executive Orders. As part of scoping, the BLM mailed letters, dated April 2011, to the American Indian tribes that may have an interest in the Project area to inform them of and determine their interest in the Project.

The BLM received responses from four tribes. The Hopi Tribe responded in April 2011 that the tribe would participate in government-to-government consultation. The Pueblo of Laguna responded in April 2011 that the tribe had no objections to the Project at that time. The Ute Mountain Ute Tribe of the Ute Mountain Ute Reservation informed the BLM in May 2011 that they intend to consult on the Project. In July 2011, the Eastern Shoshone Tribe of the Wind River Reservation informed the BLM that they intend to consult on the Project. The BLM received no responses from the other 29 tribes.

BLM managers participated in multiple contacts and meetings with tribes, particularly the Ute Indian Tribe of the Uintah and Ouray Reservation, whose reservation lands are crossed by the Project.

Consultation efforts and results of the consultation efforts are documented in Chapter 6 of the Final EIS and in the Project decision file.

Consultation with the tribes and pueblos will continue throughout Project implementation as stipulated under E.O. 13175, November 6, 2000.

Cooperating Agencies

In late May and June 2009, the BLM sent formal letters inviting all agencies and tribes whose jurisdiction and/or expertise are relevant to the Project to participate as cooperating agencies in the preparation of the EIS and land use plan amendments. The BLM conducted conference

calls on January 14 and 21, 2010, to orient the participating agency personnel to the Project and to discuss their roles and responsibilities on the Project. The agencies that accepted the invitation to participate as cooperating agencies are listed below.

Federal

- Department of Agriculture
  - Forest Service, Intermountain Region
- Department of Defense
  - Army Corps of Engineers, South Pacific Division
  - Army Environmental Center
  - Navy Region Southwest
- Department of the Interior
  - Bureau of Indian Affairs, Western Region
  - Fish and Wildlife Service, Mountain-Prairie Region
  - National Park Service
- Utah Reclamation Mitigation and Conservation Commission

States

- Wyoming
- Utah
- Colorado

Counties

- Wyoming
  - Carbon County
  - Sweetwater County
- Colorado
  - Mesa County
  - Moffat County
  - Rio Blanco County
- Utah
  - Carbon County
  - Duchesne County
  - Emery County
  - Grand County
  - Juab County
  - Sanpete County
  - Uintah County
  - Wasatch County

Wyoming Conservation Districts

- Little Snake River
- Medicine Bow
- Saratoga-Encampment-Rawlins
- Sweetwater County

Public Involvement

Scoping Process

The scoping process is purposefully conducted early in the EIS and land use planning process and is open to all interested agencies and the public. The intent is to solicit comments and identify issues that help direct the approach and depth of the environmental studies and analysis needed to prepare the EIS.

The scoping process is summarized in this section and documented in the *Energy Gateway South Transmission Project EIS Scoping Report* (BLM 2011a), which is available for viewing on the BLM Project website (http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/gateway_south.html). Additional description of the public involvement effort is presented in Chapter 6 of the Final EIS.

Public Review Process

The BLM published a NOI in the *Federal Register* on April 1, 2011 (Vol. 76, No. 63, pages 18241 to 18243), announcing the preparation of the EIS for the proposed Project and the opportunity for the public to participate in the process and provide input. The publication of the NOI in the *Federal Register* marked the beginning of EIS preparation and the scoping process.

The BLM published a NOA of the Draft EIS for public review and comment in the Federal Register on February 21, 2014. The EPA also published a NOA of the Draft EIS for public review and comment in the Federal Register on the same day, which initiated a 90-day public comment period. Approximately 29 paper and 194 electronic copies of the Draft EIS were distributed in February 2014 to federal agencies; tribal, state, and local governments; organizations; and individuals. The availability of the Draft EIS; deadline for public comments; and locations, dates, and times of public meetings on the Draft EIS were announced in paid newspaper notices, media releases, and a newsletter that was mailed to all parties on the Project mailing list including potentially affected property owners, agencies, stakeholders and other interested parties. During the comment period, BLM held 12 public meetings to provide information and solicit public comments on the Draft EIS. A total of 279 people attended the public open houses.

Comments Received on the Final EIS

Although there was no comment period provided for on the Final EIS, the BLM nevertheless received ten comment submittals (i.e., letters or emails) during the 30-day review period for the

Final EIS. These comments are summarized in Appendix A of this ROD and were addressed to the extent practicable.

Clarifications and Addendum to the Final EIS

The BLM lands with wilderness characteristics inventory for the Desolation Canyon Addition units (north and south) was completed on January 21, 2016. The results of this inventory confirm the north unit, adjacent the Green River and crossed by the Project, does meet all of the requirements for determination of wilderness characteristics. As stated in the inventory's summary of analysis, some sight and sounds indicating the influence of man are present within the unit. However, due to the remoteness and topographic screening, the units would be perceived as natural to the average visitor. The BLM Vernal Field Office will incorporate both the north and south additions into the Desolation Canyon area containing wilderness characteristics. The analysis contained in the Final EIS is consistent with these findings and specifically, the Project would affect the wilderness characteristics most intensely in Kings Canyon and other areas where topographic screening limits the influence of existing adjacent development increasing the impact of the Project on the area's wilderness characteristics. The construction and operation of the Project would remove approximately 37 acres from the northern edge of the unit in proximity to existing pipelines north of the unit's boundary.

Additionally, Section 3.2.16.5.4 of the Final EIS contains an error. The text (page 3-860, last paragraph) states "Alternative COUT-C in Utah crosses the northern portion of the Desolation Canyon unit in the Vernal Field Office (removing approximately 7,100 acres from the Unit for the Project right-of-way and northern edge of the Unit)…" and is incorrect. The 250-foot right-of-way for the Project would remove approximately 368 acres from the unit. An approximately 3,686-acre area at the northern edge of the unit would be removed from the contiguous unit; this portion would not meet the 5,000-acre size requirement for management as a lands with wilderness characteristics unit. However, the remaining portion of the unit to the south of where the Project would cross the unit would meet the size requirement.

An addendum to the Final EIS was prepared to provide information to (1) address the FWS listing decision regarding the greater sage-grouse and (2) evaluate compliance with the ARMPAs, which were issued after preparation of the Final EIS. The addendum was submitted with the Final EIS and is available with the Final EIS documents on the BLM project website at:

https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=69112

As explained in that addendum, neither the FWS listing decision nor the BLM's ARMPAs represented significant new circumstances or information triggering a need to supplement the Final EIS.

Governors' Consistency Review

Upon publication of the Final EIS, the Governors of Wyoming, Colorado, and Utah conducted consistency reviews for the proposed plan amendments to identify any inconsistencies with State or local plans, policies, or programs. No inconsistencies were identified.

Contact Person

For further information about this ROD or the BLM's decision, please contact:

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Appendix A – Reponses to Comments on the Final EIS

TABLE A-1 COMMENTS RECEIVED ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT[1]			
Agency/Organization	**Summary of Comment Submittal**	**Region of Concern**	**BLM Response**
U.S. Environmental Protection Agency, Region 8	Recommend consideration of Presidential Memorandum: Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (November 3, 2015) in developing Record of Decision; require Tier 3 or better diesel equipment to provide a reasonable assurance that 1-hour NO_2 impacts will not exceed that National Ambient Air Quality Standard.	Wyoming, Colorado, Utah	Appendix B of this Record of Decision lists the mitigation and monitoring requirements developed by BLM, with input from cooperating agencies, in accordance with the Presidential Memorandum: *Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment* (November 3, 2015); Secretarial Order No. 3330, *Improving Mitigation Policies and Practices of the Department of the Interior*; and U.S. Department of the Interior Manual 600 DM 6 on landscape-scale mitigation.
U.S. Fish and Wildlife Service	Indicated document would benefit from greater clarity regarding potential impacts to greater sage-grouse and migratory birds, additional actions necessary to address those impacts, and proposed compensatory mitigation; as well as clarity regarding differing impacts of the various structure types on natural resources; requested use of the Greater Sage-Grouse Conservation Objectives Team (COT) Report Checklist to ensure consistency with COT Report and the Mitigation Framework for greater sage-grouse; recommends that a rationale be provided to justify the use of guyed structures for most of the project length; the Final EIS does not include a description of or a need for compensatory mitigation for the	Wyoming, Colorado, Utah	Appendix B of this Record of Decision lists the mitigation and monitoring requirements for biological resources, including greater sage-grouse and migratory bird habitats. The mitigation requirements include the use of alternative structure types and development of a comprehensive mitigation plan for review by the agencies prior to Project construction. Guyed structures are included in the suite of tower types considered for the

TABLE A-1 COMMENTS RECEIVED ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT[1]			
Agency/Organization	**Summary of Comment Submittal**	**Region of Concern**	**BLM Response**
	effects to migratory bird habitat as a result of the project; aquatic habitats are undervalued in the resource vulnerability model in Table 3-38; the U.S. Fish and Wildlife Service provided multiple comments on the administrative Final EIS in April 2015 for which they are awaiting response.		Project. As indicated in the EIS, this type of structure will not be used in areas where not compatible with resources. Comments provided by the U.S. Fish and Wildlife Service, a coopering agency in preparation of the EIS, on the methodology and the administrative Final EIS were considered and addressed.
National Park Service	Indicated comments submitted during the review of the Draft EIS were adequately addressed in the Final EIS. NPS has no additional comments on the Final EIS.	Colorado	Thank you for your comment.
Duchesne County Commission	Support the agency-preferred/applicant-preferred alternatives that follow a route crossing southern Duchesne County, where impacts on private lands are minimized.	Utah	Thank you for your comment.
Sweetwater County Board of Commissioners	Requests inclusion of socioeconomic mitigation measures that are stipulated in Section 3.17, pages 26 and 27 of the TransWest Express Final Environmental Impact Statement in the Record of Decision. The measures include: (1) developing a proactive housing plan in conjunction with the Wyoming Industrial Siting Council and local officials; (2) encouraging contractors to support local sales and use taxes by purchasing locally and delivering freight free on board within the counties where it will be utilized; and (3) conducting annual coordination meetings to ensure that local needs and services are addressed.	Wyoming	Comments forwarded to the Applicant for consideration.

TABLE A-1 COMMENTS RECEIVED ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT[1]			
Agency/Organization	**Summary of Comment Submittal**	**Region of Concern**	**BLM Response**
Cross Mountain Ranch Limited Partnership	Alternatives, including the agency-preferred alternative, would cross the Cross Mountain Ranch Conservation Easement. The Deed of Conservation Easement excludes new overhead transmission lines from crossing the conservation easement.	Colorado	The routing in this area is complex. The Agency Preferred Alternative in this area was selected in part to minimize crossing the Cross Mountain Ranch conservation easement to the extent feasible, with consideration of other resource issues and avoidance and exclusion areas in the region.
Questar Pipeline Company	Concerns regarding potential corrosion associated with alternating current for crossings/colocation of the Questar Pipeline facilities with the Energy Gateway South project in seven locations. In order to mitigate the corrosion Questar would need to install below ground alternating current grounding facilities parallel to each of the existing pipelines. This mitigation would need to be installed prior to energizing the Energy Gateway South project. Questar Pipeline will need to hire a third-party consultant that specializes in alternating current interference to perform a study; however, Questar Pipeline would expect Rocky Mountain Power to agree to fully fund the interference study and all mitigation recommended by the study.	Wyoming, Colorado, Utah	This comment letter has been forwarded to the Applicant so that the Applicant may coordinate with Questar Pipeline Company on requests. The technical nature of the issue places the issue between Applicant and any pipeline company with facilities that may be crossed with the Project. Based on comments from Questar Pipeline Company on the Draft EIS, the Applicant coordinated with Questar to identify an alternative route revision in the Uinta Basin (in the vicinity of the Green River to address corrosion concerns with siting the Project in the vicinity of Questar pipelines.

TABLE A-1 COMMENTS RECEIVED ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT[1]			
Agency/Organization	**Summary of Comment Submittal**	**Region of Concern**	**BLM Response**
Union Pacific Railroad	Objects to any route that runs parallel, within 300 feet of a railroad right-of-way; all crossings of the railroad right-of-way must be at 90 degrees, or as close to 90 degrees as possible without going beyond the degree range of 45; all crossings will require a future agreement with the Union Pacific Railroad regarding construction and maintenance; if the Energy Gateway South project cannot meet these conditions, a mitigation study should be conducted at Rocky Mountain Power's expense to avoid damage to Union Pacific Railroad's signal and communication facilities. The Union Pacific Railroad requested the BLM require Rocky Mountain Power to abide by the conditions outlined in their comments on the EIS.	Wyoming, Colorado, Utah	This comment letter has been forwarded to the Applicant so that the Applicant may coordinate with Union Pacific Railroad on requests. The technical nature of the issue places the issue between Applicant and any railroad company with facilities that may be crossed with the Project.
The James W. Day Family	Comments expressed opposition to Variation 1 of alternative route COUT-C that crosses several agricultural parcels; does not oppose the agency-preferred alternative (COUT-C).		Thank you for your comment.
John Gledhill	Comments expressed opposition to siting of the project through Nephi.	Utah	Thank you for your comment. Please note the Project is not routed through Nephi.
NOTE: [1]Although not a formal comment period, these comments were received by BLM during the 30-day review period of the Final EIS.			

Appendix B – Mitigation and Monitoring Requirements

Additional Project-Specific Mitigation Measures

Additional mitigation and monitoring measures have been developed for the Energy Gateway South Transmission Project (Project) through the National Environmental Policy Act (NEPA) process, and are proposed to appropriately address resource impacts. Agency-required mitigation measures were described initially in Chapter 2 of the Final Environmental Impact Statement (Final EIS) (refer to Table 2-13). They have been refined and incorporated into the draft Plan of Development (POD) (Appendix D of this Record of Decision [ROD]). The agency-approved final POD will be required to include application of the mitigation measures consistent with the language in the POD and this appendix (Appendix B).

The BLM has considered all facets of the mitigation (avoid, minimize, rectify, reduce or eliminate over time, compensate) (40 Code of Federal Regulations [CFR] 1508.20), consistent with the Bureau of Land Management's (BLM) *Draft - Regional Mitigation* Manual Section 1794 (interim policy). The BLM has prioritized opportunities to mitigate impacts at the site of the activity, in conformance with the land use plan goals and objectives, through avoidance, minimization, rectification, and reduction over time. When BLM has determined that additional mitigation is appropriate to address remaining impacts, it also considered appropriate compensatory mitigation to address residual impacts to important, scarce, and sensitive resources.

Compensatory mitigation is intended to offset or compensate for the remaining residual 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. Working with the Applicant and other cooperating agencies, the BLM has developed and evaluated appropriate mitigation, in accordance with applicable policy and guidance, including the Presidential Memorandum: *Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment* (November 3, 2015); Secretarial Order No. 3330, *Improving Mitigation Policies and Practices of the Department of the Interior*; and U.S. Department of the Interior (DOI) Manual 600 DM 6 on landscape-scale mitigation (DOI 2015).

Final Notice to Proceed Requirements

Explanation of the Notice to Proceed Process

Several details concerning Project design, construction, and mitigation actions will not be finalized at the time the right-of-way grant is issued. Post-Record of Decision (ROD) requirements consist of completing an acceptable final POD, which will include mitigation requirements and right-of-way grant stipulations required to be met before the final notice to proceed (NTP) is issued. This final POD covering Project-wide practices and requirements will contain the final plans outlined in the attached draft POD, including any updates and revisions to those plans required by this ROD, as well as additional NTP requirements that may be outlined in the right-of-way grant.

The Applicant will not initiate any construction or other surface-disturbing activities on the right-of-way without the prior written authorization of the BLM Authorized Officer or his/her delegate in the form of a final NTP. Any final NTP will authorize construction or use only as therein expressly stated and only for the particular location or use therein described. Prior to the issuance of each NTP, all applicable environmental protection and mitigation plans needed will

be completed by the Applicant and approved by the Authorized Officer or his/her delegate, and proof of possession of all required and applicable federal permits will be submitted by the Applicant to the BLM. The Authorized Officer may suspend or terminate in whole or in part any NTP that has been issued when, in his/her judgment, unforeseen conditions arise that result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

As an option, additional NTPs may be issued for specific pre-construction activities prior to completion of the final POD, including for geotechnical investigation (analyzed in the Final EIS) provided that all necessary survey work associated with the geotechnical investigation is completed, and the reports are reviewed and approved by the pertinent agencies before BLM issues a NTP for this activity.

The final POD for construction will include adequate details regarding what mitigation and how these mitigation measures will be implemented. A final NTP will be issued on receipt of an agency-approved final POD for construction, approved mitigation and monitoring and other stipulations as described in the ROD.

Issuance of the right-of-way grant establishes the Applicant's right to use the authorized public lands to construct, operate and maintain a high-voltage electric transmission line and associated facilities. The Applicant will pay rent in accordance with 43 CFR 2806 from the date the grant is issued. However, the Applicant is not permitted to use the granted areas for the proposed Project until the actions listed below are completed and a NTP is issued. The BLM controls Project starts through the NTP process contained in 43 CFR 2807. The following activities will be performed after the issuance of the ROD and right-of-way grant:

- Acquisition of authorizations on state and private lands
- Completion of biological resources surveys including but not limited to federally listed species under the Endangered Species Act as outlined in the final Biological Assessment (July 2015), including BLM sensitive species, to inform final engineering and design
- Completion of final engineering to include final structure locations, final access road layout including field verification of structure locations, and proposed access roads for the Selected Alternative
- Layout and field verification of all temporary work areas to include material storage yards, fly yards/laydown areas and portable concrete batch plants
- Class III cultural resources, paleontological resources, and biological resources preconstruction surveys, completion of analysis and preparation of summary reports including preparation and approval of Historic Property Treatment Plans (HPTPs), Paleontological Resources Treatment Plant (PRTP) and mitigation measures at sensitive locations where resources cannot be avoided, regardless of jurisdiction
- Jurisdictional Waters of the United States delineation and any other resource surveys required to support permitting
- Acquisition of remaining federal permits and acquisition of required state and local permits, stipulations and conditions of approval set forth in all agency decisions, including fully developed environmental management plans
- Review and acceptance by BLM of the greater sage-grouse habitat equivalency analysis (HEA) based on the site-specific engineered and designed transmission line including access roads, staging areas, etc.
- Development of a complete and comprehensive Greater Sage-Grouse Mitigation Plan in coordination with the Technical Advisory Group

In general, a POD is used to document a federal right-of-way Applicant's construction, operation, rehabilitation, and Environmental Protection Plans and is submitted to BLM for acceptance and NTP approval (43 CFR Part 2804.25). The POD provides direction to the Applicant's construction personnel, construction contractor(s) and crews, Compliance Inspection Contractor (CIC), environmental monitors, and agency personnel regarding specifications of construction. The POD also provides direction to the agencies and Applicant's personnel for operation and maintenance of the Project.

The content of the POD, which is carried forward from and/or refined from the information and data disclosed in the EIS, consists of (1) background information, direction, and implementation plans and (2) detailed mapping to facilitate execution of environmental protection and mitigation measures. Background information and direction includes the Project description, including explanation of the Applicant's and agencies' roles and responsibilities; description of construction, operation, and maintenance activities; specification of land use and access; and description of design features and other measures for environmental protection to avoid sensitive environmental resources. The POD iterations supporting the Draft and Final EISs also contained multiple Environmental Protection Plans detailing the Applicant's commitment to mitigate adverse impacts resulting from construction, operation, and maintenance of the Project.

The draft POD for the Project (Appendix D of this ROD) was revised in September 2016. The draft POD contains updated framework Environmental Protection Plans; and additional information related to the engineering, micro-siting, contracting and permitting of the Selected Alternative; and the initial layout of access roads, temporary work areas, and locational constraints (e.g., special status species habitat) of the Selected Alternative.

The attached draft POD contains the following implementation plans that will need to be updated or expanded to include BLM's additional ROD requirements once final survey data informs final engineering design:

- Adaptive Wildlife Management Plan
- Biological Resources Conservation Plan
- Biological Resources Monitoring Plan
- Blasting Plan Framework
- Emergency Preparedness and Response Plan Framework
- Environmental and Safety Training Plan
- Environmental Compliance Management Plan
- Erosion, Dust Control, and Air Quality Plan
- Fire Protection Plan
- Flagging, Fencing, and Signage Plan
- Greater Sage-Grouse Mitigation Plan
- Hazardous Materials Management Plan Framework
- Historic Properties Treatment Plan
- Migratory Bird Nest Management Plan
- Noxious Weed Management Plan
- Paleontological Resources Treatment Plan
- Reclamation, Revegetation, and Monitoring Plan Framework
- Spill Prevention and Response Plan Framework
- Stormwater Pollution and Prevention Plan Framework
- Traffic and Transportation Management Plan
- Water Resources Protection Plan
- Water Use Plan Framework

Prior to receiving an NTP for construction of the Project from the BLM, the Applicant will complete a final POD based on the results from all completed resource surveys. Upon completion, the Applicant will submit the final POD for review and acceptance by the BLM and any agencies with jurisdictional or regulatory authority over resources affected by the Project. The final POD will detail the Applicant's construction plans and specifications, and construction practices and procedures for the Selected Alternative. The final POD will be developed in coordination with the CIC and adequate coordination with all BLM state and field offices, FWS, and any additional cooperators identified by BLM, which may require multiple agency and Applicant in-person meetings and may include field visits to similar projects to develop acceptable designs and site-specific implementation of mitigation measures.

The final POD also will describe the processes and procedures the Applicant will employ to comply with the requirements of the RODs for the Project and will include the Environmental Compliance Management Plan. The final POD will be appended to the BLM right-of-way grant.

The final POD may be required to contain additional resource mitigation plans described within this decision. The final POD will contain a mapset generated specifically for the NTP process that shows Project detail, sensitive resources identified by BLM and Project mitigation proposed to avoid and minimize impacts to those resources.

The final POD will contain an adequate construction schedule and detailed plan as to how the schedule will be shared, updated and maintained. An overall Project schedule is suggested and a separate more detailed short term schedule is suggested for 3 to 4 week construction periods. Additional detail will be required in the preconstruction checklist for NTP issuance. The schedule will include a sequencing of construction activities and any changes will be timely provided.

Construction POD development and implementation will ensure agency personnel are involved throughout the Project area and specific areas will be identified where resources driven by law and policy require intensive agency involvement.

These additional requirements will enable BLM to comply with current regulation and policy. The final POD will be updated to include all additional BLM requirements in appropriate or additional POD sections.

Biological Resources Mitigation

Structure Types

This ROD includes specific requirements related to transmission-line structure types to minimize Project impacts on sensitive species. The BLM and FWS are aligned that adequate science was included in the Final EIS analysis supporting that predation reduction is achieved by reducing perching opportunities. Accordingly, the BLM and FWS consider structure types that provide multiple horizontal surfaces (such as the self-supporting steel-lattice and guyed steel-lattice structures) as having the greatest potential to contribute to increased long-term indirect effects caused by increased predator presence and predation. Self-supporting steel H-frame structures and/or measures to reduce perching opportunities and bird strike risk (e.g., perch and nest deterrents) are required in certain areas within habitat occupied by sensitive species, including greater sage-grouse, important migratory bird habitats (i.e. riparian, wetlands), pygmy rabbit, white-tailed prairie dog, and black-footed ferret. This is especially applicable in landscapes that are not influenced by existing infrastructure. These measures are designed to minimize the

long-term indirect effects to these species. The following minimization measures related to structure types will be required prior to issuance of a NTP:

- Self-supporting steel H-frame structures will be required for an estimated 11 miles within a greater sage-grouse Priority Habitat Management Area (PHMA) in Colorado where there are no existing above-ground large transmission structures. Within the 11 miles of greater sage-grouse PHMA in Colorado, special engineering considerations may guide structure needs at the Yampa River crossing.
- A Nest Management and Monitoring Plan to reduce avian predation that includes an acceptable application of perch discouragers, nest deterrents, and effectiveness monitoring, and is approved by BLM and cooperating agencies with regulatory authority, will be required for construction in greater sage-grouse PHMA and GHMA on BLM land in Wyoming, Colorado, and Utah and other areas where there are sensitive biological resources such as pygmy rabbit, white-tailed prairie dog, and black-footed ferret.

Greater Sage–Grouse Mitigation

BLM's Greater Sage-Grouse Approved Resource Management Plan Amendments (ARMPAs) were approved September 18, 2015; responding to the threats identified in FWS's 2010 "warranted but precluded" finding and guided by the FWS's Conservation Objective Team Report and the BLM National Technical Team Report. The ARMPAs identify PHMAs as avoidance areas except as otherwise noted for a few priority transmission projects, such as the TransWest Express Transmission Line Project (TransWest Express Project) and portions of this Project co-located with the TransWest Express Project in Wyoming and Colorado. The ARMPAs acknowledged that the Project-specific NEPA and decision-making process were developing Project-specific conservation measures following NEPA's mitigation hierarchy for greater sage-grouse that should achieve a net conservation benefit. In Utah, the Project is not co-located with high priority transmission projects and is subject to the application of MA-SSS-3 and MA-SSS-5 in the ARMPA for Utah.

The BLM and cooperating agencies collaborated to prepare a *Framework for Sage-Grouse Impacts Analysis for the Energy Gateway South Transmission Project* (Appendix K of the Final EIS) as an early step to addressing potential impacts on sage-grouse during preparation of the EIS. The framework outlined the analysis and potential mitigation required to support selection of an alternative that would be consistent with agency missions and goals pertaining to greater sage-grouse conservation. The framework also was developed to facilitate relevant cooperating-agency decision-making or evaluation of compliance with applicable plans and policies during project implementation .

Further, the agencies collaborated with the Applicant to identify feasible strategies to avoid, minimize, and compensate for the potential effects of the Project on sage-grouse pursuant to the applicable plans and policies. Strategies included Project siting considerations, development of additional onsite mitigation, and development of appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to sage-grouse. The methods used in the preliminary development of the Applicant's Sage-Grouse Mitigation Plan, including the HEA and the types of offsite mitigation that may be considered are described in Exhibit B (Energy Gateway South Transmission Project Greater Sage-Grouse Habitat Equivalency Analysis Plan) of Appendix K of the Final EIS.

Representatives from the BLM, FWS, state wildlife agencies, and the Applicants from both the Project and the TransWest Express Project formed the Greater Sage-Grouse Technical Advisory Group (TAG) in March 2016. The purpose of the TAG was to review the Applicants' approaches to the mitigation of impacts on greater sage-grouse, including the methods for addressing direct and indirect impacts, and to develop input and guidance for consideration by the Applicants when finalizing their greater sage-grouse mitigation plans. The TAG held weekly meetings from March 2016 through June 2016 and produced a guidance document that includes methods for quantifying direct and indirect effects on greater sage-grouse for both projects.

The HEA and final mitigation plan will be developed by the Applicant in accordance with the TAG guidance (refer to Appendix B1 of this ROD) document and presented for review by the BLM and the TAG and other stakeholders with jurisdiction when the final design and engineering of the selected route is completed. The final mitigation plan will evaluate and assess the levels of disturbance associated with direct and indirect effects to identify appropriate levels of final mitigation to demonstrate a net conservation gain. The comprehensive mitigation plan will be included as an appendix to the final POD for review by the TAG. Based on the TAG comments, the BLM will provide the final review and approval of the HEA and mitigation plan. The Applicant will also update the final POD to incorporate the greater sage-grouse specific conservation measures analyzed in the Final EIS and demonstrate how avoidance and minimization was achieved in the final design and engineering of the selected route. An NTP will be required, documenting final approval of the HEA and Greater Sage-Grouse Mitigation Plan prior to any surface-disturbing activity (other than geotechnical) associated with construction of the transmission line being permitted.

Platte River Species

Compliance with the Platte River Recovery Agreement for three endangered and two threatened species in the Platte River drainage require identification of the location and amounts of water withdrawals from the basin. The Applicant has committed to acquire water to use for construction of the Project from existing sources already subject to Section 7 consultation and covered under the Platte River Recovery Implementation, but specific sources cannot be identified until near the time of construction. As the sources and quantities of water withdrawals for the Project are not yet identified, the BLM is requiring the Applicant to provide that information. Upon determination that the water withdrawals are in compliance with the Agreement, the BLM will issue a NTP for this item.

Biological Resources Conservation and Monitoring and Adaptive Management Plans

The final POD for construction must include a Biological Resources Conservation Plan and Biological Resources Monitoring Plan and an Adaptive Wildlife Management Plan approved by BLM and agencies with jurisdictional authority over biological resources being affected. The Biological Conservation Plan will explain the survey process for all wildlife and special status species and include an advance coordination requirement with BLM prior to all survey work efforts. The Biological Conservation Plan will require the survey team to operate under the guidance and direction of BLM. No survey work will take place without adequate prior coordination and advance guidance by BLM and any agencies with jurisdictional authority over resources being affected.

For habitats where predation is a concern for greater sage-grouse, white-tailed prairie dog, pygmy rabbit, and black-footed ferret, an acceptable Nest Management and Monitoring Plan to

Reduce Avian Predation, including an acceptable application of perch discouragers and nest deterrents as well as adaptive management, monitoring and reporting will be required to be submitted and accepted by BLM before NTP issuance. Final determinations of the application of perch and nest deterrents will be made based on input of all agencies with jurisdictional and regulatory (FWS) authority over affected resources. Within the 11 miles of greater sage-grouse habitat in Colorado, special engineering considerations may guide structure needs at the Yampa River crossing. Additionally, the structure requirements discussed previously for these habitats would be implemented.

An acceptable Biological Resources Monitoring Plan will state that if a federally listed species is encountered, all Project activity in the vicinity of the protected species will stop until a biological monitor, in conjunction with the appropriate agencies, determines that the level of impact associated with the Project activity will not be greater than that identified during the Section 7 consultation application of required conservation measures.

The Adaptive Management Plan will document how information regarding the condition of biological resources will be collected during construction and provided to the BLM authorized officer or their designee (CIC) so they might consider modification of certain seasonal wildlife restrictions, if warranted.

The BLM will require the Applicant to prepare a final Biological Resources Mitigation and Monitoring Report, in consultation with the CIC, which documents the application of mitigation measures, including variances and adaptive management, and monitoring results to ascertain the effectiveness of mitigation.

Migratory Bird Mitigation

The draft POD commits to appropriate avoidance and minimization measures that would effectively reduce impacts during construction and operation. Reclamation requirements would effectively restore habitats within the areas disturbed during construction and appropriate seed mixes would be considered to restore the habitats back to an ecologically functioning vegetation community similar to what was disturbed within the limitations of the draft POD's Vegetation Management Plan for operation and maintenance. The BLM's obligations under Executive Order 13186 Responsibilities of Federal Agencies to Protect Migratory Birds (January 17, 2001) and resulting Memorandum of Understanding between the BLM and FWS to *Promote the Conservation of Migratory Birds* (April 12, 2010) are met through the on-site mitigation that is being applied to the projects through avoidance, minimization, and reclamation of disturbed habitats. The BLM's obligations and conservation responsibilities under the MOU are also met through the many habitat improvement and restoration projects completed on BLM managed lands to benefit multiple species.

The BLM will require use of the greater sage-grouse HEA for direct effects through Wyoming but remove the sage-grouse specific variables such as the proximity to leks.

Wyoming: The compensatory mitigation for direct effects identified in the sage-grouse HEA (minus the sage-grouse specific variables such as leks) will provide benefits to sage-brush obligate migratory bird species in greater sage-grouse PHMA and GHMA.

Colorado: The compensatory mitigation identified in the sage-grouse HEA will benefit sage-brush obligate migratory bird species. The majority of habitat crossed in Colorado is sagebrush

and is covered by the sage-grouse HEA and associated mitigation or is co-located. The selected alternative does not cross old-growth pinyon-juniper.

Utah: The compensatory mitigation identified in the sage-grouse HEA will benefit sage-brush obligate migratory bird species. The selected alternative is largely co-located with existing infrastructure through Utah.

Cultural Resources Mitigation

Section 106 of the National Historic Preservation Act, 54 USC 306108, requires federal agencies to take into account the effects of their undertakings on historic properties (36 CFR 800.1(a)). BLM has elected to prepare a PA to set forth the requirements for complying with the Section 106 process, which the Applicant must satisfy prior to receiving a NTP from BLM. The undertaking and the identified area of potential effects covers the entire Project regardless of land status or jurisdiction. The PA and its identification, evaluation and mitigation requirements apply to all jurisdictions, not exclusively to BLM or federal lands.

All reports required by the PA will be submitted to the BLM when the final design and engineering of the Selected Alternative is completed. As specified in the PA, the reports will be reviewed by the BLM and its Consulting Parties. Upon the BLM's acceptance and approval of the Class III inventory reports and HPTPs, the BLM will notify the Applicant in writing that these NTP requirements have been completed. Fulfillment of these requirements will be among the elements to be completed before the BLM issues an NTP.

Historic Property Treatment Plans

Guided by the procedures and requirements of the PA signed and executed by all parties and effective on December 9, 2016, and by the results of the completed Class III cultural resources inventories for each state and on tribal lands, an HPTP outline for each state affected by the Project will be prepared and submitted by the Applicant to the BLM as part of the NTP process. The BLM and the Consulting Parties will use this outline to determine HPTP content for each state. Based on the final outline as approved by the BLM, the Applicant will prepare an HPTP for each state affected by the Project. Each state-wide HPTP must be finalized and approved by the BLM as specified in the PA prior to the issuance of an NTP for any portion of the Project within that state. Mitigation for adverse effects to National Historic Trails will be included in each state's HPTP.

The PA identifies processes and procedures to identify historic properties and to determine if historic properties are eligible for listing on the National Register of Historic Places and if these properties would be adversely affected by the Project's construction and/or operations and maintenance. The Class III Inventory Reports will contain this site-specific information for each state. The state-wide HPTPs required by the Programmatic Agreement must include site-specific plans for avoidance, minimization, and/or compensation for each historic property that is determined to be adversely affected by the Project in that state. Identification of cultural resources in the Project area will occur during Class III inventories to be conducted in each state, including National Register eligibility determinations and findings of effects. The number and location of historic properties within each state's HPTP is unknown at this time. The right to use the granted area in each state is withheld until that state's HPTP is finalized in accordance with the Programmatic Agreement procedures and requirements and further, until the avoidance, minimization and/or compensation of adverse effects for each historic property is

completed on the ground in accordance with the Programmatic Agreement and the applicable HPTP.

The Applicant will post a financial security (such as a surety bond, letter of credit, etc.) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing each HPTP, or other treatment activities, as negotiated by the Applicant where they contract for services in support of this Programmatic Agreement. Such costs may include, but are not limited to, treatment; post-field analyses; research and report preparation; interim and summary reports preparation; the curation of Project documentation and artifact collections in a BLM approved curation facility; and the repatriation and reburial of any human remains, sacred objects, or objects of cultural patrimony. The Applicant will post a financial security prior to BLM issuing an NTP for the segment where historic property treatment is required. The security posted is subject to forfeiture if the Applicant does not complete tasks within the time period established in the applicable HPTP; provided, however, that the BLM and the Applicant may agree to extend any such time periods. The BLM will notify the Applicant that the security is subject to forfeiture and will allow the Applicant 15 days to respond before action is taken to forfeit the security. The BLM will release the financial security, in whole or in part, as specific tasks are completed and accepted by the BLM.

The BLM will monitor activities pursuant to the Programmatic Agreement and each state's HPTP. Should the Applicant or its cultural resources contractor fail to comply with any provision of the Programmatic Agreement or each HPTP, the BLM may, at its discretion, counsel the Applicant and/or its cultural resources contractor regarding performance requirements, or suspend the permits under which the Programmatic Agreement is executed. Such suspension could, at the BLM's discretion, result in the issuance of a "stop work" order for the entire Project if the BLM determines that the severity of the failure to comply warrants it.

Tribal Monitoring Plan

As an NTP requirement and a requirement of the Programmatic Agreement, the Applicant will develop and submit to BLM for approval, a tribal monitoring plan that will contain the following provisions:

- Tribal monitoring is to be considered as a component of environmental monitoring.
- The Applicant will facilitate and fund tribal monitoring activities for the Ute Tribe of the Uintah and Ouray Reservation; and for the Eastern Shoshone Tribe and the Northern Arapaho Tribe for the portion of the Project in Wyoming. The tribal government must request tribal monitoring in writing to the BLM.

The Applicant will develop the tribal monitoring plan in coordination with the BLM and the tribal government. Development of the plan will require face-to-face meetings with the BLM and the tribal government. The Applicant will submit the draft Plan to the BLM for review. After review of the plan by the BLM and the tribe and acceptance by the BLM, the BLM will notify the Applicant that this NTP requirement has been completed. No surface disturbing activity associated with construction of the transmission line being permitted is to take place prior to receipt of this notification.

The tribal monitoring plan that will contain the following provisions:

- The Applicant will ensure that the tribal monitoring plan includes provisions for tribal participation in Class III inventories; monitoring of archaeological excavations associated

with data recovery; monitoring of construction and reclamation activities; and tribal participation in reviewing reports.

- The tribal monitoring plan will provide for access to all Class III inventory and data recovery, construction and reclamation locations, as well as reasonable notification times.
- The tribal monitoring plan will lay out roles and responsibilities for the Applicant, the BLM, the tribe, and tribal monitors, including when and to whom tribal monitors should report (generally. directly to BLM or to the CIC as opposed to the Applicant or construction contractor).
- The Applicant will ensure that the tribal monitoring plan includes provisions that outline how tribal concerns will be reported to BLM or to the Compliance Inspection Contractor in a timely manner as well as procedures for how such concerns will be documented and how they will be addressed.
- The Applicant will ensure that any tribal concerns documented during the Class III inventory are included in the Class III inventory reports. The Applicant will ensure that any tribal concerns documented during archaeological data recovery and construction and reclamation are included in a monitoring report to be completed at the conclusion of the construction phase with an additional monitoring report to be completed at the conclusion of the reclamation phase.
- The tribal monitoring plan will provide for safety and sensitivity training for all Project personnel. Sensitivity training will be developed in coordination with BLM and the tribes. BLM must approve such training in advance and the tribe must be given the opportunity to present portions of the training.

Cultural Resources Survey and Data Recovery Requirements

Any Project-related cultural resources survey and data recovery work will be coordinated with and authorized by the BLM, including (1) review and approval of the scope of work and contractors selected and (2) reporting protocol. No cultural resources survey or data recovery work may be conducted without prior authorization by and coordination with the BLM.

National Conservation Lands

National Scenic and Historic Trail Mitigation

All applicable mitigation measures proposed in Chapter 2 of the Final EIS and included in the draft POD (Appendix D of this ROD) for the Project related to impacts to the Continental Divide National Scenic Trail (NST) and other National Historic Trails, including trails under study or recommended as suitable for congressional designation, are required. The following discussion focuses on the Continental Divide NST where additional compensatory mitigation was identified as required by the BLM. Mitigation requirements for NHTs will be included in the HPTPs for each state.

To meet the policy and purposes of the National Trails System Act (NTSA Sec. 9(a)), to permit a project which will not substantially interfere with the nature and purposes of the trail (NTSA Sec. 7(c)), and to safeguard the nature and purposes of the Continental Divide NST (BLM MS-6280 1.6.A.3.v.b), the BLM will apply the mitigation hierarchy to address impacts to the Continental Divide NST from this Project.

Avoidance and minimization measures to mitigate impacts on Continental Divide NST will be applied for the life of the impacts from the Project. For residual (i.e., unavoidable) effects on the

values and settings of the Continental Divide NST, which would remain after applying avoidance and minimization measures, compensatory mitigation would be required at a degree that is commensurate with the impacts. Compensatory mitigation may include projects, such as securing trail land acquisition or perpetual easements, along the impacted portion of the Continental Divide NST. All mitigation measures will be durable, additional, timely, monitored, adaptively managed, and reported upon.

The terms and conditions within the permit will include all identified Continental Divide NST - related avoidance, minimization, and compensatory mitigation measures, which may include applicant-proposed mitigation measures (e.g., design features), including the associated monitoring, adaptive management, and reporting requirements for these mitigation measures (NTSA Sec. 9(a).

The Project crosses the Continental Divide NST south of Rawlins, Wyoming in Coal Mine Draw, an area with limited existing modifications. The NST crossing also occurs in proximity to the permitted alignment for the Energy Gateway West Project along a portion of the NST relocated as mitigation for the Chokecherry-Sierra Madre Wind Farm Project.

Impacts to the Continental Divide NST include visual impacts on the trail's setting where the NST is crossed with skylined structures located on the ridges east and west of Coal Mine Draw, similar to those associated with the permitted Energy Gateway West Project. Selective mitigation measures applied to reduce these impacts include micrositing of structures on adjacent ridges, maximizing the distance between structures at the trail crossing, and limiting the construction of new access roads to the extent practicable. Specific compensatory mitigation measures will be developed based on the final design and engineering and final impacts on the NST resource.

Wilderness Characteristics Mitigation

Section 201 of FLPMA requires BLM to maintain on a continuing basis an inventory of all public lands and their resources and other values, which includes wilderness characteristics. BLM conducted an inventory for lands with wilderness characteristics as part of the process of analyzing the resources affected by the proposed Project and identified several areas along the Agency Preferred Alternative that met the criteria for lands with wilderness characteristics as described in BLM Manual 6310 (e.g., are larger than 5,000 acres), but for which BLM had not evaluated and considered for management as part of a land use planning process. BLM evaluated these newly inventoried lands with wilderness characteristics and analyzed the impacts to these areas in the Final EIS.

The Presidential Memorandum (Mitigating Impacts on Natural Development and Encouraging Related Private Investment, November 3, 2015), Secretarial Order 3330 (*Improving Mitigation Policies and Practices of the Department of the Interior*) and DOI's manual section on landscape-scale mitigation (600 DM 6) direct BLM, consistent with its legal authority, to implement landscape-scale mitigation for impacts from projects, especially for impacts to "important, scarce, and sensitive" resources, and implement mitigation through the mitigation hierarchy, i.e., generally, first seek to avoid impacts, then minimize impacts, and then compensate for impacts. This approach is considering mitigation is consistent with BLM's interim policy on mitigation (BLM Instruction Memorandum No. 2013-142), which BLM also considered for the Proposed Action. Additionally, the Presidential Memorandum on mitigation and DOI's manual section on landscape-scale mitigation direct the BLM, consistent with its legal

authority, to seek to achieve a no net loss or a net benefit standard for important, scarce, or sensitive resources.

BLM considers wilderness characteristics to be both an important and sensitive resource. Therefore, BLM is requiring the Applicant to provide compensatory mitigation for areas identified as having wilderness characteristics that will be affected by this Project, but where the BLM has not yet considered through a land use-planning process whether to manage such areas for protection. The BLM will not require compensatory mitigation for impacts on inventoried lands with wilderness characteristics units that were identified as part of a land use planning process wherein the BLM has made an affirmative management decision not to protect wilderness characteristics, unless the respective land use plan states otherwise.

Wilderness characteristics by their definition are resources that encompass lands that are roadless and predominantly natural with no or only very minor facilities so it is not possible to implement on-site mitigation for a project that involves road and major-facility construction. Residual impacts from this Project include two different types of impacts:

Areas that are directly affected by the Project footprint. In these areas, the construction of the Project would result in direct resource loss. These impacts would be calculated as follows:

Total Length of units intersected by Project x Full Corridor Width = Area Affected by Project Footprint

In addition to areas directly affected by the Project's footprint, compensatory mitigation also is required where the Project bisects an inventoried unit creating one or two units that are smaller than 5,000 acres. For these impacts, compensatory mitigation would be required for the bisected parcels that are smaller than 5,000 acres (Manual 6310.06(C)(2)(a))[3]. Mitigation is necessary because the Project's construction may create areas of lands with wilderness characteristics that no longer meet the criteria to be managed by BLM as such, and therefore for the smaller units (less than 5,000 acres) BLM faces the lost opportunity cost of not being able to make future planning decisions to manage those lands to protect those characteristics.

The Applicant will calculate the final acreage of affected lands with wilderness characteristics based on the final Project design and plan of development. To offset these impacts, BLM requires that the Applicant perform, or provide funding to perform, preservation and/or restoration actions to improve or protect the same amount of acres of wilderness characteristics as outlined below.

The preservation and/or restoration actions will consist of acquiring inholdings (either via conservation easement or fee-simple ownership) from willing sellers in designated wilderness (first priority) or wilderness study areas (second priority) or lands managed to protect wilderness characteristics in a resource management plan (third priority) within the states with units being affected by the Project. Acquisition of easements or edgeholdings to provide public access to these respective areas also would be an example of appropriate mitigation. If acquisition is used to mitigate impacts, such impacts will be mitigated on a one-to-one basis. If acquisition is infeasible, as determined by BLM in consultation with the Applicant, actions may be conducted to restore wilderness characteristics in existing wilderness and wilderness study

[3]For example, if the line bisected a 10,000 acre unit and created two areas – one 8,000 acres and one 2,000 acres – mitigation would be required to account for the smaller 2,000 acre area (less project footprint).

areas pursuant to Manual 6330—Management of BLM Wilderness Study Areas, and Manual 6340—Management of BLM Wilderness. Where restoration is used, mitigation will be required on a two-to-one basis to account for the potential uncertainty associated with the outcome of restoration activities. The BLM recognizes that a combination of preservation and restoration may be appropriate to meet the required compensatory mitigation requirements outlined above.

In either case, the wilderness characteristics benefited by the compensatory mitigation measures must be maintained, monitored, and adaptively managed, by the Applicant or an approved third party and according to BLM standards, for the duration of the impact from the Project, which BLM has determined to be minimum of 30 years (and potentially longer). Any future renewals of the right-of-way, if granted, would extend the timeline for compensatory mitigation and may necessitate additional requirements.

The BLM State Directors of the affected state(s), considering input from local BLM Field Managers, will work with the Applicant to identify the specific compensatory mitigation measures or funding that the Applicant will perform and/or fund in order to fulfill the compensatory mitigation requirements identified in this ROD, including the maintenance, monitoring, and adaptive management of the compensatory mitigation measures. It should be noted that additional NEPA and decision documents may be necessary to implement some of these compensatory mitigation measures. The details of the compensatory mitigation measures will be made publically available. The Applicant will develop a plan and provide the funding and/or begin to perform the actions identified above, prior to the BLM's issuance of the NTP.

Lower Green River Suitable Wild and Scenic River Segment

To minimize surface or visual disturbances from the towers or other facilities, the Applicant must work with the BLM Vernal Field Office and BLM Utah National Conservation Lands staff to identify the appropriate placement of Project components across the Lower Green River suitable segment before construction can be authorized.

Air Quality Mitigation

In the absence of more refined analysis, Tier 3 or better diesel equipment is required to provide a reasonable assurance that 1-hour NO_2 impacts will not exceed that National Ambient Air Quality Standard.

Monitoring and Enforcement

The BLM is responsible for ensuring compliance with all mitigation measures required in its ROD. These measures will be incorporated into the Applicant’s final POD. The final POD for construction must be reviewed and accepted by the BLM Authorized Officer before the BLM will issue any NTP for the Project other than for the short term geotechnical investigation work. The BLM also has incorporated standard terms, conditions, and stipulations into the right-of-way grant. Failure on the part of the grant holder(s) to adhere to these terms and conditions could result in various administrative actions up to and including suspension and even termination of the right-of-way grant and requirements to remove the facility and rehabilitate disturbances.

The BLM and USFS will be responsible for enforcement of the terms and conditions of the BLM’s right-of-way grant and USFS’s special use permit (collectively, “authorizations”) on federal lands during the terms of the respective authorizations. Compliance with state and local permits and authorizations also is an enforceable condition of the BLM’s right-of-way grant.

Compliance Inspection Contractor Requirements

The BLM requires the holder to provide for an environmental CIC, to monitor activities during the construction, operation, and reclamation phases of the Project and provide reports to designated BLM contacts in accordance with the approved communications plan. The Applicant will be required to provide cost recovery for the BLM's costs to review the CIC's reports and perform other tasks associated with monitoring during any phase of the Project (43 CFR 2805.16(a)).

The CIC will monitor construction activities on federal and nonfederal lands, document Project disturbance that occurs along the entire Project, and assist the Applicant in ensuring compliance with the terms and conditions of the federal authorizations and complying with the Final EIS analysis. In addition, the CIC must ensure that the Project adheres to any state and local permits that contains conditions to construct.

The CIC will supervise and support a team of compliance monitors consisting of individuals with experience with ultra-high voltage transmission construction that includes projects in the western United States as well as expertise and experience regarding the resources for which mitigation is required, including biological, cultural, and soil science expertise. The CIC is required to ensure compliance with all avoidance, minimization and mitigation commitments contained in this ROD.

Approvals developed in connection with all NTP requirements for the transmission line construction will be developed in coordination with the CIC for the Project before finalized and before any NTP is issued.

The CIC also will perform post-construction monitoring and will monitor the reclamation for the transmission line, temporary permitted areas and ancillary facilities. The CIC will maintain a Project history, develop and implement an effective communication plan including daily and weekly conference calls, a Project SharePoint site, and a record of all Project communications as well as a project close out report and transfer of records to the BLM/USFS.

The CIC's primary responsibility will be to observe all work activities, recommend methods to prevent noncompliance, and provide reports to the BLM including reports of noncompliant situations. Additional responsibilities are described in the draft POD. Any conflicting information found in the draft POD is superseded by this decision.

The BLM will review the scope of work for all CIC third-party contractors proposed to work on the Project and approve the contractor. The contractor may include EIS, biological, cultural resources, compliance, and monitoring contractors.

Appendix B1 – Bureau of Land Management Framework for Greater Sage-Grouse Mitigation Plan

This Framework, includes BLM's review/revision/and as indicated, acceptance of mitigation framework guidance provided by the Applicant utilizing the standards, principles, and technical elements of guidance, policy, and peer reviewed scientific literature currently available to the agencies. This framework will assist the Applicant in the development of a Greater Sage Grouse Mitigation Plan for the agencies review/approval prior to any NTP for the Project.

Consistent with the compensatory mitigation requirements described in Appendix B of this Record of Decision, this Framework describes the specific standards and assumptions to be used to quantify the appropriate compensatory mitigation for the Project. The Applicant will calculate the compensatory mitigation obligation per this guidance for incorporation into their offered Greater Sage-Grouse Mitigation Plan, when final design and engineering are complete.

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1.0 Introduction

1.1 Background

The Bureau of Land Management (BLM) in coordination with U.S. Fish and Wildlife Service (FWS) developed a framework for analysis of impacts to greater sage-grouse for the Energy Gateway South Transmission Project (Project) (Final Environmental Impact Statement [EIS] Appendix K, Exhibit K1: Framework for Sage-grouse Impacts Analysis for the Energy Gateway South Transmission Project, 2013 [BLM 2016]). The impact analysis framework was developed during preparation of the Final EIS to analyze potential impacts on greater sage-grouse that bear directly on the factors considered by the FWS when evaluating whether to list a species under the Endangered Species Act (ESA), and was premised on review of the threat assessment/five factor analysis that FWS conducted as part of the March 23, 2010 (75 FR 13910), listing of the sage-grouse as a Candidate species under the ESA. In support of BLM's analysis, PacifiCorp (Applicant), provided detailed information about compensatory mitigation using habitat equivalency analysis (HEA); this information can be found in the Project Final EIS Appendix K, Exhibit K2: Final: Energy Gateway South Transmission Project Greater Sage-grouse Habitat Equivalency Analysis (BLM 2016).

In response to the FWS 2010 determination that listing of the greater sage-grouse was "warranted but precluded," the BLM and U.S. Forest Service (USFS) developed a landscape-level strategy to address the threats identified in the FWS 2010 listing decision and the FWS Conservation Objectives Team Report (FWS 2013). This unprecedented science-based planning effort to conserve greater sage-grouse occurred concurrently with the National Environmental Policy Act (NEPA) process for the Project. In September 2015, the BLM and USFS announced the Records of Decision and Approved Resource Management Plans (ARMPAs) for the Great Basin Region Greater Sage-Grouse sub-regions of Idaho and Southwestern Montana, Nevada and Northeastern California, Oregon, and Utah (BLM 2015b) (available from: http://www.blm.gov/style/medialib/blm/ut/natural_resources/SageGrouse/ARMPA_appendices.Par.81455.File.dat/GB%20ROD%209.21.15_508_lowres.pdf), and for the Rocky Mountain Region, including the sub-regions of Lewiston, North Dakota, Northwest Colorado, and Wyoming (BLM 2015c) (available from: https://eplanning.blm.gov/epl-front-office/projects/lup/36511/63222/68471/RM_ROD_9.21.15_508_lowres.pdf). The Project is specifically exempted from the ARMPA decisions where co-located with the TransWest Express Transmission Project (TransWest Express), with consideration that the Project's NEPA process results could achieve mitigation standards that are consistent with the ARMPA standards referenced here.

In October 2015, the FWS announced a 12-month finding on the petitions to list greater sage-grouse and determined that listing was not warranted at the time based on review of best available science and commercial data (Docket No. FWS–R6–ES–2015–0146).

The Final EIS for the Project was developed in accordance with current relevant laws, regulations, policies, and plans including those guiding agency decisions that may have an impact on resources and their values, services, and functions. The BLM has considered all facets of mitigation (avoid, minimize, rectify, reduce or eliminate over time, and compensate) (40 CFR 1508.20), consistent with the DOI manual section on landscape-scale mitigation (600 DM

6) and the BLM's Draft Regional Mitigation Manual Section 1794 (interim policy). During the NEPA process, project siting and design, design features and additional mitigation measures to minimize impacts to resources were developed to consider the full mitigation hierarchy to avoid, minimize, rectify, or reduce impacts over time and last, to compensate for residual impacts on important, scarce, or sensitive resources. For example, the BLM's selection of the Agency Preferred Alternative involved careful routing and siting to avoid and minimize impacts on resources (e.g., residential areas, agriculture, cultural resources, and visual resources), maximize use of existing utility corridors and roads, and closely parallel existing transmission lines.

After initial impacts were identified during the NEPA process, the BLM determined whether agency-required mitigation measures were needed to avoid, minimize, or rectify or restore Project impacts. The agency-required mitigation measures that would be applied to avoid, minimize, or rectify and/or restore the Project effects are analyzed in Chapter 3 of the Final EIS and summarized in Table 2-13 (Final EIS Chapter 2). Design features and selective mitigation measures applicable to greater sage-grouse are summarized in **Table 1 in Attachment A** of this Framework. These measures comprise the first steps of the Project mitigation sequence that involves avoidance, minimization, rectification and compensatory mitigation as engineering is finalized prior to construction. **Table 1 in Attachment A** identifies where residual impacts warrant compensatory mitigation based on the impact indicator identified and the residual effects that remain after avoidance and minimization is applied. During final engineering and design, the Applicant will further demonstrate where avoidance and minimization will occur.

1.2 Mitigation Hierarchy

This section is provided in the Framework to provide background on the mitigation hierarchy that resulted from the NEPA process. During the final engineering and design phase of the Project, the Applicant will demonstrate the application of the mitigation hierarchy in the mitigation plan, specifically where avoidance and minimization has been applied. The mitigation hierarchy is described below in both a general context and in the context of the Project in particular and is mitigation that has already been identified through the NEPA process:

- **Avoidance**. Measures taken to avoid impacts altogether by not taking a certain action or parts of an action. Avoidance measures applied to the Project include reviewing each route's potential impacts on sensitive resources prior to considering the route for detailed analysis. Avoidance also includes more site-specific avoidance activities, such as those described in the design features of the Project for environmental protection and selective mitigation measures. See **Attachment A** of this Framework. It also is expected that further avoidance will occur through the Applicant's final engineering and design of the selected route. The development of the route alignments is described in Chapter 2.0 of the Final EIS; the Project was designed to avoid sensitive resources to the extent practicable.

- **Minimization**. Measures taken to minimize impacts by limiting the degree or magnitude of the action and its implementations. Minimization measures taken by the Project include, for example, actions to decrease effects on wildlife species, such as design components to lessen aerial collisions with the transmission lines and timing restrictions for construction and maintenance. Multiple environmental protection measures designed to minimize impacts have been included as part of the Project and can be found in the Applicant-committed design features and selective mitigation measures for the Project. Refer to **Attachment A** of the Framework. It also is expected that further minimization methods will be implemented through the Applicant's final engineering and design of the selected route.

- **Rectification/Reduction or Elimination of Impacts over Time**. Measures taken to rectify impacts by repairing, rehabilitating, or restoring the affected environment or by reducing or eliminating the impact over time by preservation and maintenance operations during the life of the affecting action. Rectification, reduction, and elimination measures adopted by the Project include identified design features of the Project for environmental protection and selective mitigation measures (for example, surface restoration, recontouring and reseeding disturbed work areas). Refer to **Attachment A** of this Framework.

When implementing these facets of mitigation, the BLM has prioritized opportunities to mitigate impacts at the site of the activity, in conformance with the land use plan goals and objectives, through impact avoidance, minimization, rectification, and reduction over time. When BLM has determined that additional mitigation is appropriate to address remaining impacts, it also considered appropriate compensatory mitigation to address residual impacts to important, scarce, and sensitive resources.

In general, the identified strategies to avoid, minimize, and rectify and/or restore impacts are presumed to be effective at reducing potential impacts to an acceptable level. Unavoidable (or residual) adverse impacts to important, scarce, or sensitive resources remaining after the application of the first steps of the mitigation hierarchy are considered for compensatory mitigation. **Table 1** (**Attachment A**) demonstrates the strategies to avoid, minimize, and rectify and/or restore impacts to provide context for the Framework, the focus of which is on compensatory mitigation and compensatory mitigation projects.

1.2.1 Best Management Practices

The mitigation plan shall require use of best management practices that are state-of-the-art, efficient, appropriate and practicable during implementation of compensatory mitigation projects. In so doing, it will ensure that compensatory mitigation projects are executed in a way that avoids, minimizes, rectifies, and reduces or eliminates impacts of the projects over time.

1.2.2 Impact Avoidance and Minimization Measures

The BLM's Greater Sage-grouse ARMPAs and associated RODs state:

> high voltage transmission lines would be generally avoided in PHMAs. A limited number of priority transmission lines, such as TransWest Express and portions of Gateway South that are co-located with TransWest Express, have been proposed to expand access to renewable sources of energy and to improve the reliability of the western grid. These projects have been underway for several years and are currently being analyzed under NEPA. As part of the decision-making process for those projects, conservation measures for GRSG are being analyzed in the project-specific NEPA processes, which should achieve a net conservation benefit for GRSG (BLM 2015b,c).

Although the Project was specifically exempted from the ARMPA decisions where co-located with TransWest Express, the BLM has strived through the Project's NEPA process to ensure that Project-specific mitigation is consistent with the requirements of the ARMPAs. Potential effects resulting from the construction, operation, and maintenance of the Project identified in the Final EIS include: loss of habitat, degradation of habitat, fragmentation/reduction in connectivity among habitats, interruption of greater sage-grouse movement among populations

(restricting gene flow), alteration of seasonal movements and breeding, brooding, and wintering bird behavior, decreased nest initiation/success and lower population survival, increased susceptibility to disease and predation and mortality due to collision with transmission structures, equipment, and vehicles. Potential impacts associated with operation of the Project that were identified in the Final EIS include: mortalities due to collision with transmission lines, fences, guy wires, and conductors; avoidance of occupied habitat by greater sage-grouse due to presence of tall structures; and avoidance of occupied habitat by greater sage-grouse due to electromagnetic fields. See Tables 3-98 and 3-99 of the Project Final EIS (BLM 2016). Although it is anticipated that implementation of the impact avoidance and minimization measures identified in **Attachment A** of this Framework will substantially reduce potential impacts to greater sage-grouse, it is not possible for the Project alternatives to fully avoid impacts to greater sage-grouse general habitat management areas (GHMAs) and priority habitat management areas (PHMAs) through Wyoming, Colorado, and Utah.

The Project's final Notice to Proceed (NTP) Plan of Development (POD) will include a mitigation plan that incorporates the mitigation measures identified here. The Applicant shall incorporate the specific avoidance and minimization measures found here in the final engineering and design of the Project. The mitigation plan for greater sage-grouse shall provide detail about where and how such mitigation measures were incorporated into the final engineering and design to avoid and minimize impacts to greater sage-grouse.

1.3 Framework Purpose and Objectives

In accordance with Departmental policies on mitigation requirements for large landscape-scale projects, the BLM has developed this Framework for Greater Sage-grouse Mitigation Plan for the Project (hereafter Framework) to further address avoidance, minimization, and compensatory mitigation actions and to update the framework developed for the Project.

The overall objectives of this Framework are to:

- Create a common understanding regarding application of the mitigation hierarchy and expectations of compensatory mitigation between the Applicant, the BLM, and other agencies with authorizing decisions on the principles, standards, methods, time frames, and other considerations that will guide the development of the mitigation plan for greater sage-grouse; and

- Provide clear expectations and methods for assessing the adequacy of the compensatory mitigation and the mitigation plan for greater sage-grouse.

The requirement to appropriately mitigate impacts on resources, objectives, and values, including through compensatory mitigation determined to be warranted for residual impacts (i.e., remaining unavoidable impacts), is consistent with the BLM's management responsibilities under the Federal Land Policy and Management Act (FLPMA). This Framework is consistent with Secretarial Order No. 3330 on Improving Mitigation Policies and Practices of the Department of the Interior; the Presidential Memorandum on mitigating impacts on natural resources from development of large development projects; the DOI Manual section on landscape-scale mitigation, 600 DM 6; and the BLM's interim mitigation policy (WO IM-2013-142), which directs the BLM to consider and implement appropriate mitigation (through avoidance, minimization, and compensation for impacts associated with its decisions).

On March 3, 2016, Rocky Mountain Power and TransWest Express, LLC, (the Applicants) convened a Technical Advisory Group (TAG) to review the Applicants' proposed approach to mitigating impacts to greater sage-grouse for the Energy Gateway South and TransWest Express Transmission Projects (as described in the Energy Gateway South Final EIS Appendix K [BLM 2016] and the TransWest Express Final EIS Appendix D at Appendix K [BLM 2015a]) and to promote the coordination and collaboration among the Applicants, BLM, FWS, state and other cooperating agencies and subject-matter experts. The TAG discussed the Applicants' approach to modeling direct and indirect effects on greater sage-grouse and its habitat through the HEA process. The recommendations resulting from TAG meetings are provided in the Technical Advisory Group Greater Sage-grouse Mitigation Guidance for the TransWest and Energy Gateway South Transmission Line Projects (TAG Recommendations) prepared by SWCA Environmental Consultants for Rocky Mountain Power and TransWest Express LLC, September 2016 (**Attachment C** [SWCA 2016]). BLM has reviewed and accepted the TAG Recommendations and, through this Framework, requires their implementation as a mandatory component of the HEA process. A summary of issues discussed in the TAG Recommendations is provided in **Attachment B** of this Framework.

As the name suggests, this Framework is intended primarily to structure the process of refinement of the Applicant's mitigation plan for greater sage-grouse. The Framework also discusses how the mitigation hierarchy will further be applied to address the impacts of the Project to demonstrate the application of avoidance and minimization during final engineering and design. More specifically, the Framework explains how the Applicant's greater sage-grouse mitigation plan will: (1) describe the further use of avoidance and minimization to eliminate and/or reduce direct and indirect impacts of the Project; (2) identify residual impacts; (3) identify areas where remaining (i.e., residual impacts) impacts warrant compensatory mitigation; and (4) calculate the compensatory mitigation obligation for greater sage-grouse to achieve a mitigation standard of no net loss in GHMAs in Wyoming (specific to the designated utility corridor), and a net conservation gain in PHMAs and GHMAs in Colorado and Utah (hereinafter referred to as the mitigation standard).

Even though, as indicated above, the Project was specifically exempted from the ARMPA decisions where co-located with TransWest Express, with consideration that the Project's NEPA process results could achieve mitigation standards that are consistent with ARMPA mitigation standards referenced here. In Wyoming, the ARMPA (BLM 2015c) designates a mitigation standard in Management Decision MD-SSS-4 for PHMA as follows:

> **MD-SSS-4:** Within PHMAs, specific to management for GRSG, all RMPs are amended as follows: In undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation in PHMAs, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions.

In coordination with the Wyoming Governor's Office, Wyoming Game and Fish, and the FWS, the BLM has determined that no compensatory mitigation for greater sage-grouse would be required in the Wyoming Governor's Executive Order (E.O. 2015-4) Core Area Corridor (PHMA) for direct effects. Indirect effects for greater sage-grouse extending beyond the Governor's corridor would be accounted for in the HEA process. For GHMA in Wyoming, the BLM looked to the Rawlins RMP, which requires the maintenance, restoration, or enhancement of designated BLM State Sensitive Species habitat to prevent listing under the Endangered Species Act (ESA)

in coordination and consultation with other local, state, and federal agencies and consistent with other agency plans, policies, and agreements.

In Utah, the ARMPA (BLM 2015b) mitigation standard is as follows: MA-SSS-3 (PHMA) and MA-SSS-5 (GHMA): In PHMA and GHMA, apply the following management:

> In all GRSG habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for GRSG shall be made for vegetation treatments to benefit Utah prairie dog.

In addition to requiring a net conservation gain for greater sage-grouse, the mitigation measures in the ARMPAs apply to the Project where not colocated with TransWest Express or other priority high-voltage transmission projects in Utah. In accordance with MA-SSS-3, additional mitigation measures include disturbance caps; predation, noise, tall structure, and seasonal restrictions; buffers; and required design features:

Disturbance Cap

> In PHMA, manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of (1) PHMA associated with a GRSG population area (Figure 2-2, GRSG Biologically Significant Units and Priority Habitat Management Areas [Appendix A] – referred to as BSU when coordinating across state lines) and (2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area.
>
> If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within GRSG PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within GRSG PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap.
>
> If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.

An area with disturbance is not excluded from the 3 percent until it has been restored to provide GRSG habitat. The objective of successful restoration is to provide for the needs of GRSG, as evidenced by one of the following:

- Vegetative cover is consistent with the GRSG habitat objectives and the ecological site description (Objective SSS-3), or

- Monitoring indicates the area is regularly used by GRSG to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter).

Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.

Predation

In PHMA, eliminate or minimize external food sources for corvids, particularly dumps, or waste transfer facilities. Apply best management practices (BMP) to development activities to reduce opportunities for GRSG predators (e.g., limiting food sources, nest/perches deterrents, and road kill).

Apply habitat management practices (e.g. grazing management and vegetation treatments) that decrease the effectiveness of predators.

Collaborate with applicable government entities to implement programs to control predator populations of GRSG (e.g., ravens, red fox, badgers, and raccoons).

Noise Restrictions

In PHMA, limit noise from discrete anthropogenic disturbances, whether during construction, operation, or maintenance, to not exceed 10 decibels above ambient sound levels (as available at the signing of the GRSG RMPA ROD or as first measured thereafter) at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting). Support the establishment of ambient baseline noise levels for PHMA habitat area leks.

Limit project related noise in other PHMA habitats and seasons where it will be expected to reduce functionality of habitats that support associated GRSG populations.

As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate measures will be implemented where necessary to minimize potential for noise impacts on PHMA GRSG population behavioral cycles.

Tall Structure Restrictions

In PHMA, limit the placement of permanent tall structures within GRSG breeding and nesting habitats.

For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors and ravens) that are naturally absent, or that decreases the use of an area by GRSG. A determination as to whether

something is considered a tall structure will be made based on local conditions such as existing vegetation or topography.

Seasonal Restrictions

In PHMA, in coordination with the appropriate State of Utah agency, apply seasonal restrictions during the period specified below to manage discretionary discrete anthropogenic disturbances and uses on public lands to prevent disturbance to GRSG populations and habitat during seasonal life cycle periods as follows:

- In breeding (leks), nesting and early brood-rearing habitat from Feb 15 – Jun 15
- In brood rearing habitat from Apr 15 – Aug 15
- In winter habitat from Nov 15 – Mar 15

Specific time and distance determinations will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring and long and/or heavy winter) in order to better protect GRSG, in coordination with the appropriate State of Utah agency.

Buffers

In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B, Applying Lek-Buffer Distances.

Required Design Features

In PHMA, apply the RDFs from the applicable sections identified in Appendix C, Required Design Features, when authorizing/permitting site-specific activities/projects for wildland fire management actions, travel and transportation, lands and realty, fluid minerals, nonenergy leasable minerals, coal, mineral materials, and locatable minerals (consistent with applicable law). The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable;

- An alternative RDF, state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for GRSG or its habitat;

- A specific RDF will provide no additional protection to GRSG or its habitat.

In Colorado, the ARMPA (BLM 2015c) mitigation standard is:

MD SSS-3: In all sage-grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions.

Per the BLM ARMPAs, net conservation gain is defined as the actual benefit or gain above baseline conditions.

During the NEPA process, the BLM worked with cooperating agencies and the Applicant to develop project-specific mitigation measures to avoid and minimize impacts to greater sage-grouse and their habitat (refer to **Attachment A**, **Table 1**). Final engineering and design will be completed by the Applicant after BLM issues the ROD. This Framework, including the TAG Recommendations (**Attachment C** of this Framework), sets forth the standards, principles, and technical elements to help the Applicant develop their Greater Sage-Grouse Habitat Mitigation Plan. Consistent with the compensatory mitigation requirements described in the ROD, this Framework describes the specific standards and assumptions to be used to quantify appropriate compensatory mitigation for the Project.

The Applicant shall submit its proposed greater sage-grouse mitigation plan to the BLM, and the plan will be reviewed by the BLM and appropriate cooperating agencies, including FWS, Colorado Parks and Wildlife, Utah Division of Wildlife Resources, and Wyoming Game and Fish Department. BLM will advise the Applicant of any required changes to the plan. The Applicant shall submit a final greater sage-grouse mitigation plan based on agency and cooperating agency input for the BLM authorized officer's review and approval prior to issuance of the Notice to Proceed (NTP).

2.0 Principles, Standards, and Technical Elements

The Applicant's mitigation plan shall be designed to achieve the mitigation standards using technical elements and principles and standards of mitigation to demonstrate application of avoidance, minimization, and compensatory mitigation actions based on best available science for greater sage-grouse conservation, as well as the recommendations provided through the TAG discussions (**Attachment C**). The following principles, standards, and technical elements must be considered in the mitigation plan for greater sage-grouse specific to the Project.

2.1 Planning for Compensatory Mitigation

2.1.1 Cooperator Participation

The Applicant shall ensure that the mitigation plan is developed through effective early and frequent communication and coordination with the BLM and cooperating agencies. The mitigation plan will be developed in coordination with an appropriate group of cooperators to ensure consistency with the impacts described in the Project's Final EIS and mitigation requirements described in the Project's ROD. BLM will confer with those cooperators prior to final approval of the mitigation plan by the BLM's Authorized Officer and issuance of a NTP. The Applicant shall prepare a detailed schedule for development of the mitigation plan that identifies

key opportunities for cooperator review and input and includes regular calls and meetings to ensure that coordination occurs.

2.1.2 Landscape-scale Approach and Compensatory Mitigation Siting

The Applicant will consider baseline conditions and reasonably foreseeable impacts, including impacts that extend beyond BLM administrative boundaries, to provide context and trends for greater sage-grouse populations and habitat functions at an appropriate scale to planned compensatory mitigation projects. A landscape-scale approach to mitigation for greater sage-grouse, in consideration of local plans or state laws that may direct the locations where compensatory mitigation should be sited, allows for the identification of the most effective compensatory mitigation sites. This approach would address opportunities and threats to the species based on regional considerations that would provide for the mitigation standard.

The Applicant's mitigation plan for greater sage-grouse shall not site compensatory mitigation projects in areas that are directly or indirectly impacted by the transmission lines and associated facilities or in areas where the success of the compensatory mitigation project will be diminished over time as a result of incompatible land uses or authorizations. The Applicant shall coordinate with local experts to determine appropriate placement of compensatory mitigation projects on the landscape to ensure that benefits of the project are not voided due to placement of the project too close to project-level direct and indirect impacts. The Applicant shall consider compensatory mitigation projects where the impact of the authorization can best be mitigated regardless of land ownership. In coordination with the cooperating agencies, the Applicant shall provide a diverse portfolio of compensatory mitigation projects across land ownerships except where opportunities on private or non-federal lands are not readily available or where federal land management policies require that impacts to public lands be mitigated on public lands.

2.2 Principles of Compensatory Mitigation

2.2.1 Duration

The mitigation plan shall clearly articulate how the compensatory mitigation projects will achieve targeted biological conditions in a timeframe commensurate to and proportional with the biological impacts to be offset. Such impacts may extend beyond the term of the right-of-way grant.

2.2.2 Durability

The mitigation plan for greater sage-grouse shall include detail to demonstrate that resource, administrative, and financial assurances are sufficient and adequately described in relation to compensatory mitigation measures and compensatory mitigation projects.

1. Resource considerations for greater sage-grouse for durability ensure that compensatory mitigation measures and/or compensatory mitigation projects can achieve and maintain desired outcomes and be resilient to foreseeable change agents (i.e. wildland fire, invasive species, climate change) for the duration of the Project's impacts.

2. Administrative considerations include actions that limit or exclude land use activities that are incompatible with compensatory mitigation measures and compensatory mitigation projects (e.g., permit terms and conditions, land use planning allocation adjustments, and

special designations on public lands; deed restrictions and/or conservation easements on private lands).

3. Financial considerations for durability include assurances that financing shall be sufficient to maintain, monitor, and implement adaptive management for compensatory mitigation measures and/or compensatory mitigation projects for the duration of the impacts from the Project. The Project is requesting a 30-year permit for right-of-way; however, this can be renewed at the end of the permit term. The amount of financing provided to deliver the entire compensatory mitigation action (interim and perpetual actions) shall be determined by an appropriate cost-analysis, such as Property Analysis Record or an equivalent method. The source or sources of financing adequate for the interim and perpetual/long-term operation, management, monitoring, and documentation associated with compensatory mitigation shall be identified and secured. All funds shall be held in a dedicated account and shall be managed based on agreed terms to ensure that compensatory mitigation outcomes will be attained and maintained as necessary. When funds are due, management terms will be determined by the state and federal permitting processes and any third-party (e.g., mitigation bank or in-lieu fee) agreement conditions.

The mitigation plan shall provide sufficient detail that demonstrates the obligations of the responsible party (i.e., through financial assurances) to ensure that a compensatory mitigation measure or compensatory mitigation project will maintain the durability for which it was intended. The responsible party must ensure that any corrective actions needed to address the loss of durability are carried out in accordance with the mitigation plan, except in situations where in its sole discretion the BLM, in coordination with the Applicant, determines that the loss of durability was the direct result of extreme weather, natural disasters, regulations or governmental restrictions or other force majeure event. Note that wildfire is not considered to be a force majeure event due to its reasonably predictable occurrence interval, which should be identified during site selection and evaluation and accounted for under risk and uncertainty.

2.2.3 Mitigation Measures and Project Outcomes, Performance Standards, Metrics, and Accounting

The mitigation plan for the Project must use the HEA, which is a “science-based, peer-reviewed method for quantifying interim and permanent habitat injuries, measured as a loss of habitat services from pre-disturbance conditions, and scaling compensatory habitat requirements to those injuries” (Energy Gateway South Transmission Project Final EIS Exhibit K2 in Appendix K [BLM 2016]).

The TAG Recommendations report (Exhibit 1 [SWCA 2016]) documents the technical input and guidance provided by the TAG to the Applicant on the company’s proposed HEA model and its use to quantify direct and indirect effects to greater sage-grouse from the Project for the purposes of determining appropriate compensatory mitigation. The TAG worked closely with the Applicant and assessed the Greater Sage-Grouse Habitat Equivalency Analysis Plan as documented in the Project’s Final EIS (Exhibit K2 in Appendix K; BLM 2016), identified potential issues, and provided guidance to the Applicant about ways to address the issues. The TAG members concluded that the Applicant’s Greater Sage-Grouse Habitat Equivalency Analysis Plan was, in most respects, adequate to quantify Project-level direct effects and the mitigation required to compensate for those impacts using the HEA. The Project’s indirect effects were largely not accounted for in the HEA. Issues identified during the TAG discussions are included in **Attachment B** (Summary of TAG Issues). BLM has reviewed the TAG Recommendations

(**Attachment C**) and determined that the mitigation plan must conform to the additional guidance contained in this document.

The mitigation plan shall identify in detail a suite of compensatory mitigation projects that, based on best-available science, are expected to deliver the expected results, are reasonably certain to provide the greatest benefits to greater sage-grouse, and are measurable. The Applicant shall work with the BLM and cooperating agencies, to identify site-specific compensatory mitigation projects and to develop goals and objectives that are specific to the compensatory mitigation projects, are science and habitat based, and are measurable.

For greater sage-grouse, the BLM Rawlins, Wyoming Field Office RMP special status species habitat objective supports a mitigation standard of no net loss where projects are located in GHMA. The BLM is requiring as a condition of this right-of-way grant that the Applicant must achieve a standard of net conservation benefit for greater sage-grouse PHMA in all states and GHMA in Colorado and Utah and a no net loss in GHMA in Wyoming. Additionally, the BLM is requiring that the Applicant's mitigation plan identify performance standards that will be used to monitor and assess the effectiveness of the applied compensatory mitigation measures and compensatory mitigation projects in achieving the mitigation standard.

The plan shall further describe how the compensatory mitigation projects' metrics through the HEA and accounting systems will be used to document achievement of the mitigation standard. For accountability purposes, a reporting system will be developed to track and document progress towards attainment of the mitigation standard.

The HEA, as presented in detail in the Project's Final EIS (BLM 2016), provides a way to quantify habitat services using a metric that represents the functionality or quality of habitat. HEA uses a service-to-service approach to scaling and does not assume a one-to-one trade-off in habitat acres. The HEA: (1) quantifies current habitat services provided in a project area or landscape (commonly referred to as the baseline habitat service level); (2) quantifies the interim and permanent injuries to the baseline habitat service level; and (3) determines appropriately scaled restoration and conservation actions to offset habitat services lost as a result of project impacts. The HEA will be updated in the mitigation plan to incorporate the TAG Recommendations to address direct and indirect effects. Metrics that are comparable or the same across jurisdictional boundaries shall be used in order to allow for more meaningful exchanges in a landscape context.

The FWS and BLM Whitepaper (2015) identifies and describes three indirect effects of transmission lines on greater sage-grouse: (1) behavioral avoidance (reduced use), (2) increased avian presence and predation, and (3) decreased productivity and survival. Because the latter two effects have the same mechanism (i.e., increased predator presence and predation affecting vital rates including productivity and survival) they were combined. Ultimately, the methods to calculate indirect effects due to behavioral avoidance and decreased productivity and survival through the HEA process were incorporated in the TAG Recommendations (Exhibit 1 [SWCA 2016]).

The BLM has required tubular steel H-frame structures for 11 miles of greater sage-grouse habitat in Colorado to reduce raptor and raven perching and nesting opportunities where there is no existing above-ground transmission-related infrastructure. Due to the reduced number of horizontal cross arms in comparison to the lattice structure, tubular steel H-frame structures may be more easily managed (e.g., through constructing perch deterrents, detecting and removing nests, etc.) to discourage avian predators from perching and nesting. Nevertheless,

the BLM does not have evidence indicating that tubular steel H-frame structures would completely eliminate raptor and raven perching and nesting opportunities and associated indirect effects. In the absence of information from rigorous scientific studies on this topic, it is uncertain whether the use of tubular steel H-frame structures would provide a conservation benefit and effectively offset indirect effects of transmission lines on greater sage-grouse. The BLM encourages the development of scientific research that includes a rigorous experimental design and employs robust inferential statistics to address the effectiveness of transmission tower designs (tubular steel H-frame structures in particular or monopole structures) to reduce indirect effects due to avian predator perching and nesting (i.e., decreased productivity and survival). The BLM would support inclusion of information from innovative research and new scientific literature on this topic to update and modify the HEA model. In coordination with BLM, FWS, and other technical experts, the Applicant could enlist a third party to initiate relevant research on this topic, including review of existing data, for consideration in revising the HEA model process and mitigation plan.

The mitigation plan shall include an accounting system that tracks credits and debits. The accounting systems will foster transparency, accountability, and credibility and facilitate connections between compensatory mitigation providers at the lowest transaction costs. Credits from compensatory mitigation projects must be reasonably likely to deliver the expected conservation benefits, i.e., mitigation credits (refer to the Durability section). As compensatory mitigation projects are completed, the BLM will issue credit releases signifying fulfillment of compensatory mitigation obligations associated with the Project. Phased credit releases may be provided based on both ecological and administrative performance. Compensatory mitigation projects requiring large commitments may be considered for greater credit values and potential future credits related to similar impacts. The metrics used in the HEA must tie back to the indicators of greater sage-grouse populations and habitats affected by the Project and clearly show the conservation benefit to greater sage-grouse and the values, services, and functions of greater sage-grouse habitats where compensatory mitigation projects are applied.

2.2.4 Effectiveness Monitoring

The mitigation plan shall identify the type, extent, and duration of effectiveness monitoring for mitigation measures, as guided by the degree of uncertainty associated with a mitigation measure, the amount and type of the mitigation measure, and the potential need for adaptive management. The mitigation plan will identify the party responsible for conducting effectiveness monitoring and, if necessary, the Applicant could enter into a formal and binding agreement with the BLM or another entity to conduct the effectiveness monitoring. Final approval of a responsible party other than the Applicant will be determined by the decision-making agency. The financial cost of implementation and effectiveness monitoring will be the obligation of the Applicant or their delegated agent(s) or assignees. These costs will be included in the determination of the final amount of compensatory mitigation. Monitoring does not count as compensatory mitigation but is an essential component of a mitigation plan to provide assurances.

The mitigation plan shall identify and provide science-based, agency-approved protocols for monitoring the effectiveness of greater sage-grouse compensatory mitigation measures and compensatory mitigation projects, to ensure that the mitigation standard is being achieved as appropriate. Effectiveness monitoring shall be used (1) to verify whether required and desired outcomes of the greater sage-grouse compensatory mitigation efforts are being achieved, and/or (2) to ensure that adaptive management requirements are being implemented to ensure mitigation standards are being achieved. It is essential that a detailed monitoring plan be

included as a component of the mitigation plan and that the monitoring plan includes the type, extent, and duration of effectiveness monitoring for the compensatory mitigation measures and compensatory mitigation projects. Effectiveness monitoring may be guided by the type of compensatory mitigation project, level of uncertainty specific to the compensatory mitigation measure or compensatory mitigation project, and the potential for adaptive management. Monitoring obligations will be defined for the life of the project to ensure that mitigation standards are being achieved.

2.2.5 Adaptive Management

The mitigation plan shall include a thorough adaptive management plan that identifies provisions to respond to lessons learned in the scientific community based on research, implemented compensatory mitigation measures and projects, and associated effectiveness monitoring. An adaptive management program should provide early indication of potential problems and direction on corrective actions to ensure that compensatory mitigation projects are leading towards achieving objectives for the project and mitigation standards. Monitoring of greater sage-grouse habitat structure, processes, and function at the onset of restoration or enhancement can provide the basis for an early indication of potential problems. An adaptive management process that incorporates process-oriented monitoring to evaluate specific components of greater sage-grouse habitat may aid in identifying the source of any problems and allow for corrective actions to be taken. Monitoring and control of noxious weeds and other invasive plant species shall be included as part of the adaptive management program. An effective adaptive management plan and associated science-based monitoring will minimize risk and uncertainty.

2.2.6 Reporting

The mitigation plan shall clearly articulate reporting methods and timeframes for preparation and submission of periodic reports (e.g., quarterly, bi-annual, annual) to the appropriate BLM offices on the implementation and effectiveness of the compensatory mitigation measures and compensatory mitigation projects. Monitoring reports shall include written summaries of implementation actions taken, effectiveness monitoring data verifying that impact avoidance and minimization measures and compensatory mitigation projects are being implemented as required by the ROD and that desired outcomes are being achieved. Reporting will help determine if compensatory mitigation projects are leading towards fulfillment of the mitigation standard and will identify application of adaptive management strategies at the project level to ensure that adaptive management is being implemented appropriately. Reporting requirements will be used by the BLM to respond to data and information requests, determine if the responsible party needs to complete any necessary corrective actions or adaptive management in order to achieve the mitigation standards for greater sage-grouse habitat, and ensure compliance with the mitigation plan.

2.2.7 Responsible Parties

The mitigation plan shall clearly identify the responsible parties who are accountable for fulfilling all aspects of the greater sage-grouse mitigation obligations including ensuring the durability and effectiveness of impact avoidance and minimization measures and compensatory mitigation projects, achieving the desired mitigation measures' outcomes, and complying with monitoring, adaptive management and reporting. Responsible parties may include state and federal agencies, the Applicant, and third parties; and responsibilities may be assigned among the

responsible parties depending on their involvement and obligations to the application of mitigation efforts.

2.2.8 Best Available Science

The mitigation plan shall incorporate best available science (e.g., peer-reviewed research and methods, scientifically robust monitoring data and modeling results, well-documented case studies) and science-based monitoring protocols and methods for identifying compensatory mitigation sites, evaluating compensatory mitigation projects, and assessing habitat-based functions (e.g., rapid assessment procedures, remote sensing). In order for the Applicant to meet the mitigation standard, the mitigation plan shall provide detail on the level and types of scientific monitoring and inventory to be implemented to inform and evaluate sites for compensatory mitigation, document the effectiveness of the compensatory mitigation projects, identify additional maintenance needs to ensure the compensatory mitigation projects are meeting their objectives, and identify needs for adaptive management actions. Monitoring and inventorying shall not constitute compensatory mitigation for greater sage-grouse but they are an essential component of the mitigation plan.

2.2.9 Managing Risk and Uncertainty

The mitigation plan shall identify the risks and uncertainties that exist when predicting the effectiveness of compensatory mitigation projects. Risk and uncertainty shall be considered in the HEA model and areas where adjustments are made to the model to account for uncertainty shall be clearly identified. Implementation and monitoring of the compensatory mitigation projects shall ensure that robust monitoring protocols are established. Such protocols shall include well-defined management benchmarks with trigger points that identify when management strategies for a particular site need to be evaluated. Compensatory mitigation projects need to evaluate risks specific to a site and the compensatory mitigation plan shall consider those risks when evaluating a site for compensatory mitigation (e.g., risks associated with treating a sagebrush site to improve perennial grasses and forbs where there is a component of cheatgrass). Areas of uncertainty specific to greater sage-grouse include the effects of climate change, lack of robust information on population connectivity, and lack of understanding of the processes necessary to restore sagebrush communities. Risk and uncertainty in a compensatory mitigation project could result in credit reversals and possibly non-compliance with the mitigation standard.

The mitigation plan shall also consider risk management tools that could be implemented to minimize risk and uncertainty (see the Durability section) at the compensatory mitigation site. Such tools could include using adaptive management strategies, designing project features to minimize edge effects or risks from adjacent land uses or authorizations, devising a credit release schedule that only allows credits to be released when it has been documented that specific performance criteria have been met, and/or establishing a reserve credit account to spread the risk among multiple mitigation providers thereby providing additional assurance that the goals and objectives for the compensatory mitigation project are achieved.

2.3 Key Attributes of Compensatory Mitigation

The mitigation plan shall demonstrate how the compensatory mitigation projects are timely in their implementation and provide additional habitat value relative to baseline conditions expected under existing management and thereby ensure that the compensatory mitigation projects achieve the mitigation standard for the Project.

2.3.1 Reasonable Relationship

The mitigation plan shall provide mitigation options for habitat restoration and enhancement and conservation measures that are reasonably related and proportional to the residual impacts associated with the Project. Compensatory mitigation projects identified in the plan will be evaluated by the BLM and appropriate cooperators to ensure that the projects are achieving the maximum benefit to greater sage-grouse habitat and are proportional to the effects of the Project for which compensatory mitigation is being implemented. Proportionality includes the quality of the habitat at the site impacted by the project and at the compensatory mitigation site, the timeliness of the mitigation, the risk of failure, and the mitigation standard.

2.3.2 Timeliness

The mitigation plan will identify and present opportunities to mitigate for temporal losses (timing of impacts relative to timing of mitigation) through opportunities for preservation, use of higher mitigation ratios, etc. Some temporal credit consideration may be appropriate for contributions to substantively accelerated management actions on a case-by-case basis where benefits can be quantified. Some credit consideration also may be provided for the acquisition and preservation of an important site, if greater sage-grouse habitat resources in that site are under imminent threat of loss. The mitigation plan will provide detail that identifies an appropriate level of timeliness and clearly demonstrates when each compensatory mitigation project's desired outcome will be achieved. The BLM prefers to have compensatory mitigation precede project disturbance and have compensatory mitigation outcomes be achieved (or making progress towards achievement) in advance of project level impacts on greater sage-grouse; however, this determination will consider the urgency of the compensatory mitigation needs, the magnitude or type of the compensatory mitigation measure or project, and the financial ability of the Applicant. The mitigation plan will account for the increased uncertainty and the time-value associated with a delay in benefits between implementation of a mitigation measure and/or a compensatory mitigation project and full performance and achievement of the compensatory mitigation measure or project's objectives.

2.3.3 Baseline and Additionality

The mitigation plan shall provide sufficient detail on how compensatory mitigation measures and compensatory mitigation projects will be evaluated to demonstrate a direct improvement to the baseline of greater sage-grouse habitat conditions and function. Compensatory mitigation must be demonstrably new as a direct result of implementing the compensatory mitigation project, and establish that the benefit achieved would not have occurred without the compensatory mitigation. The plan must identify an evaluation process to assess a compensatory mitigation site's baseline conditions and associated greater sage-grouse habitat values at any given point in time, against which the conservation actions will be measured to determine ecological uplift or additionality.

Compensatory mitigation projects must provide benefits to greater sage-grouse habitat and functionality beyond those that would be achieved under other applicable regulations and/or local land use management plans. The mitigation plan will evaluate specific compensatory mitigation projects and demonstrate how the project(s) will result in an ecological uplift to the baseline condition and are in addition to existing and/or funded conservation investments, or foreseeably expected investments that would benefit the same mitigation site.

Corrective actions within greater sage-grouse habitat where management has been applied through local plans and actions but is not meeting objectives would not meet the requirements for additionality that must be provided by the compensatory mitigation projects. Also, compensatory mitigation projects that merely maintain existing conditions on sites proposed for compensatory mitigation (even if such sites are meeting greater sage-grouse habitat needs) are not providing offsets to the impacts of the Project and would not provide additionality toward meeting the mitigation standard. For example, acquisition and protection of a compensatory mitigation site for conservation of greater sage-grouse habitat may not result in adequate mitigation to meet the mitigation standards; however, additional restoration and enhancement actions to improve the habitat conditions of the site likely would result in no net loss or net conservation gain of habitat values.

2.4 Summary of Key Components of a Mitigation Plan

The BLM presents the information in this Framework as the minimum necessary to meet the expectations for a mitigation plan. In summary, at a minimum, the Applicant's mitigation plan for greater sage-grouse shall include the following components of compensatory mitigation projects to ensure consistency with DOI Manual 600 DM 6 (Landscape-Scale Mitigation Policy):

- Type of resource(s) and its value(s), service(s), and function(s), and amounts(s) of such resource(s) to be provided (usually expressed in acres or some other physical measure), the method of compensation (restoration, establishment, enhancement, preservation), and the manner in which a landscape-scale approach has been considered.
- The methodology used to determine the expected debits and credits and mitigation ratios applied (as applicable).
- Factors considered during the compensatory site selection process.
- Compensatory mitigation site protection instruments to ensure resource and administrative durability of the measure.
- Baseline information and the demonstrated additionality of the measure.
- The mitigation value of such resources, including a rationale (e.g., accounting system with metrics and methods) for such a determination.
- A mitigation work plan, including the geographic boundaries of each compensatory mitigation project, construction methods, timing, responsible party(ies) and other considerations.
- A maintenance plan.
- Performance standards to determine whether a compensatory mitigation measure has achieved its intended outcome.
- Monitoring requirements.
- Long-term management.
- Adaptive management commitments.

- Financial assurance provisions sufficient to ensure, with a high degree of confidence, that a compensatory mitigation measure will achieve and maintain its intended outcome, in accordance with the compensatory mitigation measure's performance standards.

- Additional information provided as necessary to determine appropriateness, practicability, and equivalency of compensatory mitigation projects, particularly as they related to the principles, standards, and technical elements described above.

In addition to the above, the mitigation plan shall include:

- Description of the methodology to determine the expected debits and credits based on the HEA and TAG Recommendations (Exhibit 1 [SWCA 2016]) related to: (1) quantification of baseline conditions, (2) quantification of habitat service losses for direct and indirect effects, and (3) guidance regarding application of results to a mitigation package.

3.0 Implementation, Management, and Monitoring

Implementation, management, and monitoring are crucial components of the mitigation plan. Preparation of the final comprehensive mitigation plan by the Applicant shall involve frequent and timely discussions, collaboration, and coordination with the BLM and other state and federal cooperators. Involvement of appropriate county, state, and federal agencies with jurisdiction over the Project will ensure that the mitigation plan is sufficient and consistent with applicable laws and government policies.

The mitigation plan shall include a detailed section that outlines a schedule and sequence for implementing restoration of temporary and permanent habitat disturbances within greater sage-grouse PHMAs and GHMAs, identifies compensatory mitigation project types, and describes specific approaches for securing appropriate compensatory mitigation sites. The mitigation plan shall identify additional needs for compliance with NEPA or other state or federal regulatory requirements for implementation of compensatory mitigation projects.

The Applicant will work in coordination with cooperating agencies to establish timeframes for when each compensatory mitigation action is expected to attain its full mitigation credit (e.g., restoration or enhancement of habitat values, land acquisition) as required to compensate for Project impacts.

The final mitigation plan will provide an overall monitoring and management plan for compensatory mitigation projects. At a minimum, the mitigation plan shall identify locations where Project impact avoidance and minimization measures (identified during the NEPA process) will be applied and locations for site-specific compensatory mitigation projects. The monitoring and management plan will at a minimum:

1. Identify distinct conservation actions (including identification of specific mitigation goals and objectives, requirements for NEPA or other state and federal permits, laws or regulations),

2. Provide a general design concept, identification of a general watershed location for the project, site design plans,

3. Develop ecological performance standards that target sagebrush habitat functions,

4. Develop an implementation plan detailing site acquisition (if appropriate) and treatment methods,

5. Identify methods for measuring or assessing habitat-based functions (e.g., science-based rapid assessment procedures, remote sensing),

6. Establish benchmark standards with triggers for management to identify when implementation strategies need to be evaluated for effectiveness and when adaptive management may need to occur, and

7. Establish a certification process that a site meets the required mitigation objectives.

The mitigation plan shall provide for a detailed monitoring report that describes the monitoring regime and methods that will be used to assess the attainment of targeted outcomes of the compensatory mitigation projects over the life of the Project or other appropriate duration. The Applicant shall be responsible for monitoring and reporting to the BLM and other cooperating agencies to confirm compensatory mitigation outcomes are being achieved. Monitoring, a critical component of adaptive management, will identify when resource outcomes are not being achieved and when remedial actions need to be developed and implemented to ensure compensatory mitigation projects are progressing towards meeting the mitigation standard. An effective monitoring program with established science-based protocols approved by the BLM in coordination with cooperators shall be identified so that monitoring begins at the onset of implementation.

The mitigation plan shall also identify on-going maintenance actions needed to ensure that compensatory mitigation projects continue to meet the mitigation standard for the Project.

4.0 Evaluating the Mitigation Plan

The BLM will continue to work with cooperating agencies to evaluate the Project's mitigation plan in light of the analysis, mitigation measures, and Framework provided in the Project Final EIS and ROD to ensure, with a high level of certainty, that the mitigation standard for the Project will be achieved. The BLM will assess the mitigation plan to ensure that it meets the expectations described in this Framework. The FWS evaluates whether energy and infrastructure projects are consistent with the Conservation Objective Team (COT) Report and the Sage-grouse Range-wide Mitigation Framework. The BLM will work with FWS to assess the detailed mitigation plan for the Project using the COT checklist based on final engineering and design.

5.0 Contributors and Coordination

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7.0 Glossary

For terms identified throughout this Framework, source documents should be fully consulted for full definitions and understanding of the terms provided.

Adaptive Management – A type of natural resource management in which decisions are made as part of an ongoing science-based process. Adaptive management involves testing, monitoring, and evaluating applied strategies and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify management policy, strategies, and practices.

Additionality – A compensatory mitigation measure is "additional" when the benefits of compensatory mitigation measure improve upon the baseline conditions of the impacted resources and their values, services, and functions in a manner that is demonstrably new and would not have occurred without the compensatory mitigation measure. Mitigation actions must also exceed what is otherwise required by federal, state, and local regulations.

Avoidance Mitigation – Avoidance of an impact altogether by not taking a certain action or parts of an action (may also include, for example avoidance by moving the proposed action to a different time or locations (40 CFR 1508.20).

Baseline – The existing condition of a defined area or resource that can be quantified by an appropriate measure. During environmental reviews, the baseline is considered the affected environment at the time the review begins and is used to compare predictions of the effects of the proposed action or a reasonable range of alternatives.

Best Management Practices (BMPs) – A suite of techniques that guide or may be applied to management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a planning decision unless the plans specify that they are mandatory.

Collaboration – A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands. Collaboration may take place with any interested parties, whether or not they are a cooperating agency.

Compensatory Mitigation – Compensation for an impact by replacing or providing substitute resources or environments (40 CFR 1508.20). 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 through the restoration, establishment, enhancement, or preservation of resources and their values, services, and functions. Compensatory mitigation takes one of three forms: (1) permittee-responsible mitigation, (2) mitigation bank, or (3) in-lieu-fee mitigation. Implementing and monitoring compensatory mitigation also involve the following key concepts:

> **Ecological Durability** – Benefits from compensatory mitigation projects on compensatory mitigation sites persisting and influencing the landscape for as long as or longer than the projected impacts will negatively affect greater sage-grouse.

Protective Durability – Protection of compensatory mitigation sites from future and conflicting land uses or disturbances for as long as or longer than the projected impacts will negatively affect greater sage-grouse.

Projects – Specific, on-the-ground actions (mitigation measures) to improve habitats (e.g., chemical vegetation treatments).

Sites – The durable areas where compensatory mitigation projects will occur.

Reversals – Damage to functioning compensatory mitigation sites that may be caused by natural disturbances (unintentional reversal, such as wildfire) or anthropogenic disturbances (intentional reversal, such as development) which shorten the intended duration of compensatory mitigation.

Compensatory Mitigation Projects – The restoration, creation, enhancement, or preservation of impacted resources (adopted and modified from 33 CFR, Part 332), such as on-the-ground actions to improve or protect habitats (e.g., chemical vegetation treatments, land acquisitions, and conservation easements).

Durability – A compensatory mitigation measure is "durable" when the effectiveness of the measure is sustained for the duration of the associated impacts (including direct and indirect impacts) of the authorized action.

General Habitat Management Area (GHMA) – BLM-administered lands where some special management will apply to sustain sage-grouse populations; areas of occupied seasonal or year-round habitat outside of priority habitat management areas.

In-kind Mitigation – Compensation that consists of replacing or substituting resources that are the same type and kind as those being impacted.

In-lieu-fee Mitigation – Payment of funds to the Bureau of Land Management or a natural resource management agency, foundation, or other appropriate organization for mitigation projects or activities that address project impacts.

Landscape – 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 interacting elements that are relevant and meaningful in the management context.

Landscape-scale Approach – Landscape-scale approach applies the mitigation hierarchy for impacts to resources and their values, services, and functions at the relevant scale. The approach identifies the needs and baseline conditions of targeted resources and their values, services, and functions, reasonably foreseeable impacts, cumulative impacts of past and likely projected disturbance to those resources, and future disturbance trends.

Minimization Mitigation – Minimization of an impact by limiting the degree or magnitude of the action and its implementation (40 CFR 1508.20).

Mitigation – The Council on Environmental Quality defined mitigation to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing or eliminating impacts over time, and compensating for remaining unavoidable impacts.

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.

Net Conservation Gain – The actual benefit or gain above baseline conditions. Actions that result in habitat loss and degradation include those identified as threats that contribute to sage-grouse disturbance as identified by the USFWS in its 2010 listing decision (75 FR 13910).

Notice to Proceed – A notification sent to a project contractor indicating that project work, subject to the conditions of the contract, can officially begin. The Notice to Proceed date typically serves as the project start date.

Priority Habitat Management Area (PHMA) – BLM-administered lands identified as having the highest value to maintaining sustainable sage-grouse populations. Areas of PHMA largely coincide with areas identified as priority areas for conservation in the USFWS COT Report. These areas include breeding, late brood-rearing and winter concentration areas and migration or connectivity corridors.

Rectification Mitigation – Rectification of an impact by repairing, rehabilitating, or restoring the affected environment (40 CFR 1508.20).

Reduction or Elimination Mitigation – Reduction or elimination of an impact over time by preservation and maintenance operations during the life of the action (40 CFR 1508.20).

Residual Impact – An impact from a land use authorization that remains after applying avoidance, minimization, rectification, and reduction/elimination measures; also referred to as “unavoidable impacts”.

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Attachment A – Energy Gateway South Transmission Project Mitigation Strategy Table

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Table 1. Mitigation Strategy for Greater Sage-Grouse

Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative)[2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
▪ Loss of sage-grouse habitat through direct habitat conversion and as a result of avoidance behavior ▪ Loss and degradation of sage-grouse habitat quality and function	▪ The Project crosses the following habitat: • Wyoming: ○ 141 miles of general habitat and transmission line corridors designated in WY EO 2011-5 ○ 18 miles of habitat within 4 miles of leks located in core areas or priority habitat ○ 52 miles of habitat within 4 miles of leks located outside core areas or priority habitat • Colorado: ○ 29 miles of core areas or priority habitat ○ 55 miles of general habitat ○ 34 miles of habitat within 4 miles of leks located in core areas or priority habitat • Utah: ○ 23 miles of core areas or priority habitat ○ 3 miles of habitat within 4 miles of leks located in core areas or priority habitat	▪ None	▪ **Design Feature 1 (Minimization Clearing)**. Vegetation would be left in place wherever possible where recontouring is not required. This would minimize disturbance to habitat from Project activities. ▪ **Design Feature 18 (Overland Access)**. Grading would be minimized by driving overland in areas approved in advance by the land-management agency in predesignated work areas whenever possible. ▪ **Design Feature 26 (Vehicle Access Restriction)**. All construction vehicle movement would be restricted to predesignated access, contractor acquired access, public roads, or approved overland travel. This would minimize disturbance to habitat from excess overland travel and the associated potential spread of noxious weeds and an increase in the risk of wildfire. ▪ **Design Feature 27 (Construction Activity Access Restriction)**. All construction vehicle movement would be contained in a predetermined area. This would minimize disturbance to wildlife and wildlife habitat from construction activities and minimize risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant community composition that can increase the frequency and intensity of fire. ▪ **Selective Mitigation Measure 13 (Overland Access)**. Drive-and-crush (vehicular travel to access a site without significantly modifying the landscape) and/or clear-and-cut travel (removal of vegetation to provide suitable access for equipment) would occur in areas where no grading would be needed to access work areas. This would reduce the amount of ground-disturbing activities (e.g., surface soil removal, vegetation cropping/cutting) landscape modification, risk of introduction of	▪ **Design Feature 2 (Surface Recontouring and Reclamation)**. Areas subject to ground disturbance would be recontoured and reclaimed as required by the landowner or land-management agency. This would generally include reclamation of disturbed areas by establishing stable contours, spreading stockpiled topsoil, and revegetation using a seed mix appropriate for the environmental conditions in which the disturbance has occurred (approved by the Bureau of Land Management [BLM] or U.S. Forest Service [USFS], as appropriate, or as negotiated by individual landowners). A Reclamation, Revegetation, and Monitoring Framework Plan that includes site-specific methods (e.g., topsoil stripping and storage, timing of reclamation activities, seed mixes, monitoring methods, standards for reclamation success, bond release criteria, etc.) would be included in the Plan of Development (POD). This would minimize the temporal scope of disturbance, decrease the likelihood that a disturbance area would be colonized by invasive species, and provide the best opportunity for disturbed areas to provide habitat.	▪ High to low residual effects (impacts would be high in priority habitat management area [PHMA] within 4 miles of leks, moderate outside PHMA within 4 miles of leks, and low in general habitat management area [GHMA] and WY EO transmission line corridors). ▪ Loss of habitat through direct habitat conversion and as a result of avoidance behavior and loss and degradation of habitat quality and function would be minimized through limiting vegetation clearing (Design Feature 1), using overland access (Design Feature 18, Selective Mitigation Measure 13), minimizing the spatial extent of construction activities (Design Features 26 and 27), and reclamation (Design Feature 2), but long-term habitat loss and degradation would occur in areas occupied by and adjacent to transmission structures, new access roads, and other Project features for the life of the Project.	▪ Yes. The nature and extent of residual effects associated with disturbance from Project activities during construction that were identified through the National Environmental Policy Act of 1969 (NEPA) process warrant compensatory mitigation to mitigate for loss and degradation of sage-grouse habitat. Without compensatory mitigation, the residual effects would inhibit achieving BLM approved resource management plan amendment (ARMPA) objectives and, therefore, warrant compensatory mitigation.	▪ Standard: Net conservation gain ▪ Objective 1: To compensate for loss and degradation of habitat ▪ Measure(s): To be determined in the Greater Sage-Grouse Compensatory Mitigation Plan using the Habitat Equivalency Analysis

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
			invasive weeds, and habitat fragmentation. Modification of sagebrush vegetation communities, which provide necessary cover and forage for habitat suitability, resulting from vegetation clearing, would be limited to the extent practicable in sage-grouse habitat.				
▪ Mortality due to electrocution, collisions with transmission line infrastructure, and collisions with equipment/vehicles ▪ Mortality due to destruction of active nests	▪ See long-term and temporary habitat loss	None	▪ **Design Feature 4 (Avian-safe Design Standards)**. All new or rebuilt transmission facilities are constructed to avian-safe design standards (i.e., *Suggested Practices for Avian Protection on* Power *Lines: The State of the Art in 2006* [Avian Power Line Interaction Committee [APLIC] 2006]; *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* [APLIC 2012]; *PacifiCorp's Avian Protection Plan*, updated June 2011 [PacifiCorp 2011]). This would limit the potential for avian wildlife collision and reduce the potential for avian injury and mortality. Mortality from electrocution is unlikely as the distance between conductors and the distance between energized conductors and grounded equipment is built to APLIC standards for high-voltage transmission lines (500kV and 345kV) and is greater than the wingspan of all avian species likely to occur in the Project area. ▪ **Design Feature 26 (Vehicle Access Restriction)**. All construction vehicle movement would be restricted to predesignated access, contractor acquired access, public roads, or approved overland travel. This would minimize disturbance to habitat from excess overland travel and the associated potential spread of noxious weeds and an increase in the risk of wildfire. ▪ **Design Feature 27 (Construction Activity Access Restriction)**. All construction vehicle movement would be contained in a predetermined area. This would minimize disturbance to wildlife and wildlife habitat from construction activities and minimize risk of noxious weed	None	▪ Low residual effects. Mortality from electrocution and collisions with transmission line infrastructure is possible but unlikely due to the use of avian-safe design standards (Design Feature 4) and flight diverters (Selective Mitigation Measure 14). Mortality from equipment and vehicle collisions and destruction of nests is possible but unlikely due to restrictions on the spatial extent of construction activities (Design Features 26 and 27), enforcement of a speed limit (Design Feature 39) and avoidance of Project activities during sensitive periods (Selective Mitigation Measure 12).	▪ No. The nature and extent of residual effects identified through the NEPA process indicate that mortality due to electrocution, collisions with transmission line infrastructure, collisions with equipment and vehicles, and destruction of nests is possible but unlikely and, therefore, does not warrant compensatory mitigation. Also, residual effects would not inhibit achieving BLM ARMPA objectives or compliance with laws, regulations, and/or policies. Finally, residual effects related to this resource indicator have not been previously identified in a mitigation strategy as warranting compensatory mitigation.	Not applicable

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
			introduction and the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant community composition that can increase the frequency and intensity of fire. ▪ **Design Feature 39 (Vehicle Speed Limit for Overland Travel)**. To minimize vehicle collisions with wildlife, a speed limit of 15 mph would be employed on overland access routes. ▪ **Selective Mitigation Measure 12 (Seasonal and Spatial Wildlife Restrictions)**. Construction and maintenance activities would be restricted in designated areas and during critical periods, (e.g., wintering habitats and specific breeding or nesting seasons). For sensitive wildlife species, this would minimize disturbance to special status wildlife by limiting human activity, noise, and disturbance during sensitive life-cycle periods and reduce the risk of adverse impacts on breeding success and species survival rates. ▪ **Selective Mitigation Measure 14 (Perch Deterrents and Flight Diverters)**. Where consistent with agency guidelines, APLIC standards, and special status species management objectives, raptor perch deterrents could be installed on transmission line structures in areas where increased raptor and raven predation on special status wildlife is a concern. Shield wires, guy wires, and overhead optical ground wires along portions of the transmission line that have a potential for avian collisions would be marked with flight diverters or other devices approved by the FWS, BLM, or USFS in accordance with agency requirements and in compliance with recommendations made in the APLIC report *Reducing Avian collisions with Power Lines: State of the Art in 2012* (APLIC 2012).				

Table 1. Mitigation Strategy for Greater Sage-Grouse							
		Strategy to Avoid, Minimize, and Rectify Impacts on the Resource					
Impact Indicator[1]	**Initial Impacts (Agency Preferred Alternative)[2]**	**Avoidance[4]**	**Minimize[5]**	**Rectify/Restore[6]**	**Residual Effects (Agency Preferred Alternative)[3]**	**Warrant Compensatory Mitigation?**	**Mitigation Strategy Compensatory Mitigation**
▪ Disturbance to sage-grouse during nesting, breeding, and wintering periods (including lek locations) from human presence, vehicle use, and noise during construction and maintenance resulting in: • -Interruption of sage-grouse movement among populations (restricting gene-flow) • -Alteration of seasonal movements and breeding, brooding, or wintering bird behavior • -Avoidance of habitat • -Increased susceptibility to disease and predation • -Decreased nest initiation/success • -Decreased population survival and growth rates ▪ Disruption of sage-grouse nesting and breeding activities and sage-grouse avoidance of habitat due to vehicle noise and human presence resulting from public use of new access roads (indirect effects)	▪ See long-term and temporary habitat loss	▪ In accordance with the Wyoming ARMPAs: • In breeding, nesting, and early brood rearing habitats in PHMA (core only), there will be no surface disturbing and/or disruptive activities from March 15 to June 30. • In nesting and early brood rearing habitats within 4 miles of occupied leks inside PHMA (connectivity only), there will be no surface disturbing and/or disruptive activities from March 1 to July 14. • In nesting and early brood rearing habitats within 2 miles of occupied leks outside PHMA, there will be no surface disturbing and/or disruptive activities from March 1 to July 14. • In winter concentration areas, there will be no surface disturbing and/or disruptive activities in PHMA (core only) from December 1 to March 14. Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are identified as supporting populations of sage-grouse that attend leks within PHMAs (core only). ▪ In accordance with the Northwest Colorado ARMPAs: • In breeding, nesting, and early brood rearing habitats within 4 miles of active leks, there will be no surface occupancy and surface disturbing activities from March 1 to July 15. ▪ In accordance with the Utah ARMPAs: • In breeding, nesting, and early brood rearing habitats within 3.1 miles of leks inside PHMA, there will be no surface disturbing activities from February 15 to June 15.	▪ **Selective Mitigation Measure 5 (Minimization of New or Improved Project Accessibility)**. All new or improved access not required for maintenance would be closed or rehabilitated following Project construction in accordance with prior agency approval and using the most effective and least environmentally damaging methods. This would restore natural contours, vegetation, and potential habitat and limit public access to special status wildlife populations, thereby reducing post-construction anthropogenic disturbance in these areas.	▪ None	▪ Low residual effects. Disturbance to sage-grouse during nesting, breeding, and wintering periods (including lek locations) from human presence, vehicle use, and noise could occur from Project activities but would be minimized by avoiding disturbance during sensitive periods as specified in the Wyoming, Northwest Colorado, and Utah ARMPAs. Disruption of nesting and breeding activities and avoidance of habitat due to vehicle noise and human presence resulting from public use of new access roads could occur, but would be minimized due to limited public accessibility of new or improved access roads (Selective Mitigation Measure 5).	▪ No. The nature and extent of residual effects identified through the NEPA process indicate that disturbance to sage-grouse could occur as a result of disturbance from Project activities but would be minimized through avoiding disturbance during sensitive periods and limiting public accessibility of new or improved access roads. Therefore, compensatory mitigation is not warranted. Also, residual effects would not inhibit achieving BLM ARMPA objectives or compliance with laws, regulations, and/or policies. Finally, residual effects related to these resource indicators have not been previously identified in a mitigation strategy as warranting compensatory mitigation.	▪ Not applicable

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
		• In identified brood rearing habitat, there will be no surface disturbing activities from April 15 to August 15. • In winter habitat, there will be no surface disturbing activities from November 15 to March 15.					
▪ Increased predation risk to sage-grouse from raptors and ravens (indirect effects) ▪ Increased predation risk to sage-grouse from mammalian predators (indirect effects) ▪ Alteration of sage-grouse behavioral patterns due to increased predation pressure (indirect effects)	▪ See long-term and temporary habitat loss	None	▪ **Selective Mitigation Measure 6 (Tower Design Modification)**. The type of transmission line tower structure used could be modified, if practicable and consistent with the APLIC and BLM standards, from a lattice steel structure to a tubular H-frame steel structure in areas where increased raptor and raven predation are a particular concern. Tower design modification would not eliminate perching but could reduce the number of perch sites on the transmission line structures available to raptors and ravens and increase the effectiveness of Selective Mitigation Measure 14 (Perch Deterrents and Flight Diverters) of reducing raptors' and ravens' use of the transmission line as a hunting perch. Tubular H-frame steel structures would be required in the 11-mile area in Colorado where the Project would not be colocated with existing disturbance. ▪ **Selective Mitigation Measure 14 (Perch Deterrents and Flight Diverters)**. Where consistent with agency guidelines, APLIC standards, and special status species management objectives, raptor perch deterrents could be installed on transmission line structures in areas where increased raptor and raven predation on special status wildlife is a concern. Shield wires, guy wires, and overhead optical ground wires along portions of the transmission line that have a potential for avian collisions would be marked with flight diverters or other devices approved by the FWS, BLM, or USFS in accordance with agency requirements and in compliance with recommendations made in the APLIC report *Reducing Avian*	▪ **Design Feature 2 (Surface Recontouring and Reclamation)**. Areas subject to ground disturbance would be recontoured and reclaimed as required by the landowner or land-management agency. This would generally include reclamation of disturbed areas by establishing stable contours, spreading stockpiled topsoil, and revegetation using a seed mix appropriate for the environmental conditions in which the disturbance has occurred (approved by the BLM or USFS, as appropriate, or as negotiated by individual landowners). A Reclamation, Revegetation, and Monitoring Framework Plan that includes site-specific methods (e.g., topsoil stripping and storage, timing of reclamation activities, seed mixes, monitoring methods, standards for reclamation success, bond release criteria, etc.) would be included in the POD. This would minimize the temporal scope of disturbance, decrease the likelihood that a disturbance area would be colonized by invasive species, and provide the best opportunity for disturbed areas to provide habitat.	▪ Moderate residual effects. The use of tower design modification and perch deterrents (Selective Mitigation Measures 6 and 14) may reduce, but will not eliminate, perching by raptors and ravens. The potential for raptor and raven perching and nesting on transmission line structures already exists in some areas. The short-term loss of cover from Project construction could result in increased mammalian predation (i.e., creation of a corridor for predators until reclamation (Design Feature 2) results in restored vegetation cover). This would be most likely in areas where the Project does not follow existing disturbance.	▪ Yes. The nature and extent of residual effects associated with increased predation risk that was identified through the NEPA process warrant compensatory mitigation. Without compensatory mitigation, the residual effects would inhibit achieving BLM ARMPA objectives.	▪ Standard: Net conservation gain. ▪ Objective 1: To reduce predation risk in sage-grouse habitat. ▪ Measure(s): To be determined in the Greater Sage-Grouse Compensatory Mitigation Plan using the Habitat Equivalency Analysis.

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
			collisions with Power Lines: State of the Art in 2012 (APLIC 2012).				
▪ Fragmentation of sage-grouse habitats (and avoidance of habitats by sage-grouse) due to the introduction of tall structures (transmission line towers), increased electromagnetic fields, and construction of new roads	▪ See long-term and temporary habitat loss	▪ None	▪ **Design Feature 18 (Overland Access).** Grading would be minimized by driving overland in areas approved in advance by the land-management agency in predesignated work areas whenever possible. ▪ **Selective Mitigation Measure 13 (Overland Access).** Drive-and-crush (vehicular travel to access a site without significantly modifying the landscape) and/or clear-and-cut travel (removal of vegetation to provide suitable access for equipment) would occur in areas where no grading would be needed to access work areas. This would reduce the amount of ground-disturbing activities (e.g., surface soil removal, vegetation cropping/cutting) landscape modification, risk of introduction of invasive weeds, and habitat fragmentation. Modification of sagebrush vegetation communities, which provide necessary cover and forage for habitat suitability, resulting from vegetation clearing, would be limited to the extent practicable in sage-grouse habitat.	▪ None	▪ High to moderate residual effects due to the fragmentation and avoidance of habitats due to the presence of tall structures, increased electromagnetic fields, and new roads. The construction of new roads would be minimized by using overland access where possible (Design Feature 18 and Selective Mitigation Measure 13) but new access roads will required for the life of the Project.	▪ Yes. The nature and extent of residual effects associated with habitat fragmentation from Project activities that were identified through the NEPA process warrant compensatory mitigation. Without compensatory mitigation, the residual effects would inhibit achieving BLM ARMPA objectives, and, therefore, warrant compensatory mitigation.	▪ Standard: Net conservation gain. ▪ Objective 1: To compensate for the effects of habitat fragmentation and avoidance. ▪ Measure(s): To be determined in the Greater Sage-Grouse Compensatory Mitigation Plan using the Habitat Equivalency Analysis.
▪ Reductions in the quality of sage-grouse habitat due to the introduction and spread of noxious weeds ▪ Alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds (indirect effects)	▪ See long-term and temporary habitat loss	None	▪ **Design Feature 1 (Minimization Clearing)**. Vegetation would be left in place wherever possible where recontouring is not required. This would minimize disturbance to habitat from Project activities. ▪ **Design Feature 5 (Creation of a Noxious Weed Management Plan)**. A Noxious Weed Management Plan would be developed and approved by the BLM, USFS, and county weed management officer and incorporated into the POD. This plan would be based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 and Forest Service Noxious Weed Management Manual 2080. This plan would include prescriptions for specific measures to treat, avoid, and reduce the spread of noxious weeds in the Project area	▪ **Design Feature 2 (Surface Recontouring and Reclamation)**. Areas subject to ground disturbance would be recontoured and reclaimed as required by the landowner or land-management agency. This would generally include reclamation of disturbed areas by establishing stable contours, spreading stockpiled topsoil, and revegetation using a seed mix appropriate for the environmental conditions in which the disturbance has occurred (approved by the BLM or USFS, as appropriate, or as negotiated by individual landowners). A Reclamation, Revegetation, and Monitoring Framework Plan that includes site-specific methods (e.g., topsoil stripping and storage, timing of reclamation activities, seed mixes, monitoring methods, standards for reclamation success, bond release criteria, etc.) would be	▪ Low residual effects. Reductions in the quality of sage-grouse habitat due to the introduction and spread of noxious weeds, and alteration of the native sagebrush understory through introduction and spread of non-native, invasive plants and noxious weeds could occur but would be minimized by restricting vegetation clearing (Design Feature 1) and the spatial extent of construction activities (Design Features 26 and 27, Selective Mitigation Measure 5), using overland access (Selective Mitigation Measure 13), salvaging topsoil (Design Feature 17) reclamation (Design Feature 2), and implementation of the Noxious Weed Management Plan (Design Feature 5).	▪ No. The nature and extent of residual effects identified through the NEPA process indicate that reductions in the quality of sage-grouse habitat due to the introduction and spread of noxious weeds, and alteration of the native sagebrush understory through introduction and spread of invasive plants and noxious weeds could occur, but would be minimized through by restricting vegetation clearing and the spatial extent of construction activities, using overland access, salvaging topsoil, reclamation, and implementation of the Noxious Weed Management Plan. Therefore, compensatory mitigation is not warranted. Also, residual effects would not inhibit achieving BLM ARMPA objectives or compliance with laws, regulations, and/or policies. Finally, residual effects related to	Not applicable.

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
			during construction. A Reclamation, Revegetation, and Monitoring Framework Plan will also be developed to support the POD, which will specify protocols, timelines, and objectives for monitoring of noxious weed populations, if needed. Implementation of this design feature would minimize the spread of noxious weed species in the Project area and the associated negative ecological effects of invasive species such as increased wildfire risk and the competitive exclusion of native and desirable plant species. ▪ **Design Feature 17 (Topsoil Salvaging).** In disturbed temporary work areas, the topsoil would be salvaged/segregated and distributed and contoured evenly over the surface of the disturbed area after construction completion. The soil surface would be seeded and left rough to help reduce potential for weeds and wind erosion. This would minimize the risk of weed invasion in disturbed temporary work areas that could spread into adjacent habitat. ▪ **Design Feature 26 (Vehicle Access Restriction).** All construction vehicle movement would be restricted to predesignated access, contractor acquired access, public roads, or approved overland travel. This would minimize disturbance to habitat from excess overland travel and the associated potential spread of noxious weeds and an increase in the risk of wildfire. ▪ **Design Feature 27 (Construction Activity Access Restriction).** All construction vehicle movement would be contained in a predetermined area. This would minimize disturbance to wildlife and their habitat from construction activities and minimize risk of noxious weed introduction and the potential for subsequent changes to natural wildfire regimes resulting from alterations in plant	included in the POD. This would minimize the temporal scope of disturbance, decrease the likelihood that a disturbance area would be colonized by invasive species, and provide the best opportunity for disturbed areas to provide habitat.		this resource indicator have not been previously identified in a mitigation strategy as warranting compensatory mitigation.	

Table 1. Mitigation Strategy for Greater Sage-Grouse							
Impact Indicator[1]	Initial Impacts (Agency Preferred Alternative) [2]	Strategy to Avoid, Minimize, and Rectify Impacts on the Resource			Residual Effects (Agency Preferred Alternative)[3]	Warrant Compensatory Mitigation?	Mitigation Strategy
		Avoidance[4]	Minimize[5]	Rectify/Restore[6]			Compensatory Mitigation
			community composition that can increase the frequency and intensity of fire. ▪ **Selective Mitigation Measure 5 (Minimization of New or Improved Project Accessibility).** All new or improved access not required for maintenance would be closed or rehabilitated following Project construction in accordance with prior agency approval and using the most effective and least environmentally damaging methods. This measure would restore natural contours, vegetation, and potential habitat and limit public access to special status wildlife populations, thereby reducing post-construction anthropogenic disturbance in these areas. ▪ **Selective Mitigation Measure 13 (Overland Access).** Drive-and-crush (vehicular travel to access a site without significantly modifying the landscape) and/or clear-and-cut travel (removal of vegetation to provide suitable access for equipment) would occur in areas where no grading would be needed to access work areas. This would reduce the amount of ground-disturbing activities (e.g., surface soil removal, vegetation cropping/cutting) landscape modification, risk of introduction of invasive weeds, and habitat fragmentation. Modification of sagebrush vegetation communities, which provide necessary cover and forage for habitat suitability, resulting from vegetation clearing, would be limited to the extent practicable in sage-grouse habitat.				

NOTES:
[1]Impact indicators represent the potential impacts on the resources identified in Chapter 3 of the Final EIS.
[2]Predicted effects of strategies to avoid, minimize, or rectify impacts are not implemented.
[3]When the strategies (including Applicant-committed measures, design features of the Proposed Action for environmental protection, and agency-required mitigation measures in response to identified impacts) described in the columns to the left are applied, they are assumed to be effective at avoiding, minimizing, and rectifying/restoring the identified impact. It is assumed that the mitigation strategy will be effective and applied to the entire resource indicators.
[4]Avoidance" refers to measures that avoid the impact altogether by not taking a certain action or parts of an action (40 CFR 1508.20).
[5]Minimize" refers to measures that limit the degree or magnitude of the action and its implementation (40 CFR 1508.20).
[6]Rectify/Restore" refers to measures that would repair, rehabilitate, or restore the affected environment over time (40 CFR 1508.20) (e.g., reclamation practices that would reduce or eliminate impacts during and after the life of the Project).

Attachment B – Summary of Technical Advisory Group Issues

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A number of issues were identified during the TAG discussions and the TAG agency participants provided guidance to the Applicant for resolution of the issues. These are provided in **Table 1**. Full discussion is found in the **Attachment C** – TAG Mitigation Guidance (SWCA 2016).

Table 1 Issues Identified During Technical Advisory Group Review (SWCA 2016)

Issue	Technical Advisory Group Guidance	Resolution
Unclassified, unknown, and undetermined leks	Ensure unclassified leks are included within the HEA model.	While they were not displayed on maps reviewed by the TAG, unclassified, unknown, or undetermined leks were included in the HEA model results presented in the FEIS documents for the Projects. Unclassified, unknown, or undetermined leks will be included in all future HEA model results. Resolution of this issue is further described in following sections of this document.
HEA model results and versioning	Ensure that map books and data depict results of current HEA model (direct and indirect effects)	This issue was related to questions raised regarding HEA model results provided to the TAG during the review process. No further action is required. The Applicant, through SWCA, demonstrated that map books, data, and modeling results presented in the FEIS documents use the HEA model version described in those documents. The HEA model versions used to provide sample direct and indirect model results to the TAG were clarified by SWCA during the TAG review process. All map books, data, and modeling results presented in future versions of the greater sage-grouse mitigation plans will clearly indicate the HEA model version and assumptions used.
Extent of sage-grouse occupied habitat	Ensure that occupied habitat layers used in HEA modeling reflect known distributions of greater sage-grouse. Use available telemetry data and expert opinion to confirm the extent of occupied habitat.	Following review, TAG participants identified that BLM's Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) should be used as extent of occupied habitat where project impacts will occur across the HEA model. This determination was made based on a comparison of available telemetry data to various definitions of occupied habitat that have been used by state or federal agencies. The TAG identified that telemetry data closely matched the BLM PHMA/GHMA boundaries. Where telemetry data were not available, the TAG consulted state and federal wildlife managers and relied on their expert opinion to confirm the adequacy of the PHMA/GHMA boundaries. Resolution of this issue is further described in following sections of this document.

Table 1 Issues Identified During Technical Advisory Group Review (SWCA 2016)		
Issue	**Technical Advisory Group Guidance**	**Resolution**
UDWR "Opportunity Areas"	The TAG requested that opportunity areas in Utah be evaluated for potential inclusion into final occupied habitat layers.	As part of the TAG evaluation of the occupied habitat layers, possible inclusion of opportunity areas in the final definition of occupied habitat was explored. Available telemetry data and expert opinion were used to evaluate opportunity areas. The TAG concluded that opportunity areas do not currently support sage-grouse populations on a regular basis. As a result, UDWR and the State of Utah Public Lands Policy Coordination Office planning staff agreed that there is no reason to include opportunity areas in the definition of occupied habitat. Opportunity areas will be evaluated for future habitat improvement and mitigation projects that could expand sage-grouse populations into these areas.
"Sagebrush abundance index" metric	Colorado Parks and Wildlife identified a potential issue with the habitat metric that caused areas near fragmented habitat to be identified as higher quality habitat than habitats in un-fragmented landscapes.	During the TAG review it was identified that the 'Sagebrush abundance index' (variable 05 of the habitat service metric) was undervaluing intact patches of habitat that had 95-100% sagebrush abundance. As a result, the habitat service metric was adjusted to ensure that all habitats with 50-100% sagebrush abundance receive the highest possible score for variable 05. This adjusted metric will be used in all future HEA modeling for the Projects. This issue and its resolution are further described in following sections of this document.
Direct effects engineering assumptions	Direct disturbance assumptions and typical footprints should be used to provide a better understanding of the assumptions being used by the Companies. Final HEA modeling should be completed using the final engineered footprints for each project.	The Companies provided direct disturbance assumptions to the TAG for each disturbance type and construction activity for the Projects. Appendix A provides the assumptions for the TWE Project and Appendix B provides the assumptions for the EGS Project. Where appropriate, assumptions have been made consistent across the two projects including assumptions for steep terrain. The final HEA model results will be based on the final engineered alignments for each project. This issue and its resolution are further described in the following sections of this document.

Table 1 Issues Identified During Technical Advisory Group Review (SWCA 2016)		
Issue	**Technical Advisory Group Guidance**	**Resolution**
Impact timeframe for drive and crush vegetation clearance method	The TAG identified that the impacts for drive and crush construction techniques are less than those associated with mowing vegetation, which are less than those associated with traditional ground clearing construction. These differences should be addressed in the final HEA model runs.	The Companies worked with the TAG to adjust the impact and reclamation assumptions used for drive and crush, mowing, and traditional ground clearing construction. These adjustments included changing the recovery timeframes for vegetation for each of these construction practices. The results of this effort are further described in the following sections of this document as well as in Appendix A.
Footprint calculations for guyed structures	The TAG identified that direct disturbances of guyed transmission structures may not be adequately accounted for in the current HEA modeling approach. The TAG provided guidance to evaluate the disturbance assumptions for impacts of guyed structures and other structure types.	The Companies worked with the TAG to describe how direct and indirect impacts of structure type would be addressed in the model. The direct impact assumptions developed by the TAG for use in future HEA model runs are described in Appendix A and B. The TAG guidance for modeling indirect effects is described in Appendix C and the following sections of this document. In reviewing the combined results of the direct and indirect effect HEA modeling, the TAG concluded that with the modifications recommended in this document, guyed structures are adequately addressed by the HEA.
Rawlins FO position on guy wire fencing/marking	At one point during the TAG review process, it was indicated that the BLM Rawlins Field Office may require fencing of guyed structures which was not accounted for in the HEA model assumptions.	The Rawlins Field Office clarified that there are no general requirements to fence guyed transmission structures. The Rawlins Field Office may recommend that guy wires be fenced in some locations if safety or wildlife issues are expected or identified. If needed, fencing requirements would be identified on a case-by-case basis using the adaptive management processes. No further action is required by the Companies at this time.
Co-location	The TAG provided guidance to the Companies to evaluate potential effects of co-location across the length of each Project.	The Companies and the TAG convened a sub-group to specifically address indirect effects of transmission lines, including the issue of co-location. The TAG provided guidance to the Companies that the methods developed by the sub-group should be applied to all lands in accordance with their land management plan requirements. The methods developed by the sub-group to address indirect effects, including co-location, are further described in Appendix C as well as the following sections of this document.

Table 1 Issues Identified During Technical Advisory Group Review (SWCA 2016)		
Issue	**Technical Advisory Group Guidance**	**Resolution**
Indirect effects	The TAG provided guidance to the Companies to further quantify the indirect effects of transmission lines on greater sage-grouse in the HEA model and mitigation plans.	The TAG provided guidance to the Companies to implement the indirect effects quantification method developed by the sub-group in future HEA model runs. The methods to quantify indirect effects developed by the sub-group and reviewed by the TAG are described in following sections of this document and are provided in detail in **Appendix C**.

Attachment C – Technical Advisory Group Greater Sage-grouse Mitigation Guidance for the TransWest Express and Energy Gateway South Transmission Line Projects (SWCA 2016)

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Technical Advisory Group Greater Sage-Grouse Mitigation Guidance for the TransWest Express and Energy Gateway South Transmission Line Projects

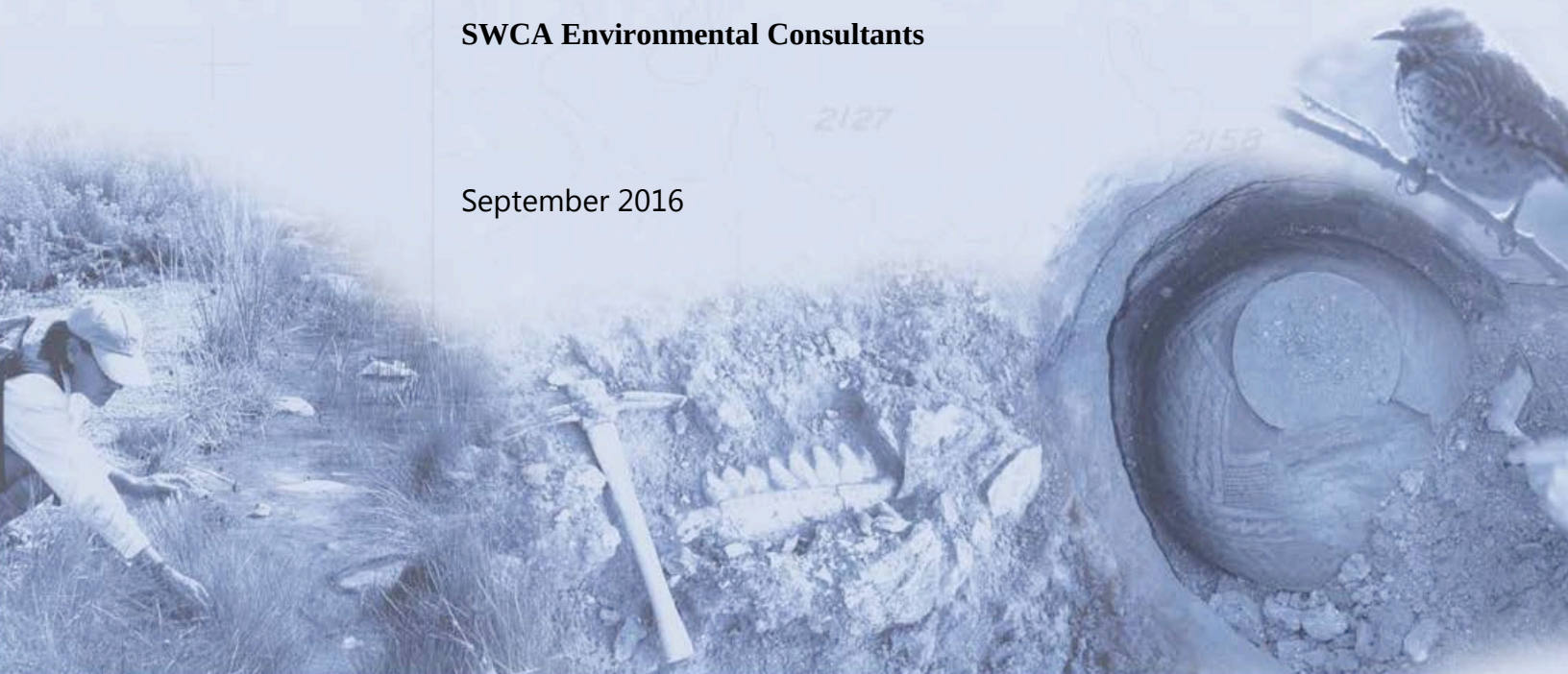
Prepared for:

Rocky Mountain Power
TransWest Express LLC

Prepared by

SWCA Environmental Consultants

September 2016



Technical Advisory Group Greater Sage Grouse Mitigation Guidance for the TransWest Express and Energy Gateway South Transmission Line Projects

Prepared for:

Rocky Mountain Power
TransWest Express LLC

Prepared by

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September 2016

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TABLES

APPENDICES

1.0 INTRODUCTION

TransWest Express LLC and Rocky Mountain Power (hereafter, the Companies) have proposed the TransWest Express Transmission (TWE) Project and the Energy Gateway South (EGS) Project, respectively. The TWE Project and EGS Project, collectively the Projects, are multi-state high-voltage transmission lines that traverse greater sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse or greater sage-grouse) habitat in the states of Wyoming, Colorado, and Utah. The Companies have proposed mitigation for potential unavoidable impacts to the greater sage-grouse and its habitat from the proposed transmission lines for consideration by the BLM in their respective National Environmental Policy Act (NEPA) review processes for the Projects. The greater sage-grouse mitigation plans developed by the Companies in collaboration with the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (USFWS) (hereafter, the Agencies) and other stakeholders quantify and address direct impacts to greater sage-grouse and its habitat, as well as indirect impacts to greater sage-grouse from increased human presence and noise during construction. These plans were included in the Final Environmental Impact Statements (FEIS) for the Projects (BLM 2015 at Appendix D at Appendix K, BLM 2016 at Appendix K).

The FEIS for each Project contemplates additional review and collaboration between the Companies, BLM, and the cooperating agencies to finalize the greater sage-grouse mitigation plans for the Projects, as follows:

> *For TransWest Express:*
> "In accordance with BLM WO IM 2013-142 and other cooperating agency policies pertaining to offsite mitigation, BLM, the cooperating agencies, and the Applicant are working collaboratively to develop appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to greater sage-grouse. To facilitate this collaboration, the Applicant has convened a group of sage-grouse biologists from the BLM and cooperating agencies (the Habitat Equivalency Analysis [HEA] Technical Advisory Group) to provide input and guidance for developing the Applicant's Sage-grouse Mitigation Plan, including the HEA (refer to EIS Section 3.8.6)." (BLM 2015 at Appendix J page J-7)

> *For Energy Gateway South:*
> "In accordance with BLM WO IM 2013-142, applicable BLM land and resource management plans, BLM mitigation policy, and other cooperating agency policies pertaining to offsite mitigation, BLM, the cooperating agencies, and the Applicant are working collaboratively to develop appropriate offsite mitigation that could be implemented to facilitate reasonable development of the Project consistent with applicable agency plans and policies pertaining to sage-grouse. To facilitate preliminary collaboration, the Applicant has convened a group of sage-grouse biologists from the BLM and cooperating agencies (the Habitat Equivalency Analysis [HEA] Technical Working Group) to provide input and guidance for developing the Applicant's Sage-grouse Mitigation Plan, including the HEA (refer to EIS Section 6.2.2.1)." (BLM 2016 Appendix K at Page K-8)

In accordance with the Projects' FEIS, on March 3, 2016, a Technical Advisory Group (TAG) was convened to review the Companies' approach to the mitigation of impacts to greater sage-grouse from the Projects, including the methods for addressing direct and indirect impacts to greater sage-grouse and its habitat included in the greater sage-grouse mitigation plans. The members of the TAG include:

- **Bureau of Land Management**
  - Dennis Saville
  - Desa Ausmus
  - Renee Chi
  - Jenny Morton
  - Christine Fletcher
  - Scott Whitesides
  - Jason Sutter
  - Tamara Gertsch
  - Sharon Knowlton
  - Walt George
  - Mike Valle
- **U.S. Fish and Wildlife Service**
  - Tyler Abbott
  - Julie Reeves
  - Creed Clayton
  - Amy Defreese
  - Lief Wiechman
  - Heather McPherron
  - Jay Martini
  - Pat Deibert
- **Western Area Power Administration**
  - Steve Blazek
  - Tim Langer
- **Utah Reclamation, Mitigation, and Conservation Commission (URMCC) /U.S. Bureau of Reclamation**
  - Richard Mingo
  - Mark Holden
- **Wyoming Game and Fish Department**
  - Scott Gamo
- **Colorado Parks and Wildlife**
  - Brian Holmes
  - Brad Petch
- **Utah Division of Wildlife Resources**
  - Pat Rainbolt
  - Bill James
- **Moffatt County**
  - Jeff Comstock
- **Rocky Mountain Power**
  - Rod Fisher
  - Nancy Smith
  - Robert Hamilton
  - Brian King
- **TransWest Express LLC**
  - Garry Miller
  - Kelly Cummins
- **SWCA Environmental Consultants**
  - Jon Kehmeier
  - Ann Widmer
- **AECOM**
  - Mandy Lemig
  - David Fetter
  - Matt Petersen
- **EPG**
  - Cindy Smith
  - Adrien Elseroad
  - Pete Goodwin

The TAG met routinely between March 3, 2016 and June 6, 2016, including weekly conference calls and three in-person meetings on March 3, March 22, and June 6, 2016.[1] During the weekly conference calls and in-person meetings, the TAG reviewed and discussed the Projects' greater sage-grouse mitigation plans focusing on the technical aspects of the Habitat Equivalency Analysis (HEA) model, specifically the scope of the model, the indirect effects analysis methodology, and the direct effects analysis assumptions.

The TAG meetings were facilitated by SWCA, EPG and AECOM. EPG and AECOM are BLM's third-party NEPA contractors for the EGS Project and TWE Project, respectively. SWCA is a consultant to the Companies with specific expertise in greater sage-grouse biology. SWCA participated in the TAG meetings on the Companies' behalf, including participation in a sub-group of the TAG consisting of sage-grouse biologists from the Agencies and SWCA specifically formed to develop an approach to modeling indirect effects of high-voltage transmission lines on greater sage-grouse.

At the Companies' direction, SWCA has compiled the input and guidance developed by the TAG for consideration by the Companies in finalizing their greater sage-grouse mitigation plans. The Companies have directed SWCA to provide this summary to all TAG participants for their records. The purpose of this report is to document the technical input and guidance provided by the TAG on the HEA model and its use to quantify direct and indirect effects to sage-grouse from the Projects for the purposes of determining appropriate compensatory mitigation. The Companies will consider the guidance provided by the TAG and will coordinate with the Agencies update their greater sage-grouse mitigation plans individually as they deem appropriate. The revised greater sage-grouse mitigation plans will be provided to the Agencies for use in their decision-making process.

[1] Additional meetings were held by a sub-group of the TAG formed to develop a methodology to address indirect effects of the Projects on greater sage-grouse. This process and the associated meetings are documented in Appendix C of this report.

2.0 TECHNICAL ADVISORY GROUP GUIDANCE

The Companies worked closely with the TAG to review the technical aspects of the greater sage-grouse mitigation plans described in the Projects' FEIS documents (BLM 2015 Appendix D at Appendix K, BLM 2016 Appendix K), focusing on the methods, assumptions, and scientific basis of the HEA model. In many cases, the TAG found that the greater sage-grouse mitigation plans included in the FEIS documents are adequate to quantify the Projects' impacts and the mitigation required to compensate for those impacts. Those portions of the greater sage-grouse mitigation plans remain as described in the FEIS documents and are referenced throughout this document. Where the TAG identified a potential need to modify the greater sage-grouse mitigation plans and HEA model, the TAG provided guidance to the Companies on how to modify the approach and how to incorporate any changes into the final HEA modeling and greater sage-grouse mitigation plans. Table 1 documents the issues considered by the TAG, including issues that were resolved during the TAG review process and issues that resulted in guidance to the Companies for modifying the HEA and the greater sage-grouse mitigation plans. This guidance is described in additional detail in the following sections.

Table 1. Issues Identified During TAG Review

Issue	TAG Guidance	Resolution
Unclassified, unknown, and undetermined leks	Ensure unclassified leks are included within the HEA model.	While they were not displayed on maps reviewed by the TAG, unclassified, unknown, or undetermined leks were included in the HEA model results presented in the FEIS documents for the Projects. Unclassified, unknown, or undetermined leks will be included in all future HEA model results. Resolution of this issue is further described in following sections of this document.
HEA model results and versioning	Ensure that map books and data depict results of current HEA model (direct and indirect effects)	This issue was related to questions raised regarding HEA model results provided to the TAG during the review process. No further action is required. SWCA confirmed that map books, data, and modeling results presented in the FEIS documents use the HEA model version described in those documents. The HEA model versions used to provide sample direct and indirect model results to the TAG were clarified by SWCA during the TAG review process. All map books, data, and modeling results presented in future versions of the greater sage-grouse mitigation plans will clearly indicate the HEA model version and assumptions used.

Issue	TAG Guidance	Resolution
Extent of sage-grouse occupied habitat	Ensure that occupied habitat layers used in HEA modeling reflect known distributions of greater sage-grouse. Use available telemetry data and expert opinion to confirm the extent of occupied habitat.	Following review, TAG participants identified that BLM's Priority Habitat Management Areas (PHMA) and General Habitat Management Areas (GHMA) should be used as extent of occupied habitat where project impacts will occur across the HEA model. This determination was made based on a comparison of available telemetry data to various definitions of occupied habitat that have been used by state or federal agencies. The TAG identified that telemetry data closely matched the BLM PHMA/GHMA boundaries. Where telemetry data were not available, the TAG consulted state and federal wildlife managers and relied on their expert opinion to confirm the adequacy of the PHMA/GHMA boundaries. Resolution of this issue is further described in following sections of this document.
UDWR "Opportunity Areas"	The TAG requested that opportunity areas in Utah be evaluated for potential inclusion into final occupied habitat layers.	As part of the TAG evaluation of the occupied habitat layers, possible inclusion of opportunity areas in the final definition of occupied habitat was explored. Available telemetry data and expert opinion were used to evaluate opportunity areas. The TAG concluded that opportunity areas do not currently support sage-grouse populations on a regular basis. As a result, UDWR and the State of Utah Public Lands Policy Coordination Office planning staff agreed that there is no reason to include opportunity areas in the definition of occupied habitat. Opportunity areas will be evaluated for future habitat improvement and mitigation projects that could expand sage-grouse populations into these areas.
"Sagebrush abundance index" metric	Colorado Parks and Wildlife identified a potential issue with the habitat metric that caused areas near fragmented habitat to be identified as higher quality habitat than habitats in un-fragmented landscapes.	During the TAG review it was identified that the 'Sagebrush abundance index' (variable 05 of the habitat service metric) was undervaluing intact patches of habitat that had 95-100% sagebrush abundance. As a result, the habitat service metric was adjusted to ensure that all habitats with 50-100% sagebrush abundance receive the highest possible score for variable 05. This adjusted metric will be used in all future HEA modeling for the Projects. This issue and its resolution are further described in following sections of this document.

Issue	TAG Guidance	Resolution
Direct effects engineering assumptions	Direct disturbance assumptions and typical footprints should be used to provide a better understanding of the assumptions being used by the Companies. Final HEA modeling should be completed using the final engineered footprints for each project.	The Companies provided direct disturbance assumptions to the TAG for each disturbance type and construction activity for the Projects. Appendix A provides the assumptions for the TWE Project and Appendix B provides the assumptions for the EGS Project. Where appropriate, assumptions have been made consistent across the two projects including assumptions for steep terrain. The final HEA model results will be based on the final engineered alignments for each project. This issue and its resolution are further described in the following sections of this document.
Impact timeframe for drive and crush vegetation clearance method	The TAG identified that the impacts for drive and crush construction techniques are less than those associated with mowing vegetation, which are less than those associated with traditional ground clearing construction. These differences should be addressed in the final HEA model runs.	The Companies worked with the TAG to adjust the impact and reclamation assumptions used for drive and crush, mowing, and traditional ground clearing construction. These adjustments included changing the recovery timeframes for vegetation for each of these construction practices. The results of this effort are further described in the following sections of this document as well as in Appendix A and B.
Footprint calculations for guyed structures	The TAG identified that direct disturbances of guyed transmission structures may not be adequately accounted for in the current HEA modeling approach. The TAG provided guidance to evaluate the disturbance assumptions for impacts of guyed structures and other structure types.	The Companies worked with the TAG to describe how direct and indirect impacts of structure type would be addressed in the model. The direct impact assumptions developed by the TAG for use in future HEA model runs are described in Appendix A and B. The TAG guidance for modeling indirect effects is described in Appendix C and the following sections of this document. In reviewing the combined results of the direct and indirect effect HEA modeling, the TAG concluded that with the modifications recommended in this document, guyed structures are adequately addressed by the HEA.
Rawlins FO position on guy wire fencing/marking	At one point during the TAG review process, it was indicated that the BLM Rawlins Field Office may require fencing of guyed structures which was not accounted for in the HEA model assumptions.	The Rawlins Field Office clarified that there are no general requirements to fence guyed transmission structures. The Rawlins Field Office may recommend that guy wires be fenced in some locations if safety or wildlife issues are expected or identified. If needed, fencing requirements would be identified on a case-by-case basis using the adaptive management processes. No further action is required by the Companies at this time.

Issue	TAG Guidance	Resolution
Co-location	The TAG provided guidance to the Companies to evaluate potential effects of co-location across the length of each Project.	The Companies and the TAG convened a sub-group to specifically address indirect effects of transmission lines, including the issue of co-location. The TAG provided guidance to the Companies that the methods developed by the sub-group should be applied to all lands in accordance with their land management plan requirements. The methods developed by the sub-group to address indirect effects, including co-location, are further described in Appendix C as well as the following sections of this document.
Indirect effects	The TAG provided guidance to the Companies to further quantify the indirect effects of transmission lines on greater sage-grouse in the HEA model and mitigation plans.	The TAG provided guidance to the Companies to implement the indirect effects quantification method developed by the sub- group in future HEA model runs. The methods to quantify indirect effects developed by the sub-group and reviewed by the TAG are described in following sections of this document and are provided in detail in Appendix C.

2.1 GUIDANCE RELATED TO THE QUANTIFICATION OF BASELINE CONDITIONS

Quantification of baseline conditions is described in Appendix B of Attachment 2 of the greater sage-grouse mitigation plan for the TWE Project (BLM 2015 Appendix D at Appendix K at Attachment 2 at Appendix B) and Appendix B of Exhibit K2 of the greater sage-grouse mitigation plan for the EGS Project. (BLM 2016 Appendix K at Exhibit K2 at Appendix B). Baseline habitat services are quantified using the greater sage-grouse habitat services metric. The habitat service metric was developed to capture changes in greater sage-grouse habitat services over time due to vegetation removal and recovery. The habitat service metric developed for the Projects includes variables identified by the peer-reviewed scientific literature as having an influence on the quality of greater sage-grouse habitat, including dominant vegetative components and anthropogenic influences.

During review of the baseline habitat service maps for the Projects, the TAG identified two adjustments to the habitat service metric:

1. Guidance was provided to the Companies to change Variable 05 in the habitat service metric (Table 2) such that a habitat service score of 3 would be applied to areas having 50-100% sagebrush abundance. Previous versions of the metric provided a score of 3 to areas having 50-95% sagebrush abundance. This adjustment addressed an issue raised by Colorado Parks and Wildlife that Variable 05 caused habitat in areas near fragmented habitat to be identified as higher quality than habitats in un-fragmented landscapes. Table 2 provides the full list of variables and scores used to establish baseline habitat services, as revised by the TAG.

2. Guidance was provided to the Companies to include all leks with an undetermined or unknown status in Variable 04. The notes for Table 2 clarify that undetermined or unknown status leks are classified as occupied.

In addition to changes to the habitat service metric, the TAG identified that the metric for sage-grouse habitat services should only be applied to occupied sage-grouse habitat. The TAG determined that habitat services and HEA modeling should be completed within the boundaries of the BLM's PHMA and GHMA and that the PHMA and GHMA layers encompass greater sage-grouse occupied habitat.

Table 2. Anthropogenic and Habitat Variables Used as a Metric of Greater Sage-grouse Habitat Services.

Variable Number	Variables	3	2	1	0
VAR01	Distance to high-traffic (>6,000 AADT) road, such as an interstate, federal, or state highway (meters)	>1,000	650–1,000	100–650	N/A*
VAR02	Distance to low-traffic (<6,000 AADT) paved roads, heavily travelled gravel roads, well pads, mine footprints, transmission substations (meters)	>200	50–200	25–50	N/A*
VAR03	Percent slope	<10	10–30	30–40	>40
VAR04	Distance to occupied lek[†] (kilometers)	0–6.4	6.4–8.5	>8.5	N/A
VAR05	Sagebrush abundance index (% of vegetation that is sagebrush within a 1-square-kilometer moving window)	50–100	30–50	10–30	0–10
VAR06	Percent sagebrush canopy cover	15–35	5–15 or >35	1–5	<1
VAR07	Sagebrush canopy height (centimeters)	30–80	20 to <30 or >80	5–20	<5
VAR08	Distance of habitat to sage or shrub dominant (meters)	<90	90–275	275–1,000	>1,000

* Lands less than 100 meters from a high traffic road and less than 25 meters from a low traffic paved road or high traffic gravel road were given a total metric score of 0 (provides no habitat services), not just a score of 0 for these individual variables. This is referred to as the road "width" in the direct impacts, although it is larger than the actual physical width of the road.

[†] Leks were classified as occupied if their 10-year attendance average was greater than 0 or if their status is undetermined or unknown.

AADT = Average Annual Daily Traffic

2.2 GUIDANCE RELATED TO THE QUANTIFICATION OF HABITAT SERVICE LOSSES

Quantification of habitat service losses is described in Appendix C of Attachment 2 of the greater sage-grouse mitigation plan for the TWE Project (BLM 2015 Appendix D at Appendix K at Attachment 2 at Appendix C) and Appendix C of Exhibit K2 of the greater sage-grouse mitigation plan for the EGS Project (BLM 2016 Appendix K at Exhibit K2 at Appendix B). The TAG provided guidance to the Companies on the timing of habitat service losses, specifically that habitat service losses should be calculated based on final engineered footprints, construction schedules, and operation timeline for the Projects. This is consistent with what was presented in the FEIS documents for the Projects and affirms the approach and timing for determining final mitigation.

2.2.1 Direct Effects

As described above, the final engineered footprint of the Projects will be provided electronically by the Companies for HEA modeling. The TAG provided guidance that the footprint files should specify the final engineered locations, disturbance footprints and disturbance types for all Project elements. The TAG worked with the Companies to develop the typical case for each type of anticipated disturbance. The typical direct disturbance assumptions for each Project are described in detail in Appendix A (TWE) and B (EGS).

The TAG noted that the modeling approach overestimates the habitat services lost to direct effects because of the model resolution, i.e. habitat service scoring occurs within 30 m x 30 m cells and the habitat service loss that is assumed for the footprint is also assumed for entire area of the cells it intersects. For example, when 100% of habitat services are lost in the footprint during construction, all cells that the footprint intersects receive a service score of 0 during the construction milestone. The TAG provided guidance to the Companies that this approach is sufficient for future HEA modeling.

The TAG also provided guidance to the Companies regarding the return of habitat services with respect to the disturbance type during the reclamation milestone periods. Habitat services in cells intersecting interim direct disturbances return at different rates depending on baseline vegetation type and disturbance condition (Table 3). There are five vegetation types: 1) agriculture and wetland; 2) grassland and riparian, 3) shrubs other than sagebrush; 4) low sagebrush; and 5) big sagebrush. To take into account the project-specific vegetation characteristics and disturbance types, the TAG provided guidance to the Companies to modify recovery endpoints and timeframes, where appropriate for each of three disturbance types: 1) cleared; 2) mowed; and 3) drive and crush (Table 3 and Appendices A and B). The TAG provided further guidance to the Companies suggesting that the recovery timeframe for big sagebrush (*Artemisia tridentata* ssp.) should be differentiated from the recovery timeframe for other types of sagebrush (i.e., *Artemisia nova*, *Artemisia cana*, *Artemisia arbuscula*) and other shrub species for drive and crush disturbance conditions (Table 3 and Appendices A and B).

Table 3. Vegetation recovery curves for interim direct impacts.

Project Milestone	Percent of Baseline Services Present at Each Milestone by Disturbance Condition and Vegetation Recovery Endpoint		
	Cleared	**Mowed**	**Drive and Crush**
Baseline	• 100% of agricultural and wetland • 100% of grassland and riparian • 100% shrub • 100% of low and big sagebrush	• 100% of agricultural and wetland • 100% of grassland and riparian • 100% shrub and low sagebrush • 100% of big sagebrush	• 100% of agricultural and wetland • 100% of grassland and riparian • 100% shrub and low sagebrush • 100% of big sagebrush
Construction	• 0% of agricultural and wetland • 0% of grassland and riparian • 0% shrub • 0% of low and big sagebrush	• 0% of agricultural and wetland • 0% of grassland and riparian • 0% shrub and low sagebrush • 0% of big sagebrush	• 0% of agricultural and wetland • 0% of grassland and riparian • 0% shrub and low sagebrush • 0% of big sagebrush
Restoration	• 0% of agricultural and wetland • 0% of grassland and riparian • 0% shrub • 0% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian • 0% shrub and low sagebrush • 0% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian • 0% shrub and low sagebrush • 0% of big sagebrush
Recovery 1 (1 year after Restoration)	• 100% of agricultural and wetland • 20% of grassland and riparian • 5% shrub • 1% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian • 10% shrub and low sagebrush • 2% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian • 20% shrub and low sagebrush • 7% of big sagebrush
Recovery 2 (5 years after Restoration)	• 100% of agricultural, wetland, grassland, and riparian • 25% shrub • 5% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian • 50% shrub and low sagebrush • 10% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush • 33% of big sagebrush
Recovery 3 (10 years after Restoration)	• 100% of agricultural, wetland, grassland, riparian, and shrub • 10% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush • 20% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush • 67% of big sagebrush
Recovery 4 (15 years after Restoration)	• 100% of agricultural, wetland, grassland, riparian, and shrub • 15% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush • 30% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush
Recovery 5 (20 years after Restoration)	• 100% of agricultural, wetland, grassland, riparian, and shrub • 20% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush • 40% of big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush
Recovery 6 (50 years after Restoration)	• 100% of agricultural, wetland, grassland, riparian, and shrub • 50% of low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush
Recovery 7 (100 years after Restoration)	• 100% of agricultural, wetland, grassland, riparian, shrub, and low and big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush	• 100% of agricultural, wetland, grassland, and riparian, shrub and low sagebrush, big sagebrush

2.2.2 Indirect Effects

The TAG provided guidance to the Companies regarding the modeling of indirect effects. The approach identified by the TAG is a modification to the HEA model described in the Projects' FEIS documents that more fully incorporates indirect effects in the HEA model. The Projects' FEIS documents describe the modeling of indirect effects of transmission line construction during the Construction milestone only. The TAG convened a sub-group to develop a science-based approach to quantify indirect effects to greater sage-grouse from operation of transmission lines. The TAG worked with the sub-group to finalize its approach and provided guidance to the Companies to include the final indirect effects approach developed by the TAG into the HEA model and greater sage-grouse mitigation plans. The approach to modeling the indirect effects of transmission line operation developed by the TAG is described in detail in Appendix C.

2.3 GUIDANCE REGARDING APPLICATION OF RESULTS TO A MITIGATION PACKAGE

Examples of mitigation project types that may be included in final mitigation packages and habitat service gains from each of those mitigation project types is described in Appendix D of Attachment 2 of the greater sage-grouse mitigation plan for the TWE Project (BLM 2015 Appendix D at Appendix K at Attachment 2 at Appendix D) and Appendix D of Exhibit K2 of the greater sage-grouse mitigation plan for the EGS Project. (BLM 2016 Appendix K at Exhibit K2 at Appendix D). The TAG provided guidance to the Companies that final mitigation projects should be selected in accordance with the requirements of the BLM RMPs, state management plan requirement, and the USFWS Range-Wide Mitigation Framework including principles, standards, and recommendations for mitigation. The final mitigation plans will describe the process and criteria for how these standards will be evaluated and who will conduct the evaluations. Standards that should be evaluated as part of the final mitigation plan include:

2.3.1 Siting Standard

Each mitigation project should be evaluated to ensure that it addresses the conservation objectives of the management plans applying to the area of impact. This approach achieves the goal of siting conservation measures in areas that will be most likely to benefit sage-grouse by considering the overall habitat quality and habitat services provided across the landscape.

2.3.2 Duration Standard

Each mitigation project should be evaluated to ensure that it achieves and maintains conservation objectives for no less than the duration of the Project including any residual impacts that may occur after the permit term has expired when vegetation recovery is still ongoing.

2.3.3 Additionality Standard

Each mitigation project should be evaluated to ensure that conservation uplift is achieved beyond what would already be expected if the mitigation action was not implemented.

Additionality may be met by enhancing or restoring disturbances that would not otherwise be restored, providing land-tenure agreements to protect suitable habitat that would not otherwise be protected, or by removing identified threats to the population (e.g., conifer encroachment and management) that would not be removed without some conservation action.

2.3.4 Timeliness Standard

Each mitigation project should be evaluated to ensure that it achieves and maintains conservation objectives in a timely manner that offset the schedule and duration of project impacts. When possible, advanced conservation may be applied to achieve the timeliness standard.

2.3.5 Effectiveness Standard

Mitigation and conservation measures used to mitigate for project impacts should be supported by appropriate scientific documentation, monitoring data, and management plans to confirm benefits to greater sage-grouse populations. Implementing agency-recognized conservation measures (e.g., conservation easements, conservation banks, habitat exchanges, conifer removal, sagebrush restoration, fence marking, etc.) will ensure that the measures identified in the mitigation plan are effective. Effectiveness should be evaluated for each mitigation project that is selected as part of the final mitigation plan.

2.3.6 Durability Standard

Each mitigation project should be evaluated to ensure that the actions that are taken are durable and supported by appropriate financial, legal, and management assurances. Mitigation measures such as conservation easements or conifer removal may have different durability assurance standards than other mitigation measures such as sagebrush planting or enhancement. These differences should be clearly described and documented in the final mitigation plan.

2.3.7 Metrics Standard

Metrics to demonstrate the avoidance, minimization, and compensatory mitigation benefits should be included for each mitigation project identified in the final mitigation plan. A benefit of the HEA model is that it provides a reliable, repeatable, and quantitative science-based metric based on biological conditions and habitat requirements for greater sage-grouse. This should be used to ensure that mitigation projects fully compensate for the interim and permanent losses of habitat services.

2.4 GUIDANCE RELATED TO PROCEDURE AND POLICY

The TAG was convened to provide input and guidance to the Companies for developing their Sage-grouse Mitigation Plans, including the HEA model. The TAG consists of a group of sage-grouse biologists and sage-grouse management experts from the Companies, BLM and cooperating agencies. As such, providing guidance on procedural and policy matters is beyond the scope and expertise of the TAG. Therefore, while the procedural and policy issues raised by the TAG (Table 4) are documented below to provide a complete record of the TAG discussions, these issues were only brought to the attention of Agency and Company representatives, as appropriate.

Table 4. Procedural and Policy Issues Identified During TAG Review

Issue	Description
Treatment of new or improved access roads used for both projects	The TAG identified that a potential issue may arise as a result of the two projects using the same new or improved access roads. Because the projects will likely not be constructed at the same time, there is a risk that the reclamation activities of the first project would be reversed if the second project used the same new or improved access roads.
HEA application in Wyoming Governor's Transmission Corridor	The TAG identified that differences in the requirements of the various state sage-grouse management plans and the BLM's Resource Management Plans may require different mitigation approaches in each state. Specifically, the State of Wyoming and BLM requirements for mitigation in the Wyoming Governor's Transmission Line Corridors and outside of core area habitats differs from requirements in other states.
Timing and content of final mitigation plans	The TAG discussed the timing requirements and desired content of the final mitigation plans and their relationship to the Record of Decision for each project. It is the Companies' intent to complete the final mitigation plans prior to the BLM's issuance of the Notice to Proceed for each project. The Companies will prepare a revised mitigation plan for consideration by BLM and each project's Record of Decision.
Consideration of required avoidance, minimization, and mitigation requirements	Several siting decisions were evaluated by the BLM and cooperating agencies during the alternatives development process. The preferred alternative for both projects requires deviations from the Applicant Proposed project alignments to avoid conservation easements (e.g., Tuttle and Cross Mountain Ranch in Colorado, easement in Strawberry PAC in Utah) for purposes of avoiding, minimizing, and mitigating impacts to greater sage-grouse and other resources. The BLM FEIS for both projects also analyzes alternate structure types that may be required to avoid, minimize, and mitigate impacts to greater sage-grouse. The TAG discussed that if these measures are intended to mitigate impacts to greater sage-grouse, additional mitigation may be unnecessary or may be reduced in its magnitude where appropriate.
Mitigation for sagebrush obligate species other than greater sage-grouse	During the TAG discussions, the issue of mitigation for sagebrush obligate species other than greater sage-grouse was raised. The TAG was convened to provide guidance to the Companies specific to their greater sage-grouse mitigation plans. The need for mitigation for other sagebrush-obligate species is a policy decision that is outside the purview of the TAG.

3.0 REFERENCES

Bureau of Land Management (BLM) and Western Area Power Administration. 2015. TransWest Express Transmission Project Final Environmental Impact Statement. BLM/WY/PL-15/012+5101. DOE/EIS-0450. April 2015. Available at: http://www.blm.gov/wy/st/en/info/NEPA/documents/hdd/transwest/FEIS.html

BLM. 2016. Final Environmental Impact Statement and Proposed Land-use Plan Amendments for the Energy Gateway South Transmission Project. BLM/WY/PL-14/009+5001. May 2016. Available at: https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=69112

APPENDIX A
TWE Direct Effect Assumption Tables

Habitat Equivalency Analysis Model Assumptions for Direct Impacts from the TWE Project on Greater Sage-Grouse

SWCA and TransWest Express LLC have worked with project engineers and the TAG to develop tables that describes the direct effects from the TWE Project on sage-grouse habitat and the modeling approach that will be used for each proposed infrastructure type and construction practice. The direct effects assumptions for the TWE Project, incorporating the TAG guidance, are presented in Table A-1. For the purposes of the HEA analyses, direct effects are defined as those areas where sage-grouse habitat would be physically altered, i.e. vegetation removed or soil disturbed. The vegetation disturbance types described in both tables are defined as follows:

- Cleared. Cleared of all vegetation, no intact root structure.
- Mowed. Mowed or bladed, root structure intact.
- Drive and Crush. Vegetation and soil left intact, root structure and seed bank remain in place.

Vegetation recovery times were determined by professional opinion of the TAG and were intended to be conservative (i.e., overestimate the recovery time in most environments in the project area).

TAG guidance that changed content in Table A-1 included the following:

- Detail on the access road types and slopes was added to increase consistency between this document and the project description in the Project EIS,
- Vegetation recovery times for mowed and drive and crush disturbance conditions were lengthened.

Table A-1. Direct Disturbance Assumptions for Typical Disturbance Types Associated with the TransWest Express Transmission Line Project.

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
Access Roads General[3]						
Existing, No Improvements	No New Disturbance	Paved/ Cleared/ Two-track	Permanent	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect
Existing, Improved	No New Disturbance	Cleared w/ improvements in existing disturbance	Permanent	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect
Existing, Improved	New Cleared Areas	Cleared w/ improvements outside existing disturbance	Permanent	Total loss of vegetation in new disturbed footprint (0 services)	Total loss of vegetation in new disturbed footprint (0 services)	All reclaimed areas return to baseline conditions following vegetation recovery timelines
Existing, Improved, all terrain types	16-24 feet wide	Two-track improved to Cleared	Temporary and permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

[2] Reclaimed areas will return to baseline conditions using the following the vegetation recovery assumptions, unless otherwise stated: Agricultural lands return to baseline habitat values in 1 year; grass dominated and wetland vegetation types return to baseline habitat values in 5 years; non-sagebrush shrub vegetation types return to baseline habitat values in 20 years; sagebrush vegetation types return to baseline habitat values in 100 years.

[3] Access roads general are those roads used to access the transmission line right-of-way

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
New, all terrain types	16 feet	Drive and Crush	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
Access Roads Where Not Co-located with Existing Transmission Line(s)[4]						
New, flat terrain, 0-8% slope	16 feet wide, 1.2 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	16 feet wide, 1.2 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	16 feet wide, 1.2 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[5]

[4] Access Roads Where Not Co-located with Existing Transmission Line(s) are roads used to access transmission structures in areas that do not have existing transmission infrastructure.

[5] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
New, rolling terrain, 8-15% slope	18 feet wide, 1.3 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	18 feet wide, 1.3 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	18 feet wide, 1.3 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[6]
New, steep terrain, 15-25% slope	22 feet wide, 1.8 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

[6] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
	22 feet wide, 1.8 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	22 feet wide, 1.8 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[7]
New, mountainous terrain, greater than 25% slope	24 feet wide, 2.7 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	24 feet wide, 2.7 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

[7] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
	24 feet wide, 2.7 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[8]
Access Roads Where Co-located with Existing Transmission Line(s)[9]						
New, flat terrain, 0-8% slope	16 feet wide, 0.8 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	16 feet wide, 0.8 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	16 feet wide, 0.8 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[10]

[8] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

[9] Access Roads Where Co-located with Existing Transmission Line(s) are roads where existing transmission line infrastructure is present. These roads are shorter than Access Roads Where Not Co-located with Existing Transmission Line(s) because they take advantage of the existing roads to reduce surface disturbance.

[10] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
New, rolling terrain, 8-15% slope	18 feet wide, 1.1 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	18 feet wide, 1.1 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	18 feet wide, 1.1 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[11]
New, steep terrain, 15-25% slope	22 feet wide, 1.6 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

[11] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
	22 feet wide, 1.6 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	22 feet wide, 1.6 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[12]
New, mountainous terrain, greater than 25% slope	24 feet wide, 2.4 miles of road per one mile of transmission lines	Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
	24 feet wide, 2.4 miles of road per one mile of transmission lines	Cleared	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

[12] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
	24 feet wide, 2.4 miles of road per one mile of transmission lines	Mowed	Temporary	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[13]
Transmission Line Structures						
600kV Guyed Lattice Tangent for DC transmission line	0.0014 acres 5 ft X 5 ft center mast 3 ft X 3 ft per guy location (4 locations)	Cleared at mast foundation and anchor locations	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
600 kV Self-supporting Lattice Tangent for DC transmission line	0.021 acres[14] 30 ft X 30 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
600 kV Self-supporting Tubular Steel Tangent for DC transmission line	0.00092 acres[14] (40 ft^2) 7 ft diameter drilled pier	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
600 kV Self-supporting lattice angle for DC transmission line	0.028 acres[14] 35 ft X 35 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)

[13] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

[14] Irrespective of structure height

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
600 kV Self-supporting lattice dead end for DC transmission line	0.037 acres[14] 40 ft x 40 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
600 kV Self-supporting Tubular Steel dead end / angle for DC transmission line	0.0023 acres[14] (100 ft^2) Two poles with 8 ft diameter drilled pier	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
Transmission Line Construction Work Areas						
Structure Work Areas	1.15 acres 200 ft X 250 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[15]
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

[15] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
Pulling/ Tensioning /Splicing Site	3.44 acres 600 ft X 250 ft Two at each heavy angle location	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[15]
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
Mid-span Pulling/ Tensioning/ Splicing Site	2.87 acres 500 ft X 250 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[16]

[16] Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
OPGW Pulling/ Tensioning/ Splicing Site	2.87 acres 500 ft X 250 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation and sagebrush vegetation types return to baseline habitat values on accelerated timeframe[16]
		Drive and crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
Fly Yard	7 acres	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
Batch Plant	5 acres	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
Material Storage Yard	20 acres	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
Fly yard, batch plant, material storage yard co-located with existing disturbance or facility	No New Disturbance	Cleared	Temporary or permanent	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect
Ancillary Facilities						
North Terminal	200 acres	Cleared	Permanent	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.
Ground Electrode Site	0.20 acres	Cleared	Permanent	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services),	Total loss of vegetation in footprint (0 services),
Ground Electrode Line tangent Structure	8 ft^2	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services),	Total loss of vegetation in footprint of disturbance (0 services),	Total loss of vegetation in footprint of disturbance (0 services),
Ground Electrode Line dead end Structure	16 ft^2	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services),	Total loss of vegetation in footprint of disturbance (0 services),	Total loss of vegetation in footprint of disturbance (0 services),

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
OPGW Regeneration Site	0.23 acres 100 ft X 100 ft	Cleared	Permanent	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.
Ancillary Facility Construction Work Areas						
North Terminal Material Storage Yard and Concrete Batch Plant	7.5 acres	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
Ground Electrode Facility Work Area	37 acres	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services)	All areas return to baseline conditions following vegetation recovery timelines
Ground Electrode Line Structure Work Area	0.115 acres 100 ft X 50 ft	Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
Ground Electrode Line Pulling/ Tensioning/ Splicing Site	0.344 acres 200 ft X 75 ft	Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

Project Facility/ Component Description	Direct Disturbance for 600kV DC Transmission Line			Model Milestone and Assumption		
	Typical Disturbance	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[2]
Ground Electrode Line Mid-span Pulling/ Tensioning/ Splicing Site	0.172 acres 100 ft X 75 ft	Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

APPENDIX B
EGS Direct Effect Assumption Tables

Habitat Equivalency Analysis Model Assumptions for Direct Impacts from the EGS Project on Greater Sage-Grouse

SWCA and Rocky Mountain Power have worked with project engineers and the TAG to develop tables that describe the direct effects from the EGS Project on sage-grouse habitat and the modeling approach that will be used for each proposed infrastructure type and construction practice. The direct effects assumptions for the EGS Project, incorporating the TAG guidance, are presented in Table B-1. For the purposes of the HEA analyses, direct effects are defined as those areas where sage-grouse habitat would be physically altered, i.e. vegetation removed or soil disturbed. The vegetation disturbance types described in both tables are defined as follows:

- Cleared. Cleared of all vegetation, no intact root structure.
- Mowed. Mowed or bladed, root structure intact.
- Drive and Crush. Vegetation and soil left intact, root structure and seed bank remain in place.

Vegetation recovery times were determined by professional opinion of the TAG and were intended to be conservative (i.e., overestimate the recovery time in most environments in the project area). The recovery times for mowed and drive and crush disturbance conditions were lengthened per TAG guidance.

Table B-1. Direct Disturbance Assumptions for Typical Disturbance Types Associated with the Energy Gateway South Transmission Line Project.

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
Access Roads						
Existing, No Improvements	No New Disturbance	Cleared	Permanent	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect	Same as Baseline – Zero additional effect
Existing, Improved, 0 to 15 percent slope	Final road area is 2.8 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft),	Secondary road improved. Areas cleared outside existing disturbance	Permanent	Total loss of vegetation in new disturbed footprint (0 services)	Total loss of vegetation in new disturbed footprint (0 services)	All reclaimed areas return to baseline conditions following vegetation recovery timelines
Existing, Improved, 0 to 15 percent slope	Final road area is 2.8 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Two-track improved to Cleared	Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines

17 Typical disturbance represents the typical or average anticipated disturbance associated with each project facility or component based on preliminary engineering. Following final project micro-siting and engineering, the project design will be updated and the HEA model will be run using the complete detailed project design.

18 Reclaimed areas will return to baseline conditions using the following vegetation recovery assumptions, unless otherwise stated: Agricultural lands return to baseline habitat values in 1 year; grass dominated and wetland vegetation types return to baseline habitat values in 5 years; non-sagebrush shrub vegetation types return to baseline habitat values in 20 years; sagebrush vegetation types return to baseline habitat values in 100 years

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
Existing, Improved, greater than 15 percent slope	Final road area is 6.7 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Secondary road improved. Areas cleared outside existing disturbance	Permanent	Total loss of vegetation in new disturbed footprint (0 services)	Total loss of vegetation in new disturbed footprint (0 services)	All reclaimed areas return to baseline conditions following vegetation recovery timelines
Existing, Improved, greater than 15 percent slope	Final road area is 6.7 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Two-track improved to cleared	Temporary and permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services)	Reclaimed areas return to baseline conditions following vegetation recovery timelines
New, 0-8 percent slope	3.2 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Cleared	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services),	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
New, 8-15 percent slope	4.5 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Cleared	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services),	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
New, greater than 15% slope	7.3 acres of ground disturbance per mile (includes pullout areas of 100 ft X 10 ft every 1,000 ft)	Cleared	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services),	All reclaimed areas return to baseline conditions following vegetation recovery timelines

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Mowed	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary and Permanent	Total loss of vegetation in 30x30 meter cells intersected by road centerline (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
Transmission Line Structures						
500kV Guyed Tangent for AC transmission line	0.0014 acres 5 ft X 5 ft center mast plus 3 ft X 3 ft at each guy location – 4 guys	Cleared at mast foundation and anchor locations	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
500kV H-Frame Tangent for AC transmission line	0.008 acres 35 ft X 10 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
500kV H-Frame Deadend for AC transmission line	0.01 acres 45 ft X 10 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
500kV Self-supporting Steel Lattice Tangent for AC transmission line	0.07 acres 55 ft X 55 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
500kV Self-supporting Steel Lattice Deadend for AC transmission line	0.15 acres 80 ft X 80 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
345kV H-Frame Tangent for AC transmission line	0.006 acres 25 ft X 10 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
345kV 3-pole Deadend for AC transmission line	0.01 acres 45 ft X 10 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
345kV Single-Circuit Monopole Tangent for AC transmission line	0.002 acres 10 ft X 10 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
345kV Single-Circuit Monopole Deadend for AC transmission line	0.009 acres 20 ft X 20 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
345kV Double-Circuit Monopole Tangent for AC transmission line	0.005 acres 15 ft X 15 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
345kV Double-Circuit Monopole Deadend for AC transmission line	0.014 acres 25 ft X 25 ft	Cleared around foundation	Permanent	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)	Total loss of vegetation in footprint of disturbance (0 services)
Transmission Line Construction Work Areas						
500kV Structure Work Area	1.43 acres 250 ft X 250 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
345kV Structure Work Area	0.69 acres 150 ft X 200 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
500kV Pulling/Tensioning Site	2.3 acres 250 ft X 400 ft Two sites every 3 to 5 miles	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
345kV Pulling/Tensioning Site	1.38 acres 150 by 400 feet One site per 345kV segment	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
500kV Mid-span Pulling/ Tensioning Site	2.3 acres 250 ft X 400 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
345kV Mid-span Pulling/ Tensioning Site	1.38 acres 150 ft X 400 ft	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
500kV and 345kV Splice Site	0.23 acres 100 ft X 100 ft One every 9,000 feet	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
500kV and 350kV Guard Structures Site	0.26 acres 150 ft X 75 ft Approximately 1.4 structures per 1 mile	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
500kV Multi-Purpose Construction Yards	30-acre site Approximately every 20 miles	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
345kV Multi-Purpose Construction Yard	10-acre site One site per 345kV segment	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
500kV Helicopter Fly Yards	15-acre site Approximately every 5 miles	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction
345kV Helicopter Fly Yards	15-acre site One site per 345kV segment	Cleared	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services).	All reclaimed areas return to baseline conditions following vegetation recovery timelines
		Mowed	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-sagebrush shrub vegetation types return to baseline habitat values in 10 years; sagebrush vegetation types return to baseline habitat values in 50 years
		Drive and Crush	Temporary	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Agricultural and, grass/forb-dominated areas return to baseline conditions	Non-big sagebrush shrubs return to baseline habitat values 5 years post-construction. Big sagebrush returns to baseline habitat values 15 years post construction

Project Facility/ Component Description	Direct Disturbance for AC Transmission Line Infrastructure			Model Milestone and Assumption		
	Typical Disturbance[17]	Disturbance Condition	Temporary or Permanent	Construction	Reclamation	Recovery[18]
Ancillary Facilities						
500kV OPGW Communication Regeneration Station	0.23 acres 100 ft X 100 ft typical One every 55 miles	Cleared	Permanent	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.
500kV Series Compensation Station	160 acres for each Two sites	Cleared	Permanent	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.	Total loss of vegetation in footprint (0 services), service reduction like a secondary road in adjacent cells.

APPENDIX C
Indirect Effects Approach Document

Indirect Effects Modeling Approach

Six members of the Technical Advisory Group (TAG) for the TransWest Express Transmission Projects (TWE Project) and Energy Gateway South Transmission Line Project (GWS Project) were selected to form a sub-group to develop a science-based approach to quantify indirect effects to greater sage-grouse *(Centrocercus urophasianus*, sage-grouse) for the TWE and GWS Projects. The HEA developed for the projects quantified direct and select indirect effects of transmission lines and associated infrastructure. The group of six was convened to develop methods that quantify additional indirect effects of transmission lines using the most current scientific information. Participants of the sub-group were:

- Dennis Saville, BLM
- Jason Sutter, BLM
- Lief Wiechman, USFWS
- Heather McPherron, USFWS
- Jon Kehmeier, SWCA Environmental Consultants
- Ann Widmer, SWCA Environmental Consultants

The U.S. Fish and Wildlife Service (USFWS) and the Bureau of Land Management (BLM) had previously developed an Indirect Effects Whitepaper (*Assessing Indirect Effects of Transmission Lines on Greater Sage-Grouse;* hereafter, Whitepaper), which they provided to TransWest Express LLC and Rocky Mountain Power in June 2015. The approach described in the Whitepaper was updated by the sub-group to incorporate new science and site-specific data, as well as to make the analytical approach compatible with the Habitat Equivalency Analysis (HEA) models developed for mitigation planning for the TWE and EGS projects (direct effects mitigation approach published in the FEIS for TWE [Appendix J, BLM 2015] and the DEIS for EGS [Appendix F, BLM 2014]). Two authors of the Whitepaper, Heather McPherron and Jason Sutter, participated in the sub-group.

The sub-group reviewed the literature describing indirect effects of transmission lines on sage-grouse, reaching out to the authors of relevant literature for clarification as needed. For each effect identified, the sub-group identified the mechanism, seasonal timing, extent, magnitude, and affected population (e.g., males/females, adults/chicks, nests/broods) to develop an analytical approach. The sub-group relied on the scientific literature for this information to the greatest extent possible, and then applied professional judgment where appropriate.

The sub-group met on the following dates:

- March 24, 2016 conference call
- April 6, 2016 conference call and webinar
- April 19, 2016 in person (Jason Sutter attended via call and webinar)
- April 21, 2016 conference call and webinar
- April 27, 2016 conference call and webinar
- April 29, 2016 conference call and webinar
- May 2, 2016 conference call and webinar
- May 17, 2016 conference call and webinar
- June 7, 2016 conference call

The TAG reviewed drafts of the approach developed by the sub-group and met with the sub-group to discuss the details of its application. Comments submitted to the sub-group on the approach were considered by the sub-group and incorporated as appropriate into the approach. These review meetings occurred on the following dates:

- May 16, 2016 conference call and webinar (stakeholders only)
- June 2, 2016 conference call and webinar (TransWest Express and Rocky Mountain Power)
- June 9, 2016 in person (entire TAG)

INDIRECT EFFECTS OF TRANSMISSION LINES

The Whitepaper identifies and describes three indirect effects: 1) avoidance (reduced use); 2) increased avian predator presence and predation; and 3) decreased productivity and survival. The sub-group elected to combine the latter two effects because the mechanisms of impact were the same (i.e., increased predator presence and predation affecting vital rates including productivity and survival). The two indirect effects evaluated by the sub-group were avoidance and increased avian predator presence and predation, which are the same effects identified in the Whitepaper. Consistent with the flexibilities identified in the Whitepaper, the sub-group updated the recommended methodology for quantifying the magnitude of indirect effects of transmission lines based on the best available scientific information combined with site-specific datasets and expert opinion. The following sections describe the subgroup's review of the literature and the mechanisms for indirect impacts from transmission lines.

Avoidance

There is evidence for decreased use of habitat (avoidance) by sage-grouse near power lines and transmission lines (e.g., Braun 1998)[19], however the specific mechanism, magnitude, and extent of avoidance is unknown. A spatial analysis of sage-grouse telemetry data from west-central Idaho detected significantly fewer occurrences of sage-grouse within 600-m of power lines than was predicted by the null model (Gillan et al. 2013); however the change in the magnitude of use was not evaluated (J. Gillan, New Mexico State University, personal communication with A. Widmer, SWCA, 7/7/2015). Models of sage-grouse scat (i.e., pellets) locations in the Wyoming Basin Ecoregional Assessment areas that considered biotic, abiotic, and anthropogenic effects identified distance to power line (POWER500 variable = e[Euclidean distance to feature in km/-500]) to be a significant predictor of sage-grouse habitat use (Hanser et al. 2011). The results of the study indicate an avoidance effect that decreases with distance from the line. However, the size, number, location, and configuration of power lines evaluated were not described by Hanser et al. (2011), creating uncertainty in how to incorporate other aspects of the results to the model of a new transmission line.

Expert opinion-based models of sage-grouse movement developed in Washington state predicted that power lines would significantly reduce sage-grouse movement to distances greater than 500-m; spatial patterns in gene flow and lek activity were consistent with model predictions (WHCWG 2012; Shirk et al. 2015). These results provide evidence of power line impacts suggesting that avoidance behavior has the potential to result in a population-level effect.

[19] In this document, 115 kilovolts was used as the threshold to differentiate between transmission lines and distribution (power) lines.

Increased Avian Predator Presence and Predation

Where perching opportunities on structures or other substrates (i.e. trees) are sparse or unevenly distributed, a new transmission line may attract avian predators and decrease sage-grouse population growth (Gibson et al. in review, Boarman 1993; Howe et al. 2014; Coates et al. 2014, Gregg et al. 1994; Schroeder and Baydack 2001; Holloran 2005; Lockyer et al. 2013, Knight and Kawashima 1993, Boarman and Heinrich 1999). In sagebrush habitats, which are typically devoid of many types of natural vertical structures (e.g. trees), ravens, and raptors have been shown to select power lines as perching, roosting, and nesting substrates (Kristan and Boarman 2007, Howe et al. 2014). In areas/habitats Where perching or nesting opportunities are readily available (e.g., adjacent to forested habitats, other transmission line structures, or other tall infrastructure, etc.), the impacts of a new transmission line would not be expected to result in a substantial increase in perching opportunities or avian predators.

In sagebrush habitats, which are typically devoid of many types of natural vertical structures (e.g. trees), ravens, and raptors have been shown to select power lines as perching, roosting, and nesting substrates (Kristan and Boarman 2007, Howe et al. 2014). Corvids, particularly ravens, have been documented as the most common avian nest predators (Vander Haegen et al. 2002), accounting for almost 50% of depredations in some locations (Lockyer et al. 2013). Nest depredation is the primary cause of sage-grouse nest failure (Gregg et al. 1994; Holloran 2005; Lockyer et al. 2013), and predation-related sage-grouse chick and fledgling mortality have a significant influence on sage-grouse population growth rate (Guttery et al. 2013; Gibson et al. In Review).

Gibson et al. (In Review) quantified the effects of the Falcon-to-Gondor 345 kV Transmission Line in Nevada on two sage-grouse populations over 10 years of operation. This study provides strong evidence of transmission line effects to sage-grouse demographic parameters (female survival, nest site selection and success, and brood survival), largely in part because of the length of the study, the large number of data points collected (sage-grouse locations and habitat measurements), and the statistical analysis that isolated the effects of the transmission line from the effects of habitat quality and other covariates. The authors identified several demographic parameters that were affected by the transmission line, and variation in the magnitude of the effect was largely explained by raven abundance (Table 1). The authors also took the analysis a step further to estimate the impact that transmission lines have on females, nests, and chicks at the population level. Using lek attendance as a surrogate for population size, the authors estimated that population growth was reduced by 3% directly below the transmission line and the effect decreased linearly with distance to 0% at 10 km from the Falcon-to-Gondor transmission line. The authors recommended that the 3% linear decay function be used as a method to quantify the impacts of transmission lines on greater sage-grouse.

The review of increased avian presence and predation is consistent with the recommendations made in the Whitepaper. The sub-group found that the information contained in the Gibson et al. (In Review) manuscript is the best available scientific information and can be used to update the recommendations contained in the Whitepaper.

Table 1. Summary of the transmission line effects to sage-grouse demographic parameters evaluated by Gibson et al. (In Review). **All numbers are provisional pending peer review and publication.**

Demographic Parameter Evaluated	Effect of the Falcon-Gondor Transmission Line (FG)	Correlation of Effect With Raven Abundance
Nesting propensity (locations of female grouse during the breeding season)	• First nests: no significant effect • Second nests: nesting propensity decreased 0.038 per km with distance from FG	None noted
Nest site selection (locations of nests)	• Landscape scale: evidence for an effect dissipating at 10.5 km • Local scale: probability of nest site selection increases from approximately 0.5 adjacent to FG to approximately 0.69 at 10.5 km from FG	Raven abundance explained significant annual variation in the effect
Nest survival	• Nests within 9.2 km of FG had reduced probability of hatching • Nest survival increased by 0.011 for each additional km a nest was located from FG	Raven abundance explained significant annual variation in the effect
Brood site selection	• Landscape scale: no effect • Local scale: Some evidence of avoidance, attributed by authors to patterns in nest placement.	Raven abundance explained significant annual variation in the effect
Pre-fledging chick survival (first two weeks)	• Survival increased 0.017 for every 1 km moved from FG. • Effect dissipated with age (>2 weeks)	Raven abundance explained significant annual variation in the effect
Female survival	• Survival increased 0.003 for every 1 km moved from FG (weak effect)	None noted
Male survival	• No effect	None noted
Lek recruitment and population growth rates	• Leks further from FG had higher population growth rates as measured by lek attendance • Population growth rates increased 0.003 per 1 km moved from the FG to 10 km (i.e., there was a 3% reduction in population growth beneath FG which decreased linearly to 0% at 10 km from FG)[1]	Raven abundance explained significant annual variation in the effect

[1] Larger in magnitude than the effect of the FG alone, population growth rates increased 0.008 per 1 km moved from the lines for all power lines (transmission lines and distribution lines) to 10 km.

INDIRECT EFFECTS ANALYTICAL APPROACH

The following sections describe the analytical approach developed by the sub-group to quantify indirect effects of transmission lines on greater sage-grouse for the TWE and GWS Projects. The approach is based on the sub-group's review of the best available scientific literature while also considering site-specific datasets and expert knowledge of the habitats and populations that could be impacted by these transmission line projects.

Baseline Habitat Services Map

Transmission line indirect effects for the TWE and GWS Projects would be measured in habitat service losses to be compatible with the HEAs the projects are using for mitigation planning. Advantages of using the HEA process include: 1) the effects assessment can account for variations in habitat quality (i.e., an impact to high quality habitat would result in more mitigation than the same impact to low quality habitat); 2) the habitat service loss is modeled over time; 3) habitat improvement projects suitable for mitigation have already been identified and their benefit quantified in habitat service gains.

Baseline maps of habitat services have been developed for both projects at a 30 m^2 grid cell resolution using a sage-grouse habitat service metric (BLM 2015 at Appendix D at Appendix K, BLM 2016 at Appendix K), where every cell is scored independently. The habitat service score for each cell is a measure of habitat quality adjusted for anthropogenic influences and other disturbances; however, the baseline habitat services modeled to date do not account for the indirect effects of existing transmission lines. The sub-group's approach applies the effects of the existing transmission lines to the baseline maps to create "new" baseline maps to which the modeled project effects would be applied, assuming that existing transmission lines have the same level of effect as the proposed transmission lines.

Habitat Service Reduction Effect Zones

Two indirect effect zones were identified:

- Avoidance (0-600 m)
- Decreased Population Growth (0 m to 10,000 m)

Avoidance is a behavioral response by sage-grouse that that has been documented in proximity transmission lines, although the mechanism for avoidance is unknown. It results in decreased use of habitat in areas within 600 meters of a transmission line. Using professional judgment, the sub-group decided that avoidance effect would increase with the number of transmission lines, where the lines are sited less than 600 m apart.

Decreased population growth is not behavioral and instead is a result of changes in population demographics (e.g., nest success, brood survival, etc.) that lead to the population level impact described in Gibson et al. (In Review). Raven abundance is the primary mechanism identified by the sub-group for decreased population growth.

Both effects occur across all seasons; apply to both sexes and all age groups; and occur for the operating lifetime of the project. The magnitude of the indirect effect is described for each zone below.

Avoidance (0-600 m)

The sub-group concluded that reduced use (avoidance) near transmission line is greatest directly under the line, decreasing out to 600 m based on peer-reviewed literature. The subgroup's approach models the avoidance effect only in cells with relatively high habitat service scores, which represents the high quality habitat where sage-grouse telemetry data from Wyoming, Colorado, and Utah indicate the majority of sage-grouse habitat use occurs. The sub-group determined that this approach was appropriate because the impacts of avoidance would primarily occur where sage-grouse use is consistently observed. Marginal or unsuitable habitats would not have the avoidance impact applied because, although these areas are occasionally used by sage-grouse, use is often associated with movement patterns between patches of high quality, suitable habitat. These movement patterns include use of habitats within and adjacent to transmission line corridors and other energy corridors.

The sub-group's approach models avoidance as a habitat service loss that decreases linearly from 75% loss immediately below the line to 0% loss 600 m from the line[20]. This is expressed [1.25(0.6 - x)*habitat service score], where 'x' is the distance from the transmission line (in km)[21]. The sub-group's approach applies avoidance effects to the range of scores that contain 85% of sage-grouse re-locations in site-specific telemetry datasets provided for each state (Figures 1-3)[22]. Because of the relatively small sample size in Utah (N = 6,300), the data from Colorado and Utah were pooled (N = 35,300) to determine the range of scores that would be included. For consistency purposes, 85% was also used in Wyoming although this resulted in a slightly broader distribution of habitat service scores. Where this avoidance effect zone overlaps the decreased population growth zone described below, the highest level of habitat service loss is applied.

[20] Professional judgment was used by the sub-group to develop the 75% reduction in use immediately below the line with the likelihood of use increasing with increasing distance from the transmission line. Gaussian, negative exponential and linear decay curves were considered by the sub-group. The sub-group recommends using the linear decay function because it falls in between the other two curves and is straightforward to apply in the model.

[21] 1.25 is calculated by dividing 0.75 by 0.6. The equation produces a line that crosses the x axis at 0.6 and has a y intercept of 0.75.

[22] The use of an 85% confidence level is consistent with the literature. Gibson et al. (In Review) considered an effect to be significant if the 80% confidence intervals on the effect estimate did not overlap zero. The use of 85% would be more conservative than the thresholds recommended by Gibson et al (In Review). In Wyoming, avoidance zone impacts would be applied to all habitat service scores between 17 and 24 (Figure 1). In Colorado and Utah, avoidance zone impacts would be applied to all habitat service scores between 20 and 24 (Figures 2 and 3).

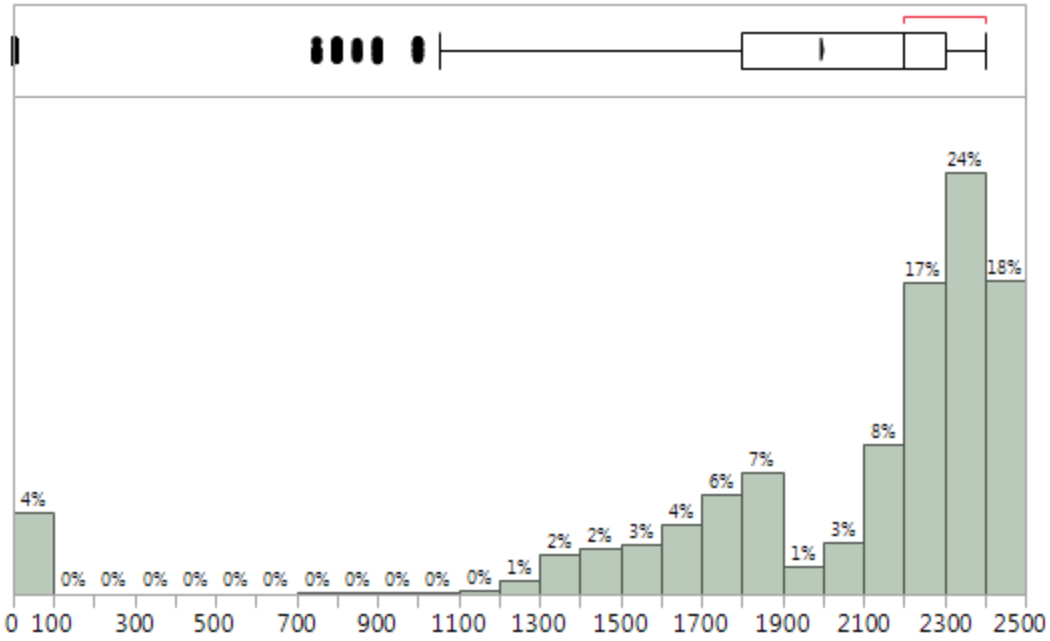

Figure 1. Histogram and outlier box plot of HEA scores extracted to 356,000 sage-grouse locations for Wyoming using data collected in support of the Chokecherry and Sierra Madre Wind Energy Project in Carbon, County, Wyoming. X axis is HEA score* 100, Y axis is percentage of total.

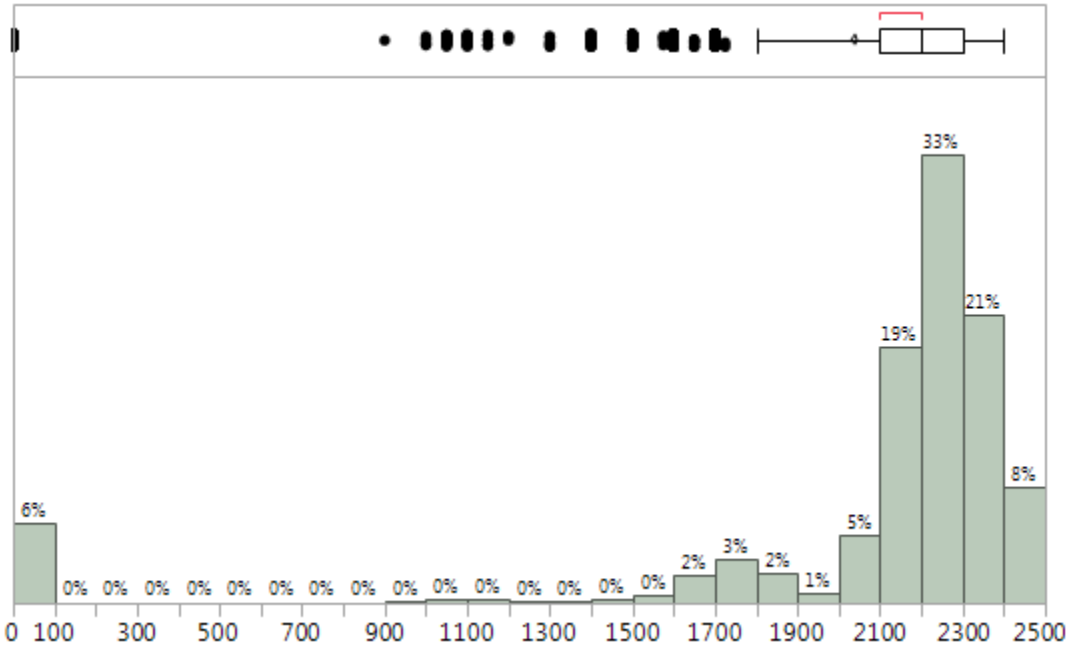

Figure 2. Histogram and outlier box plot of HEA scores extracted to 29,000 sage-grouse locations collected by Colorado Parks and Wildlife. X axis is HEA score* 100, Y axis is percentage of total.

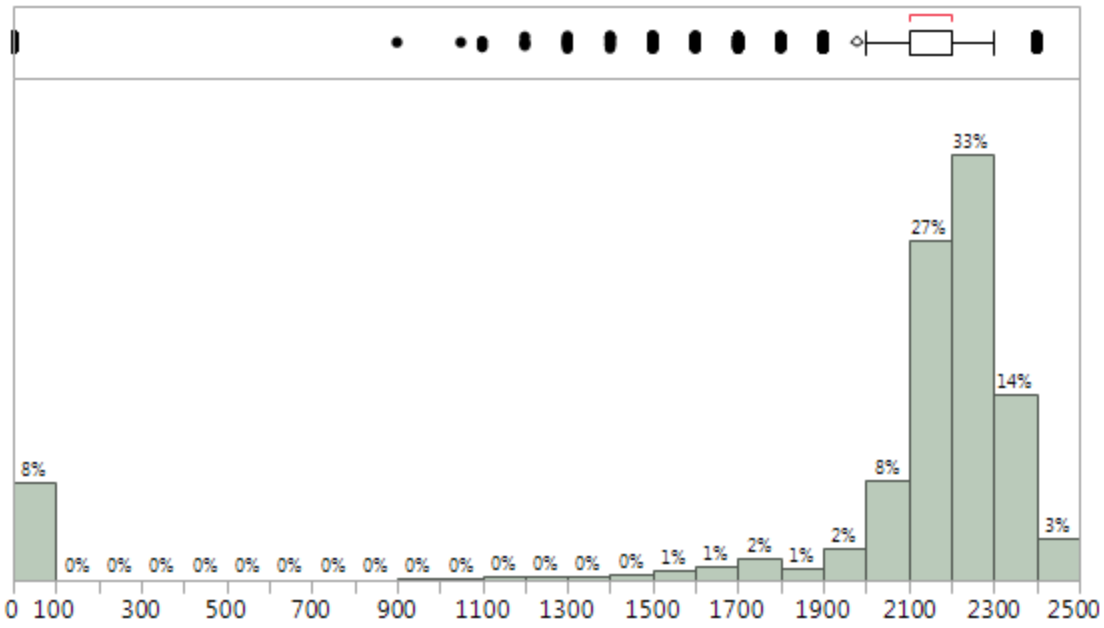

Figure 3. Histogram and outlier box plot of HEA scores extracted to 6,300 sage-grouse locations collected by Brigham Young University. X axis is HEA score* 100, Y axis is percentage of total.

Decreased Population Growth (0 m to 10,000 m)

The sub-group's approach models decreased population growth in all occupied habitat, regardless of habitat service score. For the purposes of the approach, occupied habitat is defined as the BLM's Priority Habitat Management Area (PHMA) and General Habitat Management Area (GHMA) boundaries as defined in BLM's 2015 Approved Resource Management Plan Amendment for greater sage-grouse issued for each state, which closely matches each state's sage-grouse management area boundaries. The sub-group reviewed the boundaries with representatives from each state wildlife management agency and concluded that use of the BLM PHMA and GHMA boundaries adequately captures the known occupied range of sage-grouse in each state.

The sub-group's approach models decreased population growth as a habitat service loss that decreases linearly from 3%[23] directly below the line to 0% loss 10,000 m (10 km) from the line[24]. This is expressed [0.003(10-x)*habitat service score], where 'x' is the distance from the line (in km). The extent of the impact would be 10 km to either side of the transmission line to be consistent with recommendations made by Gibson et al. (In Review) for the Falcon-to-Gondor Transmission Line.

APPLICATION OF THE INDIRECT EFFECTS ANALYTICAL APPROACH

The following sections describe how the sub-group's Indirect Effects Analytical Approach would be applied for a number of scenarios including new transmission line rights-of-way and co-location with existing lines.

Service Reductions to Account for Single Transmission Lines

Calculation of the indirect effects of a single transmission line would follow the approach illustrated in Figure 4. In this example, the avoidance impacts and population level impacts described above would be applied where the indirect effects of other transmission lines have not already resulted in decreases to baseline habitat conditions, or where only the decreased population growth buffers overlap. The baseline habitat service score is the habitat quality adjusted for anthropogenic influences and other disturbances, excluding transmission lines, as calculated using the metric described in BLM 2015 and BLM 2016. Calculation examples are provided in Attachment A.

[23] This value is provisional until Gibson et al. (In Review) is published, because it has the potential to change during the peer review process.

[24] Another magnitude of effect was considered by the sub-group which corresponded with the decreased population growth measured by Gibson et al. (In Review) around all transmission and distribution lines ("all power lines"). This effect was a combined 8% decreased population growth when considering all transmission and distribution lines on the landscape, including FG. Ultimately, the sub-group decided that application of the all power lines level effect was not appropriate for these projects because distribution line data is not available for the entire project area. Without accurate and complete distribution line data, the baseline condition with existing power lines could not be accurately characterized and the baseline habitat service scores would be inaccurate.

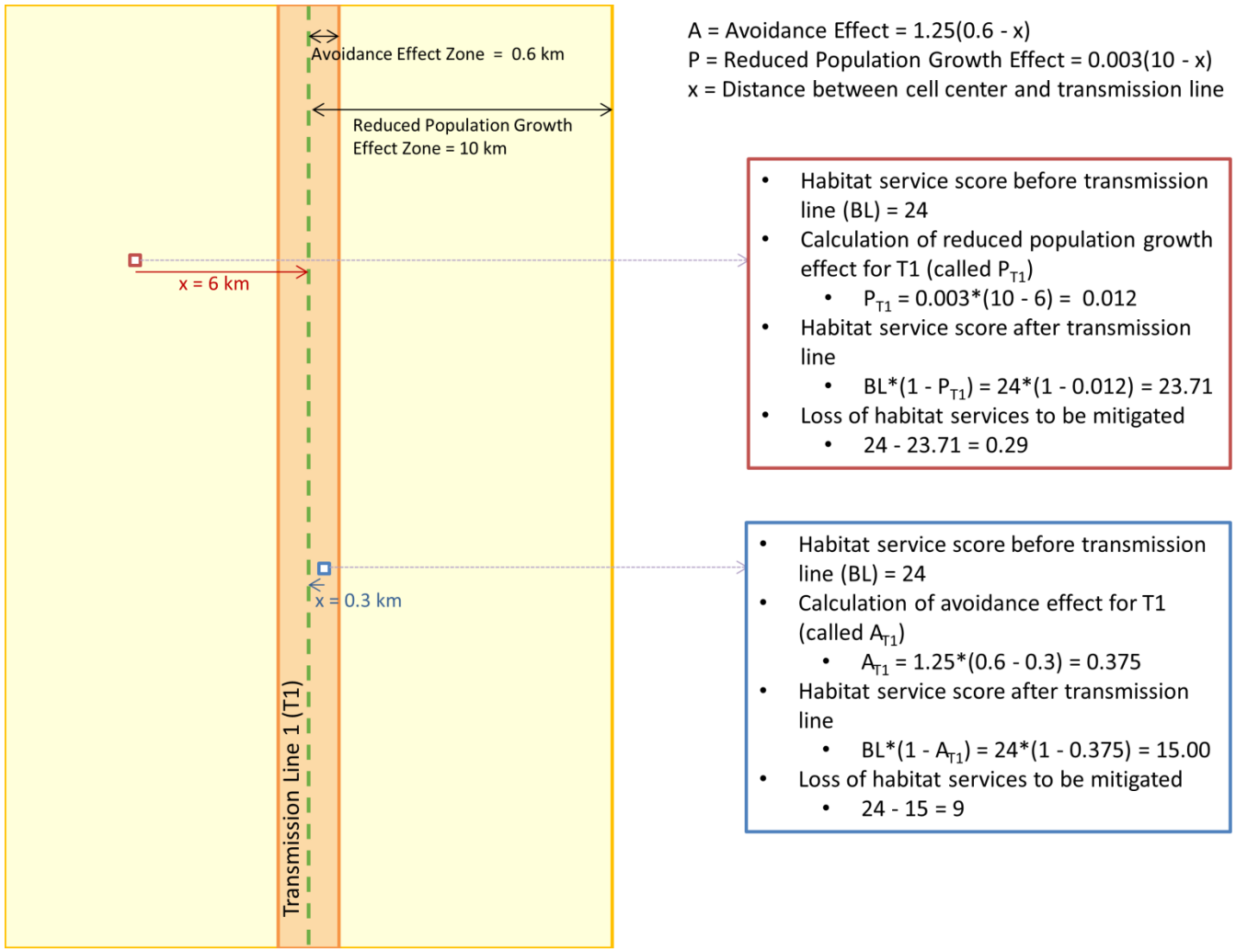

Figure 4. Calculation of the habitat service loss with the construction of a single transmission line in each of the indirect impact zones. Note that impacts in the avoidance zone would only be applied to the state-specific range of habitat service values that account for 85% of tagged bird locations.

Service Reductions Where Transmission Lines are Co-located

Co-location of transmission lines is an important factor considered by the sub-group in developing its approach for quantifying indirect effects. Where transmission lines[25] are located within 10 km of one another, the indirect effect zones would overlap. The sub-group's approach calculates the cumulative impact of the avoidance and decreased population growth zones differently depending on the distance between the transmission lines and which zones are overlapping.

Ravens use transmission structures for perching and nesting (Howe et al. 2014), and the predation pressure by nesting ravens accounts for a large proportion of sage-grouse nest depredation (Lockyer et al. 2013). Nesting ravens are territorial and generally nest more than 1,000 m apart (Burton and Mueller 2006). Where the transmission lines are located less than 1,000 m apart, this territorial behavior is expected to largely exclude new ravens and prevent a substantial increase in local predation pressure. Where the transmission lines are located more than 1,000 m apart, new potential nesting territories could be created and the predation pressure would be expected to increase in the overlap between the two 10-km effect zones. This same approach would be used when the transmission line is proximate to forested habitats. Where the transmission lines are located less than 1,000 m from forested habitats[26], existing territorial behavior is expected to largely exclude new ravens and prevent a substantial increase in local predation pressure. Where the transmission lines are located more than 1,000 m from forested habitats, new potential nesting territories could be created and the predation pressure would be expected to increase in the overlap between the two 10-km effect zones.

Overlapping Zones Where the Transmission Lines are Spaced <1,000 m Apart

This section describes the sub-group's approach for modeling the cumulative impact of transmission lines that are less than 1,000 m apart, where nesting ravens on the first line are expected to territorially exclude new ravens and prevent a substantial increase in local avian predation pressure. While a substantial increase in avian predation pressure is not anticipated, the addition of a new transmission line to an existing transmission line corridor is still expected to increase the impact of the corridor on sage-grouse at some level and increase the habitat services lost.

Avoidance Zone (0 m to 600 m)

Where the avoidance zone of a new transmission line overlaps the avoidance zone or the decreased population growth zone of an existing transmission line, the service level would be proportionally reduced.

Decreased Population Growth Zone (0 m to 10,000 m)

Where the decreased population growth zone of one transmission line overlaps an avoidance zone or a decreased population growth zone of another, the service level would be adjusted to reflect the largest level effect (i.e., the effect of the closest transmission line) and the change in the habitat service level with the addition of the new transmission line would be calculated. Where the habitat service reduction for a new transmission line is less than the habitat service reduction for the existing transmission line (when the

[25] These rules apply to all transmission lines on the landscape, not just TWE and GWS.

[26] Treed habitats found within the sage-grouse landscape, excluding pinion-juniper.

existing transmission line is closer to the habitat being impacted), the effect would be attributable to the existing transmission line so that no additional mitigation would be due for the new transmission line.

The calculation of habitat service scores to account for the indirect effects of two transmission lines spaced <1,000 m apart are described in Attachment B. The baseline habitat service score is the habitat quality adjusted for anthropogenic influences and other disturbances, excluding transmission lines, as calculated using the metric described in BLM 2015 and BLM 2016.

Overlapping Zones Where the Transmission Lines are Spaced >1,000 m Apart

This section describes the sub-group's approach for modeling the cumulative indirect effects of transmission lines that are more than 1,000 m apart, where ravens are expected to nest on both transmission lines and increase the local predation pressure and the associated population level impact.

Avoidance Zone (0 m to 600 m)

The calculation method would be the same as described for transmission lines spaced <1,000 m apart.

Decreased Population Growth Zone (0 m to 10,000 m)

Where the decreased population growth zone overlaps an avoidance zone or a decreased population growth zone, the service level is proportionally reduced.

The calculation of habitat service scores that have been adjusted for the indirect effects of two transmission lines co-located spaced >1,000 m apart are described in Attachment C. The baseline habitat service score is the habitat quality adjusted for anthropogenic influences and other disturbances, excluding transmission lines, as calculated using the metric described in BLM 2015 and BLM 2016.

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ATTACHMENT A: Calculation of Habitat Service Reductions to Account for Single Transmission Lines

This attachment provides the equations and examples for the calculation of habitat service losses due to indirect effects of a single transmission line. Habitat service losses at any one point in time are calculated as the difference between the habitat services present at that milestone (M_1) and those that were present at baseline (M_0). The equations for the habitat services present are provided in Figure A-1. In the case of a single transmission line, the baseline condition includes no existing transmission line effects and is quantified using the HEA metric published in the Project EIS.

Example A-1. Cell is 5 km from the transmission line (T1) and falls within the reduced population growth zone. The baseline habitat service score is 20.

$M_0 = 20$

$M_1 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 - 5]) = 19.7$

$M_0 – M_1 = 20 - 19.7 = 0.3$ habitat services lost due to T1

Example A-2. Cell is 0.3 km of the transmission line (T1) and falls within the avoidance zone. The baseline habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = 20$

$M_1 = BL*(1 - A_{T1}) = 20*(1 – 1.25*[0.6 – 0.3]) = 12.5$

$M_0 – M_1 = 20 – 12.5 = 7.5$ habitat services lost due to T1

These calculations of habitat services lost are completed for every 30x30-meter cell within 10 km of the project footprint for every year of the lifetime of the project to produce the input for the HEA that is used to calculate the mitigation due for indirect effects.

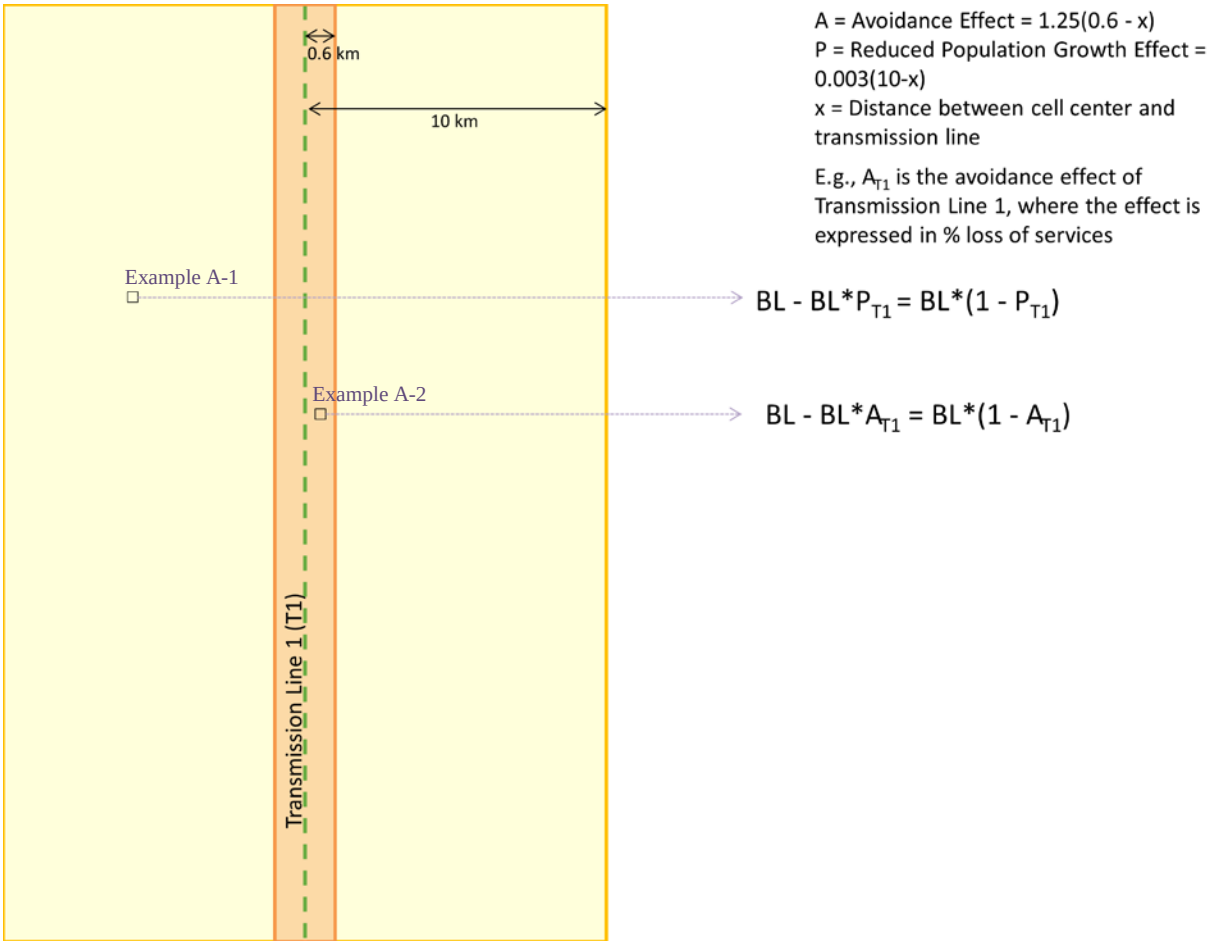

Figure A-1. Calculation of remaining habitat service score by applying the indirect effects of one transmission line to the baseline service score. Note that impacts in the avoidance zone would only be applied to the state-specific range of habitat service values that account for 85% of tagged bird locations. This approach would be used for all existing transmission lines to establish new baseline habitat services and would be applied for new transmission lines where they are not located within 10 km of an existing transmission line.

ATTACHMENT B: Calculation of Habitat Service Reductions Where Transmission Lines are Co-located and Spaced <1,000 m Apart

This attachment provides the equations and examples for the calculation of habitat service losses due to indirect effects of two or more transmission lines located less than 1,000 m apart. Habitat service losses at any one point in time are calculated as the difference between the habitat services present at that milestone (M_1) and those that were present at baseline (M_0). In the case of two transmission lines, as illustrated in Figure B-1, the habitat services at M_0 account for the effects of an existing transmission line (T1) and the effect of that single transmission line is calculated using the equations in Figure A-1. The equations in Figure B-1 are used to calculate the habitat services present after the addition of a second transmission line (T2) at M_1 or more than one transmission line at M_0.

Example B-1. Cell is 9.5 km from the existing transmission line (falls within the reduced population growth zone of T1) and greater than 10 km from the new transmission line (no effect of T2). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_1 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_0 – M_1 = 0$ habitat services lost with the addition of T2

Example B-2. Cell is 5 km from the existing transmission line (falls within the reduced population growth zone of T1) and 5.8 km from the new transmission line (falls within the reduced population growth zone of T2, but the addition of T2 does not increase the effect). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 5.0]) = 19.7$

$M_1 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 5.0]) = 19.7$

$M_0 – M_1 = 0$ habitat services lost with the addition of T2

Example B-3. Cell is 0.3 km from the existing transmission line (falls within the avoidance zone of T1) and 1.1 km from the new transmission line (falls within the reduced population growth zone of T2, but the addition of T2 does not increase the effect). The unadjusted metric habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = BL*(1 - A_{T1}) = 20*(1 – 1.25*[0.6 – 0.3]) = 12.5$

$M_1 = BL*(1 - A_{T1}) = 20*(1 – 1.25*[0.6 – 0.3]) = 12.5$

$M_0 – M_1 = 0$ habitat services lost with the addition of T2

Example B-4. Cell is 0.4 km from the existing transmission line (falls within the avoidance zone of T1) and 0.4 km from the new transmission line (falls within the avoidance zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = BL*(1 - A_{T1}) = 20*(1 – 1.25*[0.6 – 0.4]) = 15$

$M_1 = BL*(1 - A_{T1})*(1-A_{T2}) = 20*(1 – 1.25*[0.6 – 0.4]) *(1 – 1.25*[0.6 – 0.4]) = 11.25$

$M_0 – M_1 = 15 – 11.25 = 3.75$ habitat services lost with the addition of T2

Example B-5. Cell is 0.9 km from the existing transmission line (falls within the reduced population growth zone of T1) and 0.1 km from the new transmission line (falls within the avoidance zone of T2, and the effect is increased). The unadjusted metric habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 0.9]) = 19.454$

$M_1 = BL*(1-A_{T2}) = 20*(1 – 1.25*[0.6 – 0.1]) = 7.5$

$M_0 – M_1 = 19.454 – 7.5 = 11.954$ habitat services lost with the addition of T2

Example B-6. Cell is 5.8 km from the existing transmission line (falls within the reduced population growth zone of T1) and 5 km from the new transmission line (falls within the reduced population growth zone of T2, and the effect is increased). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 5.8]) = 19.748$

$M_1 = BL*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 5.0]) = 19.70$

$M_0 – M_1 = 19.748 – 19.70 = 0.048$ habitat services lost with the addition of T2

Example B-7. Cell is 10.3 km from the existing transmission line (no effect of T1) and 9.5 km from the new transmission line (falls within the reduced population growth zone of T2). The unadjusted metric habitat service score is 20.

$M_0 = 20$

$M_1 = BL*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_0 – M_1 = 20 – 19.97 = 0.03$ habitat services lost with the addition of T2

These calculations of habitat services lost are completed for every 30x30-meter cell within 10 km of the project footprint for every year of the lifetime of the project to produce the input for the HEA that is used to calculate the mitigation due for indirect effects.

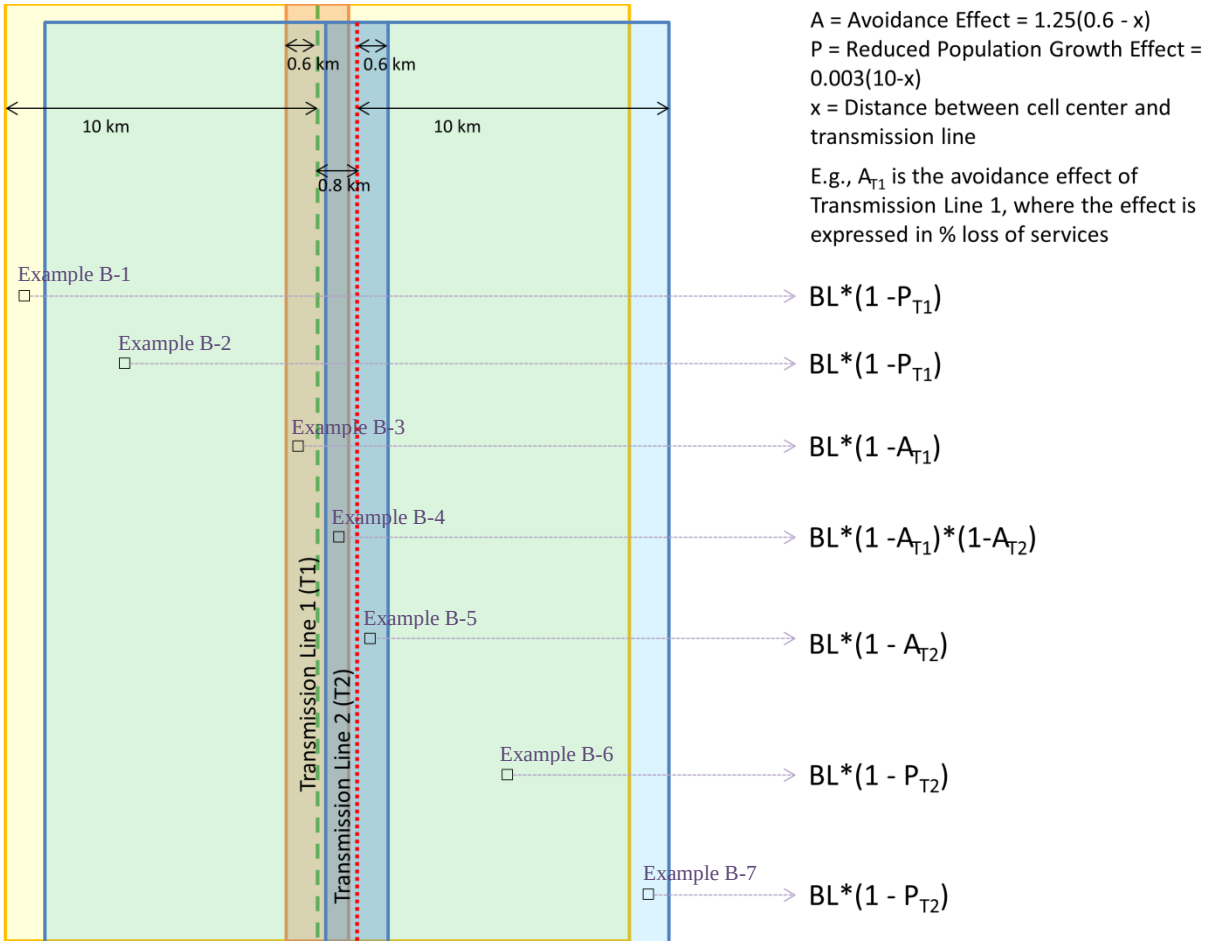

Figure B-1. Calculation of remaining habitat service score by applying the indirect effects of two transmission lines spaced <1,000 m apart to the baseline service score. Note that impacts in the avoidance zone would only be applied to the state-specific range of habitat service values that account for 85% of tagged bird locations. This approach would be used for all existing transmission lines to establish new baseline habitat services and would be applied for new transmission lines when they are located within 1 km of an existing transmission line(s). In this example, T2 represents a new transmission line being co-located with the existing T1 line.

ATTACHMENT C: Calculation of Habitat Service Reductions Where Transmission Lines are Co-located and Spaced >1,000 m Apart

This attachment provides the equations and examples for the calculation of habitat service losses due to indirect effects of two or more transmission lines located greater than 1,000 m apart. Habitat service losses at any one point in time are calculated as the difference between the habitat services present at that milestone (M_1) and those that were present at baseline (M_0). In the case of two transmission lines, as illustrated in Figure C-1, the habitat services at M_0 account for the effects of an existing transmission line (T1) and the effect of that single transmission line is calculated using the equations in Figure A-1. The equations in Figure C-1 are used to calculate the habitat services present after the addition of a second transmission line (T2) at M_1 or more than one transmission line at M_0.

Example C-1. Cell is 9.5 km from the existing transmission line (falls within the reduced population growth zone of T1) and greater than 10 km from the new transmission line (no effect of T2). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_1 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_0 – M_1 = 0$ habitat services lost with the addition of T2

Example C-2. Cell is 3 km from the existing transmission line (falls within the reduced population growth zone of T1) and 5.5 km from the new transmission line (falls within the reduced population growth zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 3.0]) = 19.58$

$M_1 = BL*(1 - P_{T1})*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 3.0])*(1 - 0.003*[10 – 5.5]) = 19.316$

$M_0 – M_1 = 0.264$ habitat services lost with the addition of T2

Example C-3. Cell is 0.3 km from the existing transmission line (falls within the avoidance zone of T1) and 2.8 km from the new transmission line (falls within the reduced population growth zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = BL*(1 - A_{T1}) = 20*(1 – 1.25*[0.6 – 0.3]) = 12.5$

$M_1 = BL*(1 - A_{T1})*(1 - P_{T2}) = 20*(1 – 1.25*[0.6 – 0.3])*(1 - 0.003*[10 – 2.8]) = 12.23$

$M_0 – M_1 = 12.5 - 12.23 = 0.27$ habitat services lost with the addition of T2

Example C-4. Cell is 1.2 km from the existing transmission line (falls within the reduced population growth zone of T1) and 1.3 km from the new transmission line (falls within the reduced population growth zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 1.2]) = 19.472$

$M_1 = BL*(1 - P_{T1})*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 1.2])*(1 - 0.003*[10 – 1.3]) = 18.964$

$M_0 – M_1 = 19.472 - 18.964 = 0.508$ habitat services lost with the addition of T2

Example C-5. Cell is 2.4 km from the existing transmission line (falls within the reduced population growth zone of T1) and 0.1 km from the new transmission line (falls within the avoidance zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20. Note that the avoidance zone impacts would only be applied using the state-specific habitat service score thresholds (20-24 in Colorado and Utah and 17-24 in Wyoming).

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 2.4]) = 19.544$

$M_1 = BL*(1 - P_{T1})*(1 - A_{T2}) = 20*(1 - 0.003*[10 – 2.4])*(1 – 1.25*[0.6 – 0.1]) = 7.329$

$M_0 – M_1 = 19.544 – 7.329 = 12.215$ habitat services lost with the addition of T2

Example C-6. Cell is 4.5 km from the existing transmission line (falls within the reduced population growth zone of T1) and 2 km from the new transmission line (falls within the reduced population growth zone of T2, and the services are proportionally reduced). The unadjusted metric habitat service score is 20.

$M_0 = BL*(1 - P_{T1}) = 20*(1 - 0.003*[10 – 4.5]) = 19.67$

$M_1 = BL*(1 - P_{T1})*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 4.5])*(1 - 0.003*[10 – 2.0]) = 19.198$

$M_0 – M_1 = 19.67 – 19.198 = 0.472$ habitat services lost with the addition of T2

Example C-7. Cell is 12 km from the existing transmission line (no effect of T1) and 9.5 km from the new transmission line (falls within the reduced population growth zone of T2). The unadjusted metric habitat service score is 20.

$M_0 = 20$

$M_1 = BL*(1 - P_{T2}) = 20*(1 - 0.003*[10 – 9.5]) = 19.97$

$M_0 – M_1 = 20 – 19.97 = 0.03$ habitat services lost with the addition of T2

These calculations of habitat services lost are completed for every 30x30-meter cell within 10 km of the project footprint for every year of the lifetime of the project to produce the input for the HEA that is used to calculate the mitigation due for indirect impacts.

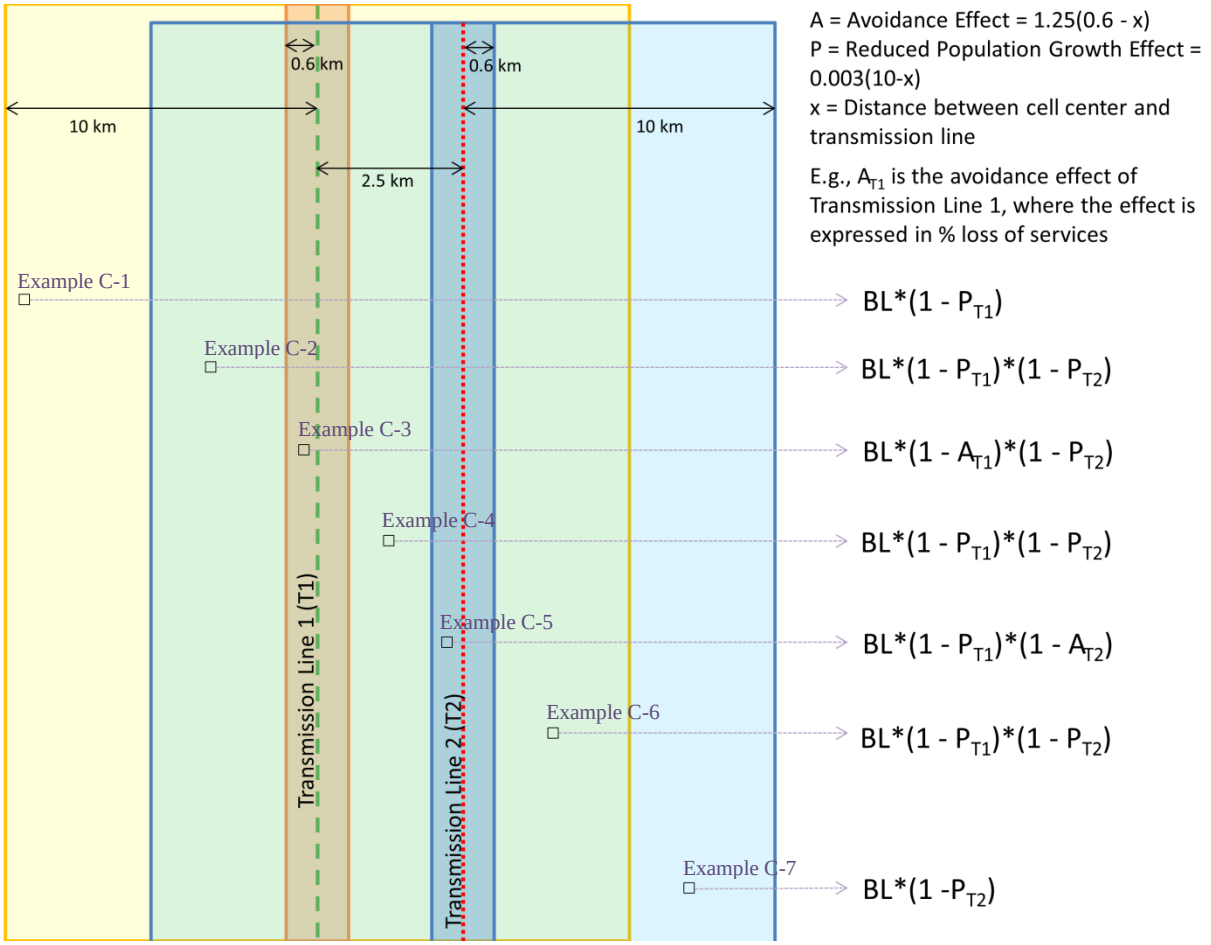

Figure C-1. Calculation of remaining habitat service score by applying the indirect effects of two transmission lines spaced >1,000 m apart to the baseline service score. Note that impacts in the avoidance zone would only be applied to the state-specific range of habitat service values that account for 85% of tagged bird locations. This approach would be used for all existing transmission lines to establish new baseline habitat services and would be applied for new transmission lines when they are located more than 1 km from an existing transmission line(s) and less than 10 km from an existing transmission line(s). In this example, T2 represents a new transmission line being co-located more than 1 km from the existing T1 line.

Appendix C – Legal Descriptions

ENERGY GATEWAY SOUTH
WYW 174597
COC 72907
UTU 87237
LEGAL DESCRIPTION
PERMANENT RIGHT-OF-WAY

TRANSMISSION LINE

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Carbon County

T. 24 N., R 80 W.,
sec. 32, S1/2SW1/4 and S1/2SE1/4.
T. 24 N., R. 81 W.,
sec. 34, S1/2SW1/4 and S1/2SE1/4.
T. 23 N., R. 81 W.,
sec. 4, lots 2 and 3, S1/2NW1/4, and NW1/4SW1/4;
sec. 8, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 18, E1/2NE1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4.
T. 23 N., R. 82 W.,
sec. 24, E1/2SE1/4;
sec. 36, NW1/4NW1/4.
T. 22 N., R. 82 W.,
sec. 2, lots 3 and 4, and SW1/4NW1/4;
sec. 8, NE1/4SE1/4 and S1/2SE1/4;
sec. 10, NW1/4NW1/4;
sec. 18, SE1/4NE1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4.
T. 22 N., R. 83 W.,
sec. 24, NE1/4NE1/4, S1/2NE1/4, SW1/4, and NW1/4SE1/4;
sec. 26, N1/2NE1/4, SW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 34, N1/2NW1/4 and SW1/4NW1/4.
T. 21 N., R. 83 W.,
sec. 4, lots 2 and 3, S1/2NW1/4, and NW1/4SW1/4;
sec. 8, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and W1/2SW1/4;
sec. 30, lot 2.
T. 21 N., R. 84 W.,
sec. 24, SE1/4SE1/4;
sec. 25, NE1/4NE1/4, S1/2NE1/4, and NW1/4SE1/4;
sec. 26, SE1/4SE1/4;
sec. 32, lots 4 and 8, S1/2SW1/4, and SW1/4SE1/4;
sec. 34, S1/2NE1/4, S1/2NW1/4, and N1/2SW1/4.
T. 20 N., R. 84 W.,
sec. 6, lot 1.
T. 20 N., R. 85 W.,
sec. 2, lot 8.
T. 21 N., R. 85 W.,
sec. 32, lots 3 and 7, S1/2NW1/4, NE1/4SW1/4, and NW1/4SE1/4;
sec. 34, N1/2SW1/4 and N1/2SE1/4;
sec. 36, S1/2SW1/4 and S1/2SE1/4.

T. 21 N., R. 86 W.,
sec. 32, N1/2SW1/4 and N1/2SE1/4;
sec. 34, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4.
T. 21 N., R. 87 W.,
sec. 32, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 34, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4.
T. 20 N., R. 88 W.,
sec. 2, lots 1, 2, 3, and 4;
sec. 4, lots 1, 2, 3, and 4;
sec. 6, lot 1, and N1/2SE1/4.
T. 20 N., R. 89 W.,
sec. 2, SE1/4SE1/4;
sec. 8, S1/2SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 10, NE1/4NE1/4, S1/2NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 12, NW1/4NW1/4;
sec. 18, lot 1 and N1/2NE1/4.
T. 20 N., R. 90 W.,
sec. 14, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4.
T. 19 N., R. 92 W.,
sec. 4, lots 1 and 2, S1/2NE1/4, S1/2NW1/4, and N1/2SW1/4;
sec. 8, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 18, lots 2, 3, 4, 5, and 6, W1/2NE1/4, and NE1/4SW1/4.
T. 19 N., R. 93 W.,
sec. 14, S1/2SW1/4 and S1/2SE1/4;
sec. 16, S1/2SW1/4 and S1/2SE1/4;
sec. 18, SE1/4SE1/4;
sec. 20, NW1/4NW1/4;
sec. 24, N1/2NE1/4 and N1/2NW1/4;
sec. 30, lots 1, 2, 3, and 4.
T. 18 N., R. 93 W.,
sec. 6, lots 10, 13, 14, 17, 18, 22, and 23;
sec. 8, SW1/4NW1/4, NW1/4SW1/4, and S1/2SW1/4;
sec. 20, N1/2NE1/4, SE1/4NE1/4, and E1/2SE1/4;
sec. 28, W1/2NW1/4, SE1/4NW1/4, E1/2SW1/4, and SW1/4SE1/4.
T. 17 N., R. 93 W.,
sec. 4, lot 1, SE1/4NE1/4, and E1/2SE1/4;
sec. 10, W1/2NW1/4, NW1/4SW1/4, and S1/2SW1/4;
sec. 22, N1/2NE1/4, SE1/4NE1/4, and NE1/4SE1/4;
sec. 26, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, and W1/2SE1/4.
T. 16 N., R. 93 W.,
sec. 2, lots 4, 5, and 8, and W1/2SW1/4;
sec. 10, SE1/4NE1/4 and E1/2SE1/4;
sec. 11, W1/2NW1/4 and NW1/4SW1/4;
sec. 15, N1/2NE1/4, SW1/4NE1/4, SE1/4SW1/4, and W1/2SE1/4;
sec. 22, E1/2NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 27, SW1/4NW1/4;
sec. 28, E1/2NE1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 33, N1/2NE1/4, SW1/4NE1/4, E1/2SW1/4, and W1/2SE1/4.

T. 15 N., R. 93 W.,
sec. 4, lot 3, S1/2NW1/4, and W1/2SW1/4;
sec. 5, SE1/4SE1/4;
sec. 8, E1/2NE1/4 and SE1/4;
sec. 9, NW1/4NW1/4;
sec. 17, W1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 19, E1/2SE1/4;
sec. 20, N1/2NW1/4, SW1/4NW1/4, and W1/2SW1/4;
sec. 30, NE1/4NE1/4, S1/2NE1/4, and W1/2SE1/4;
sec. 31, lot 4, NW1/4NE1/4, E1/2NW1/4, and E1/2SW1/4.
T. 14 N., R. 93 W.,
sec. 6, lots, 4, 5, and 6.

ACCESS ROADS

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Carbon County

T. 24 N., R. 80 W.,
sec. 28, S1/2SW1/4;
sec. 32, SW1/4NW1/4, NW1/4SW1/4, S1/2SW1/4, and S1/2SE1/4.
T. 23 N., R. 80 W.,
sec. 6, SE1/4NE1/4 and E1/2SE1/4;
sec. 8, SW1/4NW1/4, N1/2SW1/4, and W1/2SE1/4.
T. 24 N., R. 81 W.,
sec. 34, S1/2NE1/4, SE1/4NW1/4, and SE1/4.
T. 23 N., R. 81 W.,
sec. 2, E1/2SE1/4;
sec. 4, lots 1, 2, 3, and 4, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 8, NW1/4NE1/4, S1/2NE1/4, SW1/4, and W1/2SE1/4;
sec. 12, N1/2NE1/4;
sec. 18, E1/2NE1/4 and SE1/4;
sec. 20, S1/2SW1/4 and S1/2SE1/4;
sec. 30, lots 1, 2, 3, and 4, and NE1/4NW1/4.
T. 23 N., R. 82 W.,
sec. 24, SE1/4SE1/4;
sec. 36, NE1/4, E1/2NW1/4, and N1/2SW1/4.
T. 22 N., R. 82 W.,
sec. 2, lots 2, 3, and 4, SW1/4NE1/4, and S1/2NW1/4;
sec. 4, NE1/4SE1/4 and S1/2SE1/4;
sec. 8, S1/2;
sec. 10, SW1/4SW1/4;
sec. 14, SW1/4SW1/4;
sec. 18, E1/2NE1/4, SE1/4SW1/4, and SE1/4;
sec. 20, N1/2NE1/4 and N1/2NW1/4.
T. 22 N., R. 83 W.,
sec. 24, NE1/4, SE1/4NW1/4, and SW1/4;
sec. 26, NW1/4NE1/4.

T 21 N., R. 83 W.,
sec. 4, SW1/4NW1/4, NW1/4SW1/4, and S1/2SW1/4;
sec. 8, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4, N1/2SE1/4, and SE1/4SE1/4;
sec. 30, lots 1 and 2.
T 21 N., R. 84 W.,
sec. 24, SE1/4SE1/4;
sec. 25, SE1/4NE1/4;
sec. 26, SE1/4SE1/4;
sec. 34, SW1/4NE1/4, S1/2NW1/4, SW1/4, NE1/4SE1/4, and W1/2SE1/4.
T. 20 N., R. 84 W.,
sec. 4, lots 1, 2, 3, and 4;
sec. 6, lots 1, 6, 7, and 8.
T. 20 N., R. 85 W.,
sec. 2, lot 5.
T. 21 N., R. 85 W.,
sec. 32, lots 3, 4, 7, and 8, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, SW1/4, and W1/2SE1/4;
sec. 34, SW1/4 and S1/2SE1/4;
sec. 36, N1/2SW1/4, SW1/4SW1/4, W1/2SE1/4, and SE1/4SE1/4.
T. 21 N., R. 86 W.,
sec. 32, S1/2NE1/4, S1/2NW1/4, and NW1/4SE1/4;
sec. 34, S1/2NE1/4 and S1/2NW1/4.
T. 21 N., R. 87 W.,
sec. 30, lots 2 and 3, and NE1/4NW1/4;
sec. 32, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 34, N1/2NE1/4, E1/2NW1/4, and N1/2SW1/4.
T. 20 N., R. 88 W.,
sec. 2, lots 1, 2, 3, and 4;
sec. 4, lots 2, 3, and 4;
sec. 6, E1/2SE1/4;
sec. 8, NW1/4NW1/4.
T. 21 N., R. 88 W.,
sec. 30, lots 2 and 3, and E1/2NW1/4;
sec. 34, S1/2SW1/4 and S1/2SE1/4;
sec. 36, NW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, NW1/4SW1/4, S1/2SW1/4, and S1/2SE1/4.
T. 20 N., R. 89 W.,
sec. 4, lots 1, 2, and 3, NE1/4SW1/4, and S1/2SW1/4;
sec. 8, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, SW1/4SW1/4, E1/2SW1/4, and SW1/4SE1/4;
sec. 10, N1/2NW1/4 and SW1/4NW1/4;
sec. 14, W1/2NW1/4, W1/2SW1/4, and SE1/4SW1/4;
sec. 16, NE1/4NE1/4;
sec. 18, lots 3 and 4, NE1/4, and NW1/4SE1/4;
sec. 22, NE1/4NE1/4;
sec. 30, W1/2NE1/4, N1/2SE1/4, and SE1/4SE1/4;
sec. 32, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, and NW1/4SE1/4.
T. 21 N., R. 89 W.,
sec. 32, W1/2NW1/4;
sec. 36, N1/2NE1/4, SW1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4.

T. 20 N., R. 90 W.,
sec. 2, lots 7 and 8, and W1/2SW1/4;
sec. 12, E1/2NW1/4, SW1/4, and SW1/4SE1/4;
sec. 14, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, and N1/2SW1/4.
T. 19 N., R. 91 W.,
sec. 6, lots 4 and 5.
T. 19 N., R. 92 W.,
sec. 8, NW1/4SW1/4;
sec. 18, NW1/4NE1/4.
T. 19 N., R. 93 W.,
sec. 16, SE1/4SE1/4;
sec. 24, N1/2NE1/4 and SW1/4NW1/4.
T. 18 N., R. 93 W.,
sec. 6, lots 11, 12, 13, 17, and 18;
sec. 20, NE1/4NE1/4.
T. 16 N., R. 93 W.,
sec. 2, lots 5 and 8, and SW1/4SW1/4;
sec. 11, NW1/4NW1/4;
sec. 15, NE1/4NE1/4;
sec. 22, S1/2SW1/4.
T. 15 N., R. 93 W.,
sec. 4, N1/2SW1/4;
sec. 17, SE1/4SW1/4 and SW1/4SE1/4;
sec. 30, NW1/4SE1/4;
sec. 31, SE1/4NW1/4 and SE1/4SW1/4.
T. 14 N., R. 93 W.,
sec. 6, lots 3, 4, 5, and 7, and SE1/4SW1/4;
sec. 7, lot 1;
sec. 19, lots 2 and 3.

TRANSMISSION LINE

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Sweetwater County

T. 20 N., R. 90 W.,
sec. 20, NE1/4 and S1/2NW1/4.
T. 20 N., R. 91 W.,
sec. 24, S1/2SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 26, N1/2NE1/4, N1/2NW1/4, and SW1/4NW1/4;
sec. 28, SW1/4 and N1/2SE1/4;
sec. 32, N1/2NW1/4.
T 20 N., R. 92 W.,
sec. 34, S1/2SE1/4.
T. 19 N., R. 94 W.,
sec. 24, SE1/4NE1/4 and E1/2SE1/4.

T. 14 N., R. 94 W.,
sec. 1, E1/2SE1/4;
sec. 12, NE1/4NE1/4, S1/2NE1/4, and W1/2SE1/4;
sec. 13, W1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and NW1/4SE1/4;
sec. 24, NW1/4 and W1/2SW1/4;
sec. 25, NW1/4NW1/4;
sec. 26, E1/2NE1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 35, W1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and NW1/4SE1/4.
T. 13 N., R. 94 W.,
sec. 2, lots 3 and 4, S1/2NW1/4, and W1/2SW1/4;
sec. 3, SE1/4SE1/4;
sec. 10, E1/2NE1/4 and SE1/4;
sec. 11, NW1/4NW1/4;
sec. 15, W1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and NW1/4SE1/4;
sec. 22, W1/2;
sec. 27, SW1/4NE1/4, E1/2NW1/4, NW1/4SE1/4, and S1/2SE1/4;
sec. 34, E1/2NE1/4 and SE1/4.
T. 12 N., R. 94 W.,
sec. 3, lots 2 and 3, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 7, lot 3, NE1/4SW1/4, and N1/2SE1/4;
sec. 8, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 9, NE1/4NE1/4, S1/2NE1/4, S1/2NW1/4, and N1/2SW1/4;
sec. 10, NW1/4NW1/4.
T. 12 N., R. 95 W.,
sec. 10, S1/2SE1/4;
sec. 11, S1/2SW1/4 and S1/2SE1/4;
sec. 12, NE1/4SW1/4, S1/2SW1/4, and SE1/4;
sec. 15, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 16, NE1/4SE1/4 and S1/2SE1/4;
sec. 21, lots 6 and 7.

ACCESS ROADS

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Sweetwater County

T. 20 N., R. 90 W.,
sec. 8, NW1/4NW1/4;
sec. 10, NE1/4NE1/4, S1/2NE1/4, and W1/2SE1/4;
sec. 18, lots 2, 3, and 4;
sec. 20, S1/2NE1/4, S1/2NW1/4, and NE1/4SE1/4;
sec. 22, N1/2NW1/4 and SW1/4NW1/4.
T. 20 N., R. 91 W.,
sec. 12, SE1/4SE1/4;
sec. 24, NW1/4NW1/4;
sec. 26, N1/2NW1/4, SW1/4NW1/4, and NW1/4SW1/4.
T. 20 N., R. 92 W.,
sec. 34, SE1/4SW1/4 and SW1/4SE1/4.
T. 19 N., R. 94 W.,
sec. 24, S1/2NE1/4, NE1/4SW1/4, and NW1/4SE1/4;
sec. 36, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, and NE1/4SE1/4.

T. 14 N., R. 94 W.,
sec. 1, SE1/4SE1/4;
sec. 12, E1/2NE1/4 and S1/2SE1/4;
sec. 13, W1/2NE1/4, NE1/4SW1/4, and NW1/4SE1/4;
sec. 24, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 25, W1/2NW1/4;
sec. 26, SE1/4NE1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 35, W1/2NE1/4, E1/2NW1/4, E1/2SW1/4, and SW1/4SE1/4.
T. 13 N., R. 94 W.,
sec. 2, lot 2;
sec. 10, SE1/4NE1/4 and SE1/4;
sec. 11, W1/2SW1/4;
sec. 14, W1/2NW1/4 and W1/2SW1/4;
sec. 15, NW1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, and N1/2SE1/4;
sec. 22, N1/2NE1/4, SW1/4NE1/4, SW1/4NW1/4, W1/2SW1/4, and SE1/4SW1/4;
sec. 23, NW1/4NW1/4;
sec. 27, W1/2NE1/4, NE1/4NW1/4, NW1/4SE1/4, and S1/2SE1/4;
sec. 33, SE1/4NE1/4 and SE1/4;
sec. 34, NW1/4NE1/4, S1/2NE1/4, S1/2NW1/4, SW1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 35, SW1/4NW1/4.
T. 12 N., R. 94 W.,
sec. 3, lots 2 and 4, S1/2NW1/4, and SW1/4;
sec. 4, SE1/4NE1/4 and E1/2SE1/4;
sec. 7, lots 3 and 4, and SE1/4SW1/4;
sec. 8, S1/2NE1/4 and N1/2SW1/4;
sec. 9, E1/2NE1/4.
T. 12 N., R. 95 W.,
sec. 10, S1/2SE1/4;
sec. 11, SE1/4SW1/4 and S1/2SE1/4;
sec. 12, SW1/4 and N1/2SE1/4;
sec. 14, N1/2NW1/4;
sec. 15, NE1/4NE1/4, SW1/4NW1/4, and W1/2SW1/4;
sec. 16, SE1/4SW1/4 and SE1/4;
sec. 21, lots 5, 6, 7, and 8;
sec. 22, lot 5.

TRANSMISSION LINE

Sixth Principal Meridian, Colorado
Little Snake Field Office, Moffat County

T., 12 N., R. 95 W.,
sec. 18, lots 1, 2, 3, and 5, SE1/4SW1/4, and SW1/4SE1/4;
sec. 19, lot 1 and NE1/4NW1/4.
T., 12 N., R. 96 W.,
sec. 24, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 25, NW1/4NW1/4;
sec. 26, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 34, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 35, NW1/4NW1/4.

T. 11 N., R. 96 W.,
sec. 3, lot 4;
sec. 4, lot 1, S1/2NE1/4, E1/2SW1/4, and W1/2SE1/4;
sec. 9, E1/2NW1/4 and E1/2SW1/4.
T. 10 N., R. 96 W.,
sec. 20, SE1/4SE1/4;
sec. 21, W1/2NW1/4 and W1/2SW1/4;
sec. 28, NW1/4NW1/4;
sec. 29, E1/2NE1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 32, N1/2NE1/4, SW1/4NE1/4, and W1/2SE1/2.
T. 9 N., R. 96 W.,
sec. 5, lots 2 and 3, SW1/4NE1/4, SE1/4NW1/4, and E1/2SW1/4;
sec. 8, NE1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, and W1/2SW1/4;
sec.17, W1/2NW1/4 and NW1/4SW1/4;
sec. 18, SE1/4NE1/4 and E1/2SE1/4;
sec. 19, NE1/4NE1/4, S1/2NE1/4, and W1/2SE1/4;
sec. 30, W1/2NE1/4, E1/2NW1/4, and E1/2SW1/4.
T. 8 N., R. 96 W.,
sec. 6, lots 4, 17, and 21.
T. 8 N., R. 97 W.,
sec.1, lot 20 and E1/2SE1/4;
sec. 12, N1/2NE1/4, SW1/4NE1/4, E1/2SW1/4, and W1/2SE1/4;
sec. 13, NE1/4NW1/4, S1/2NW1/4, and W1/2SW1/4;
sec. 14, SE1/4SE1/4;
sec. 23, E1/2NE1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 24, NW1/4NW1/4;
sec. 26, W1/2NE1/4, SE1/4NW1/4, and SW1/4;
sec. 34, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 35, NW1/4NW1/4.
T. 7 N., R. 97 W.,
sec. 3, lots 3 and 4, and SW1/4NW1/4;
sec. 4, lot 1, SE1/4NE1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 8, SE1/4NE1/4 and E1/2SE1/4;
sec. 9, N1/2NW1/4 and SW1/4NW1/4;
sec. 17, E1/2NE1/4 and E1/2SE1/4;
sec. 20, NE1/4NE1/4;
sec. 21, W1/2NW1/4, SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 27, lots 6 and 7, and SW1/4NW1/4;
sec. 28, E1/2NE1/4 and NW1/4NE1/4;
sec. 34, S1/2NE1/4 and E1/2SE1/4.
T. 6 N., R. 97 W.,
sec. 3, lot 5, SE1/4NE1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 10, NW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 15, W1/2NW1/4;
sec. 21, E1/2NE1/4 and E1/2SE1/4;
sec. 22, W1/2NW1/4 and W1/2SW1/4;
sec. 27, W1/2NW1/4 and W1/2SW1/4;
sec. 28, E1/2NE1/4 and E1/2SE1/4;
sec. 34, W1/2NW1/4.

T. 5 N., R. 98 W.,
sec. 2, SE1/4NE1/4 and E1/2SE1/4;
sec. 11, E1/2NE1/4 and NE1/4SE1/4;
sec. 23, lot 5, SE1/4NW1/4, N1/2SW1/4, and NW1/4SE1/4.

ACCESS ROADS

Sixth Principal Meridian, Colorado
Little Snake Field Office, Moffat County

T. 12 N., R. 95 W.,
sec. 17, lots 3 and 4, and SE1/4SW1/4;
sec. 18, lots 1 and 2, SE1/4SW1/4, and S1/2SE1/4;
sec. 19, NE1/4NE1/4;
sec. 20, W1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, and W1/2SE1/4;
sec. 29, W1/2NE1/4.
T. 12 N., R. 96 W.,
sec. 24, SW1/4NE1/4 and NW1/4SE1/4;
sec. 34, SE1/4NE1/4 and E1/2SE1/4.
T. 11 N., R. 96 W.,
sec. 3, lots 1 and 2, SW1/4NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 4, SE1/4SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 9, NW1/4NE1/4, NE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4.
T. 10 N., R. 95 W.,
sec. 6, lots 14, 17, 18, 19, 20, 34, and 35;
sec. 30, lots 8, 9, 10, and 15.
T. 10 N., R. 96 W.,
sec. 12, lots 14, 15, 17, and 24;
sec. 13, lots 3, 4, 14, 16, 17, and 27;
sec. 20, SE1/4SE1/4;
sec. 21, NE1/4NW1/4, W1/2NW1/4, and SW1/4SW1/4;
sec. 25, lots 17, 23, 24, 25, 26, and 27;
sec. 29, E1/2NE1/4, NW1/4NE1/4, and S1/2SE1/4;
sec. 32, NW1/4NE1/4, SE1/4SW1/4, and SE1/4;
sec. 36, lots 9, 10, 11, and 20.
T. 9 N., 96 W.,
sec. 2, lots 7, 8, 10, 12, 15, 16, 24, and 25;
sec. 3, lot 18;
sec. 5, lots 2 and 3, SE1/4NW1/4, SW1/4, and W1/2SE1/4;
sec. 8, NE1/4, NE1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 10, lots 1, 2, 4, 14, 15, 18, 19, 20, and 25;
sec. 15, lots 7 and 9;
sec. 17, W1/2NW1/4 and SW1/4;
sec. 18, E1/2SE1/4;
sec. 19, NE1/4NE1/4, N1/2SE1/4, and SE1/4SE1/4;
sec. 20, NW1/4NE1/4, E1/2NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 21, lots 4, 15, 16, 20, 27 and 28;
sec. 28, lots 5, 6, 11, 12, 17, 18, 19, 22, 23, and 24;
sec. 30, lots 3, 4, and 5, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and NW1/4SE1/4;
sec. 32, lots 1, 3, 16, 17, 19, 20, 23, 24, and 25;
sec. 33, lot 9.

T. 9 N., R. 97 W.,
sec. 25, NE1/4SE1/4 and S1/2SE1/4;
sec. 35, SE1/4NE1/4 and SE1/4;
sec. 36, lots 1, 3, and 7, and SW1/4NW1/4.
T. 8 N., R. 96 W.,
sec. 6, lots 2, 3, 4, 5, and 6.
T. 8 N., R. 97 W.,
sec. 1, lots 2, 13, 14, and 19, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 2, lots 2, 3, 4, and 5;
sec. 3, lots 1, 3, 4, 5, 6, 7, and 8;
sec. 4, lots 8, 9, 10, 13, 14, and 15, and N1/2SW1/4;
sec. 5, lots 14, 15, and 16, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 7, SE1/4SE1/4;
sec. 8, W1/2NW1/4 and W1/2SW1/4;
sec. 10, NE1/4SE1/4 and S1/2SE1/4;
sec. 11, S1/2SW1/4NE1/4, SE1/4NE1/4, and N1/2SW1/4;
sec. 12, NW1/4NE1/4, NE1/4NW1/4, W1/2NW1/4, SW1/4, and W1/2SE1/4;
sec. 13, NW1/4NE1/4, E1/2NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 15, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and W1/2SW1/4;
sec. 16, lots 16 and 17, S1/2NE1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 18, NE1/4NE1/4, S1/2NE1/4, and W1/2SE1/4;
sec. 19, N1/2NE1/4;
sec. 20, lots 11, 12, 13, 14, 15, 16, 18, and 19, SW1/4NE1/4, and NW1/4NW1/4;
sec. 21, lots 13, 16, 17, and 19;
sec. 22, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 23, E1/2NE1/4, NE1/4SE1/4, and SW1/4SE1/4;
sec. 24, NE1/4NW1/4, W1/2NW1/4, and W1/2SW1/4;
sec. 25, W1/2NW1/4;
sec. 26, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 27, N1/2NE1/4;
sec. 28, NW1/4NW1/4;
sec. 29, lots 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36;
sec. 30, lots 4, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and 27, and SE1/4SW1/4;
sec. 31, lots 28, 29, 30, 31, 32, 33, 34, and 35;
sec. 32, lots 3 and 4;
sec. 34, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and SE1/4;
sec. 35, NE1/4NW1/4 and W1/2NW1/4.
T. 7 N., R. 97 W.,
sec. 3, lots 3 and 4, SW1/4NW1/4, and NW1/4SW1/4;
sec. 4, SE1/4SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 9, NE1/4NW1/4 and S1/2NW1/4;
sec. 17, SE1/4SW1/4;
sec. 20, NE1/4 and NE1/4NW1/4;
sec. 21, S1/2NE1/4, NE1/4NW1/4, S1/2NW1/4, NW1/4SW1/4, E1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 22, E1/2NE1/4 and E1/2SE1/4;
sec. 23, W1/2NW1/4 and SW1/4SW1/4;
sec. 26, lot 6 and NW1/4NW1/4;
sec. 27, lots 2, 3, 6, and 7, and NW1/4NW1/4;
sec. 28, lot 1, NE1/4, E1/2NW1/4, and NW1/4SE1/4;
sec. 34, E1/2SE1/4.

T. 6 N., R. 97 W.,
sec. 3, lot 5, SE1/4NE1/4, and SE1/4;
sec. 10, NW1/4NE1/4, E1/2NW1/4, NE1/4SW1/4, and SW1/4SW1/4;
sec. 15, NW1/4NW1/4;
sec. 27, S1/2NW1/4 and SW1/4;
sec. 33, SW1/4SW1/4;
sec. 34, N1/2NW1/4.
T. 5 N., R. 98 W.,
sec. 11, SE1/4NE1/4 and NE1/4SE1/4;
sec. 14, lot 8;
sec. 22, NE1/4SE1/4;
sec. 23, lots 4 and 5, E1/2NW1/4, N1/2SW1/4, and NW1/4SE1/4.

TRANSMISSION LINE

Sixth Principal Meridian, Colorado
White River Field Office, Moffat County

T. 5 N., R. 98 W.,
sec. 22, SE1/4SW1/4, NE1/4SE1/4, and SW1/4SE1/4;
sec. 23, NW1/4SW1/4;
sec. 28, N1/2NE1/4, NE1/4NW1/4, and SW1/4NW1/4;
sec. 29, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 30, SE1/4SE1/4;
sec. 31, SW1/4NE1/4, SE1/4NW1/4, and NE1/4SW1/4;
sec. 32, NW1/4NW1/4.
T. 4 N., R. 99 W.,
sec. 11, lot 5 and SE1/4;
sec. 12, lot 8 and NW1/4SW1/4;
sec. 14, NE1/4NW1/4 and W1/2NW1/4;
sec. 15, lot 13, SE1/4NE1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 21, SE1/4NE1/4, S1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 22, NE1/4NW1/4 and W1/2NW1/4;
sec. 28, NE1/4NW1/4 and W1/2NW1/4;
sec. 29, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 31, lots 8 and 15, NE1/4NE1/4, S1/2NE1/4, SE1/4SW1/4, and NW1/4SE1/4;
sec. 32, NW1/4NW1/4.
T. 3 N., R. 99 W.,
sec. 6, lot 11.
T. 3 N., R. 100 W.,
sec. 1, lots 5 and 6, S1/2NE1/4, SE1/4NW1/4, SW1/4, and NW1/4SE1/4;
sec. 2, SE1/4SE1/4;
sec. 9, lots 1, 3, and 5;
sec. 10, lots 1 and 3, NE1/4SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 11, NE1/4NE1/4, W1/2NE1/4, and NE1/4SW1/4;
sec. 12, NW1/4NW1/4;
sec. 18, lots 5 and 6, NW1/4NE1/4, and E1/2NW1/4.

T. 3 N., R. 101 W.,
sec. 7, lot 4, SE1/4SW1/4, and SW1/4SE1/4;
sec. 13, NE1/4NE1/4, S1/2NE1/4, and S1/2NW1/4;
sec. 14, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and NW1/4SE1/4;
sec. 15, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 17, N1/2NE1/4, SE1/4NE1/4, and N1/2NW1/4;
sec. 18, N1/2NE1/4 and NE1/4NW1/4.
T. 3 N., R. 102 W.,
sec. 12, S1/2SE1/4;
sec. 13, N1/2NE1/4 and N1/2NW1/4;
sec. 14, NE1/4NE1/4, W1/2NE1/4, NE1/4NW1/4, and S1/2NW1/4;
sec. 15, S1/2NW1/4 and N1/2SW1/4;
sec. 17, N1/2SW1/4 and N1/2SE1/4;
sec. 18, lot 3, NE1/4SW1/4, and N1/2SE1/4.
T. 3 N., R. 103 W.,
sec. 13, N1/2SE1/4;
sec. 14, SW1/4SW1/4;
sec. 15, S1/2SW1/4, NW1/4SE1/4, and S1/2SE1/4.

ACCESS ROADS

Sixth Principal Meridian, Colorado
White River Field Office, Moffat County

T. 5 N., R. 98 W.,
sec. 22, SE1/4SW1/4;
sec. 28, NW1/4NE1/4, NE1/4NW1/4, and SW1/4NW1/4;
sec. 29, S1/2NE1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 30, SE1/4SE1/4;
sec. 31, lot 9, SW1/4NE1/4, and SE1/4NW1/4;
sec. 32, NW1/4NW1/4.
T. 5 N., R. 99 W.,
sec. 35, SE1/4SW1/4 and SW1/4SE1/4.
T. 4 N., R. 99 W.,
sec. 10, lots 5 and 6, and W1/2SE1/4;
sec. 11, lot 5, N1/2SE1/4, and SW1/4SE1/4;
sec. 12, lot 8;
sec. 14, N1/2NW1/4;
sec. 15, lots 7, 11, and 13, NE1/4, and NW1/4SE1/4;
sec. 16, NW1/4SW1/4;
sec. 17, E1/2SE1/4;
sec. 20, NE1/4NE1/4, S1/2NE1/4, and E1/2SE1/4;
sec. 21, S1/2NE1/4, SW1/4, and NW1/4SE1/4;
sec. 22, W1/2NW1/4;
sec. 28, NW1/4NW1/4;
sec. 29, NE1/4, SW1/4NW1/4, SW1/4, and NW1/4SE1/4;
sec. 30, lots 9 and 14, E1/2NE1/4, and NW1/4SE1/4;
sec. 31, lots 7, 8, 9, 14, and 15, NE1/4, SE1/4SW1/4, and NW1/4SE1/4;
sec. 32, NW1/4NW1/4.
T. 4 N., R. 100 W.,
sec. 36, SE1/4SE1/4.

T. 3 N., R. 100 W.,
sec. 1, lots 5 and 6, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 2, SE1/4NE1/4 and SE1/4SE1/4;
sec. 9, lots 1, 3, and 5, and N1/2SE1/4;
sec. 10, lot 1, N1/2SW1/4, and N1/2SE1/4;
sec. 11, N1/2NE1/4, SW1/4NE1/4, and NE1/4SW1/4;
sec. 18, lot 5, NW1/4NE1/4, and NE1/4NW1/4.
T. 3 N., R. 101 W.,
sec. 1, SW1/4SW1/4;
sec. 7, lot 4, SE1/4SW1/4, NW1/4SE1/4, and S1/2SE1/4;
sec. 8, S1/2SW1/4 and SW1/4SE1/4;
sec. 11, E1/2NE1/4 and E1/2SE1/4;
sec. 13, NE1/4NE1/4, W1/2NE1/4, and NW1/4;
sec. 14, NE1/4NE1/4, S1/2NE1/4, and S1/2NW1/4;
sec. 15, S1/2NE1/4, S1/2NW1/4, and NE1/4SE1/4;
sec. 17, N1/2NE1/4 and NE1/4NW1/4;
sec. 18, lot 1, N1/2NE1/4, and NE1/4NW1/4.
T. 3 N., R. 102 W.,
sec. 10, NE1/4SE1/4;
sec. 11, N1/2NE1/4, NE1/4NW1/4, S1/2NW1/4, and W1/2SW1/4;
sec. 12, S1/2SW1/4 and S1/2SE1/4;
sec. 13, NW1/4NE1/4 and N1/2NW1/4;
sec. 14, N1/2NE1/4 and NW1/4;
sec. 15, S1/2NW1/4 and SW1/4;
sec. 17, NE1/4, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, and NE1/4SE1/4;
sec. 18, lots 3 and 4, S1/2NE1/4, NE1/4SW1/4, and N1/2SE1/4.
T. 3 N., R. 103 W.,
sec. 13, N1/2SE1/4;
sec. 14, SW1/4SW1/4;
sec. 15, SW1/4, W1/2SE1/4, and SE1/4SE1/4.

TRANSMISSION LINE

Sixth Principal Meridian, Colorado
White River Field Office, Rio Blanco County

T. 3 N., R. 103 W.,
sec. 20, SE1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 21, N1/2NE1/4, SW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 22, N1/2NW1/4;
sec. 29, NW1/4NW1/4;
sec. 30, lot 2, W1/2NE1/4, and SE1/4NW1/4.
T. 3 N., R. 104 W.,
sec. 25, SW1/4SE1/4;
sec. 34, lot 4;
sec. 35, S1/2NE1/4, NE1/4SW1/4, W1/2SW1/4, and NW1/4SE1/4;
sec. 36, NW1/4NE1/4, NE1/4NW1/4, and W1/2NW1/4.

ACCESS ROADS

Sixth Principal Meridian, Colorado
White River Field Office, Rio Blanco County

T. 3 N., R. 103 W.,
sec. 19, SW1/4SE1/4;
sec. 20, SE1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 21, N1/2NE1/4, NE1/4NW1/4, and S1/2NW1/4;
sec. 22, NW1/4NW1/4;
sec. 30, NW1/4NE1/4 and SE1/4NW1/4.
T. 2 N., R. 103 W.,
sec. 7, lot 2.
T. 3. N., R. 104 W.,
sec. 25, SW1/4SE1/4;
sec. 34, lot 4;
sec. 35, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, W1/2SW1/4, and NW1/4SE1/4;
sec. 36, N1/2NW1/4.
T. 2 N., R. 104 W.,
sec. 1, N1/2SW1/4, SE1/4SW1/4, and SW1/4SE1/4;
sec. 2, lots 3 and 4, S1/2NE1/4, SE1/4NW1/4, and NE1/4SE1/4;
sec. 12, N1/2NE1/4 and SE1/4NE1/4.

PERMANENT OFF TRANSMISSION LINE RIGHT-OF-WAY FACILITIES
SERIES COMPENSATION STATIONS

Sixth Principal Meridian, Colorado
Little Snake Field Office, Moffat County

T. 11 N., R. 96 W.,
sec. 4, SE1/4NE1/4.
T. 8 N., R. 96 W.,
sec. 6, lots 3, 4, 10, and 17.
T. 8 N., R. 97 W.,
sec. 1, lot 20.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Vernal Field Office, Uintah County

T. 7 S., R. 25 E.,
sec. 25, lots 2 and 3, and SW1/4SW1/4;
sec. 35, SE1/4NE1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4.
T. 8 S., R. 25 E.,
sec. 3, SE1/4NE1/4, SE1/4SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 9, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 10, NE1/4NW1/4 and W1/2NW1/4;
sec. 17, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 19, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 20, NW1/4NW1/4;
sec. 30, NW1/4NW1/4.
T. 8 S., R. 24 E.,
sec. 25, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 34, S1/2SE1/4;
sec. 35, NE1/4, SE1/4NW1/4, SW1/4, and NW1/4SE1/4;
sec. 36, NW1/4NW1/4.
T. 9 S., R. 24 E.,
sec. 3, lots 2, 3, and 4;
sec. 4, S1/2NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 5, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 6, lots 5 and 6, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, and N1/2SE1/4.
T. 9 S., R. 23 E.,
sec. 1, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 3, S1/2SW1/4 and S1/2SE1/4;
sec. 7, lots 3 and 4, SE1/4NE1/4, E1/2SW1/4, and N1/2SE1/4;
sec. 8, S1/2NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 9, N1/2NE1/4, NE1/4NW1/4, and W1/2NW1/4;
sec. 10, N1/2NE1/4 and N1/2NW1/4.
T. 9 S., R. 22 E.,
sec. 12, SE1/4SW1/4 and S1/2SE1/4;
sec. 13, NW1/4NE1/4, NE1/4NW1/4, and W1/2NW1/4;
sec. 14, NE1/4NE1/4, S1/2NE1/4, and SE1/4;
sec. 22, SE1/4SW1/4 and SE1/4;
sec. 23, W1/2NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 27, N1/2NW1/4, and SW1/4NW1/4;
sec. 28, E1/2NE1/4, SW1/4, and N1/2SE1/4;
sec. 30, lot 4, SE1/4SW1/4, and SW1/4SE1/4;
sec. 31, NE1/4NW1/4.
T. 9. S., R. 21 E.,
sec. 33, N1/2NE1/4.
T. 10 S., R. 20 E.,
sec. 1, lots 1, 2, 3, and 4;
sec. 2, lots 1, 2, and 3, and S1/2NW1/4;
sec. 7, lot 4, SE1/4SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 8, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4;

sec. 9, NW1/4NE1/4 and NW1/4, excepting that portion of the Uintah and Ouray Indian Reservation as described in the Act of March 11, 1948, Pub. L. No. 80-440, 62 Stat. 72-78.;
sec. 18, lot 1 and NE1/4NW1/4.

T. 10 S., R. 19 E.,
sec. 13, NE1/4, SE1/4NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 14, S1/2SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 15, SE1/4SE1/4;
sec. 19, lots 2, 3, and 6, S1/2NW1/4, and NW1/4SW1/4;
sec. 20, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 21, NE1/4NE1/4, S1/2NE1/4, and S1/2NW1/4;
sec. 22, N1/2NE1/4, and N1/2NW1/4;
sec. 23, NW1/4NW1/4.

T. 10 S., R. 18 E.,
sec. 21, S1/2SE1/4;
sec. 22, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 23, S1/2NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 24, lot 3, SW1/4NE1/4, S1/2NW1/4, NE1/4SW1/4, and NW1/4SE1/4;
sec. 28, NW1/4NE1/4 and N1/2NW1/4;
sec. 29, N1/2NE1/4, SW1/4NE1/4, E1/2NW1/4, and SW1/4NW1/4;
sec. 30, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, and NW1/4SE1/4.

T. 10 S., R. 17 E.,
sec. 25, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 26, SE1/4SW1/4 and S1/2SE1/4;
sec. 35, NW1/4NE1/4 and NE1/4NW1/4.

ACCESS ROADS

Salt Lake Meridian, Utah
Vernal Field Office, Uintah County

T. 7 S., R. 25 E.,
sec. 25, lots 2 and 3, and SW1/4SW1/4;
sec. 35, NE1/4NE1/4, S1/2NE1/4, E1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4.

T. 8 S., R. 25 E.,
sec. 3, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 9, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and SE1/4;
sec. 10, N1/2NW1/4;
sec. 17, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 19, NE1/4, NE1/4SW1/4, S1/2SW1/4, and NW1/4SE1/4;
sec. 20, NW1/4NW1/4;
sec. 30, NW1/4NW1/4.

T. 8 S., R. 24 E.,
sec. 25, NE1/4, SE1/4NW1/4, SW1/4, and NW1/4SE1/4;
sec. 26, SE1/4SE1/4;
sec. 33, SE1/4NE1/4, SE1/4SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 34, S1/2SW1/4 and S1/2SE1/4;
sec. 35, NE1/4NE1/4, W1/2NE1/4, SE1/4NW1/4, and SW1/4.

T. 9 S., R. 24 E.,
sec. 3, lots 1, 2, 3, and 4;
sec. 4, lot 3, SW1/4NE1/4, S1/2NW1/4, and NE1/4SW1/4;
sec. 5, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 6, S1/2NE1/4, SE1/4NW1/4, SE1/4SW1/4, and S1/2SE1/4;
sec. 7, lots 1 and 2, and NE1/4NW1/4.
T. 8 S., R. 23 E.,
sec. 12, NE1/4SE1/4, and S1/2SE1/4;
sec. 13, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 14, E1/2SE1/4;
sec. 23, NE1/4NE1/4, N1/2SE1/4NE1/4, and N1/2SW1/4SE1/4NE1/4;
sec. 35, SE1/4NW1/4 and E1/2SW1/4.
T. 9 S., R. 23 E.,
sec. 1, SW1/4NW1/4, N1/2SW1/4, SW1/4SW1/4, and NW1/4SE1/4;
sec. 3, lot 1, S1/2NE1/4, S1/2NW1/4, SW1/4, and SW1/4SE1/4;
sec. 4, E1/2SE1/4;
sec. 7, lots 3 and 4, E1/2SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 8, S1/2NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 9, NE1/4NE1/4, S1/2NE1/4, S1/2NW1/4, and NE1/4SE1/4;
sec. 10, NW1/4NW1/4 and W1/2SW1/4;
sec. 11, N1/2NE1/4, SW1/4NE1/4, S1/2NW1/4, NW1/4SW1/4, and S1/2SW1/4;
sec. 12, N1/2NE1/4, SE1/4NE1/4, and N1/2NW1/4;
sec. 14, NE1/4NW1/4;
sec. 15, W1/2NE1/4 and SE1/4NE1/4.
T. 9 S., R. 22 E.,
sec. 11, NE1/4SE1/4 and S1/2SE1/4;
sec. 12, S1/2;
sec. 13, N1/2NW1/4;
sec. 14, E1/2;
sec. 15, SE1/4SE1/4;
sec. 22, NE1/4NE1/4, W1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and SE1/4;
sec. 23, N1/2NE1/4, SW1/4NE1/4, S1/2NW1/4, and N1/2SW1/4;
sec. 27, N1/2NE1/4, SW1/4NE1/4, and NW1/4;
sec. 28, E1/2NE1/4, S1/2SW1/4, and NE1/4SE1/4;
sec. 30, lot 4 and SE1/4SW1/4;
sec. 31, lot 4;
sec. 33, N1/2NW1/4.
T. 10 S., R. 22 E.,
sec. 5, lot 4;
sec. 6, lots 1 and 3, S1/2NE1/4, and SE1/4NW1/4.
T. 10 S., R. 20 E.,
sec. 1, lot 4;
sec. 2, lot 2;
sec. 7, lot 4, SE1/4SW1/4, and S1/2SE1/4;
sec. 8, S1/2NE1/4, SW1/4, and N1/2SE1/4;
sec. 9, N1/2NW1/4 and SW1/4NW1/4, excepting that portion of the Uintah and Ouray Indian Reservation as described in the Act of March 11, 1948, Pub. L. No. 80-400, 62 Stat. 72-82;
sec. 17, W1/2NW1/4 and NW1/4SW1/4;
sec. 18, lots 1 and 2, NW1/4NE1/4, E1/2NW1/4, E1/2SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 19, E1/2NE1/4;
sec. 20, SW1/4NW1/4 and N1/2SW1/4.

T. 10 S., R. 19 E.,
sec. 11, SE1/4SE1/4;
sec. 12, S1/2SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 13, NE1/4NE1/4, SW1/4NE1/4, NW1/4, NE1/4SW1/4, and W1/2SW1/4;
sec. 14, N1/2NE1/4, SW1/4NE1/4, NW1/4, E1/2SW1/4, and S1/2SE1/4;
sec. 15, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and SE1/4SW1/4;
sec. 19, lots 3 and 4, and NW1/4SW1/4;
sec. 20, S1/2NE1/4, SE1/4NW1/4, and N1/2SW1/4;
sec. 21, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 22, N1/2, N1/2SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 23, NW1/4NW1/4 and SW1/4SW1/4;
sec. 25, W1/2SW1/4;
sec. 26, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, and N1/2SE1/4.
T. 10 S., R. 18 E.,
sec. 7, NW1/4NE1/4, S1/2NE1/4, NW1/4, and E1/2SE1/4;
sec. 8, S1/2SW1/4;
sec. 9, SE1/4SW1/4 and S1/2SE1/4;
sec. 10, SW1/4;
sec. 14, SE1/4SE1/4;
sec. 15, NW1/4NW1/4, SW1/4, and S1/2SE1/4;
sec. 17, N1/2NE1/4 and NW1/4;
sec. 18, SE1/4NE1/4, E1/2SW1/4, and N1/2SE1/4;
sec. 19, S1/2NE1/4, NW1/4, and E1/2SE1/4;
sec. 20, W1/2SW1/4;
sec. 21, W1/2NE1/4, E1/2NW1/4, E1/2SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 22, E1/2NE1/4, N1/2SW1/4, SW1/4SW1/4, and N1/2SE1/4;
sec. 23, N1/2NE1/4, SW1/4NE1/4, and S1/2NW1/4;
sec. 24, lots 3 and 4, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, and NW1/4SE1/4;
sec. 28, NW1/4NE1/4, N1/2NW1/4, and SW1/4NW1/4;
sec. 29, NE1/4 and S1/2NW1/4;
sec. 30, N1/2NE1/4, SW1/4NE1/4, and N1/2SW1/4.
T. 10 S., R. 17 E.,
sec. 11, N1/2NE1/4 and NE1/4NW1/4;
sec. 12, S1/2NE1/4, N1/2NW1/4, and SE1/4NW1/4;
sec. 23, SE1/4SE1/4;
sec. 24, S1/2NE1/4, N1/2SW1/4, SW1/4SW1/4, and NW1/4SE1/4;
sec. 25, NE1/4SW1/4 and S1/2SW1/4;
sec. 26, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, and NE1/4SW1/4;
sec. 35, N1/2NE1/4.

PERMANENT OFF TRANSMISSION LINE RIGHT-OF-WAY FACILITIES
SERIES COMPENSATION STATIONS

Salt Lake Meridian, Utah
Vernal Field Office, Uintah County

T. 9 S., R. 23 E.,
sec. 7, SE1/4;
sec. 8, SW1/4NE1/4, S1/2NW1/4, SW1/4, N1/2SE1/4, and SW1/4SE1/4.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Vernal Field Office, Duchesne County

T. 10 S., R. 17 E.,
sec. 26, SE1/4SW1/4;
sec. 31, lot 4, SE1/4SW1/4, NE1/4SE1/4, and S1/2SE1/4;
sec. 33, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, and NW1/4SE1/4;
sec. 34, NE1/4 and S1/2NW1/4;
sec. 35, N1/2NW1/4.
T. 10 S., R. 16 E.,
sec. 33, SE1/4SW1/4 and S1/2SE1/4;
sec. 34, S1/2SW1/4 and S1/2SE1/4;
sec. 35, S1/2SW1/4 and S1/2SE1/4.
T. 11 S., R. 16 E.,
sec. 3, lots 1 and 2;
sec. 4, lots 2 and 3, S1/2NW1/4, and NW1/4SW1/4;
sec. 5, NE1/4SE1/4 and S1/2SE1/4;
sec. 7, lot 4, SE1/4NE1/4, E1/2SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 8, NW1/4NE1/4 and NW1/4;
sec. 18, lot 1.
T. 11 S., R. 15 E.,
sec. 3, S1/2SW1/4;
sec. 4, S1/2SW1/4 and S1/2SE1/4;
sec. 5, S1/2SW1/4 and S1/2SE1/4;
sec. 6, lot 7, SE1/4SW1/4, and S1/2SE1/4;
sec. 10, N1/2NE1/4, SE1/4NE1/4, and N1/2NW1/4;
sec. 11, SW1/4NE1/4, S1/2NW1/4, and N1/2SE1/4;
sec. 12, SW1/4 and S1/2SE1/4;
sec. 13, NE1/4NE1/4.
T. 11 S., R. 14 E.,
sec. 1, lot 7, S1/2SW1/4, and SW1/4SE1/4;
sec. 10, lots 1, 2, and 3, NE1/4SW1/4, and S1/2SW1/4;
sec. 11, NW1/4NE1/4 and N1/2NW1/4;
sec. 15, NW1/4NW1/4;
sec. 17, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 18, lot 12 and S1/2SE1/4;
sec. 19, lots 1, 2, and 3, and NW1/4NE1/4.
T. 11 S., R. 13 E.,
sec. 23, SE1/4SW1/4 and SE1/4;
sec. 24, NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 26, NW1/4NE1/4, E1/2NW1/4, and NW1/4NW1/4;
sec. 27, NE1/4SE1/4 and S1/2SE1/4;
sec. 29, SW1/4SW1/4;
sec. 30, SE1/4SE1/4;
sec. 31, lot 4 and NW1/4NE1/4;
sec. 33, N1/2NE1/4 and NE1/4NW1/4;
sec. 34, NW1/4NE1/4 and NE1/4NW1/4.

T. 11 S., R. 12 E.,
sec. 33, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 34, lot 3, N1/2SW1/4, and N1/2SE1/4;
sec. 35, lots 1, 2, and 3, and NW1/4SW1/4.
T. 11 S., R. 10 E.,
sec. 29, NW1/4NW1/4.

ACCESS ROADS

Salt Lake Meridian, Utah
Vernal Field Office, Duchesne County

T. 9 S., R. 17 E.,
sec. 4, lot 12;
sec. 8, SE1/4NE1/4 and E1/2SE1/4;
sec. 9, N1/2NW1/4 and SW1/4NW1/4;
sec. 17, NE1/4 and E1/2SE1/4;
sec. 21, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 27, SW1/4SW1/4;
sec. 28, E1/2NE1/4 and E1/2SE1/4;
sec. 34, W1/2NW1/4, SE1/4NW1/4, and E1/2SW1/4.
T. 10 S., R. 17 E.,
sec. 3, lot 3, SW1/4NE1/4, SE1/4NW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 10, NE1/4NE1/4, W1/2NE1/4, E1/2SW1/4, and W1/2SE1/4;
sec. 11, N1/2NW1/4;
sec. 15, E1/2NW1/4, N1/2SW1/4, and SW1/4SW1/4;
sec. 21, NE1/4NE1/4, S1/2NE1/4, E1/2SW1/4, and NW1/4SE1/4;
sec. 22, NW1/4NW1/4;
sec. 26, SE1/4NW1/4, NE1/4SW1/4, and W1/2SW1/4;
sec. 28, N1/2NW1/4 and SW1/4NW1/4;
sec. 29, SE1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, and N1/2SE1/4;
sec. 30, lot 4;
sec. 31, lots 1, 2, 3, and 4, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and SE1/4;
sec. 33, W1/2NE1/4, SE1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 34, NE1/4, S1/2NW1/4, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 35, W1/2NW1/4.
T. 11 S., R. 17 E.,
sec. 3, lots 3 and 4, and SW1/4NW1/4;
sec. 4, lots 1, 2, and 3, S1/2NE1/4, and S1/2NW1/4;
sec. 5, lot 1 and SE1/4NE1/4;
sec. 6, lots 3, 4, and 5.
T. 10 S., R. 16 E.,
sec. 25, SE1/4SE1/4;
sec. 33, S1/2SW1/4 and SE1/4;
sec. 34, S1/2;
sec. 35, N1/2SW1/4, N1/2SE1/4, and SE1/4SE1/4.

T. 11. S., R. 16 E.,
sec. 1, lots 1, 2, and 3, and SE1/4NE1/4;
sec. 3, lots 1, 2, 3, and 4;
sec. 4, lots 1, 2, 3, and 4, and SW1/4NW1/4;
sec. 5, SE1/4NE1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 7, lot 2, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and NW1/4SE1/4;
sec. 8, N1/2NW1/4;
sec. 18, lot 1.
T, 11 S., R. 15 E.,
sec. 3, NW1/4SW1/4, S1/2SW1/4, and S1/2SE1/4;
sec. 4, NE1/4SW1/4, S1/2SW1/4, SE1/4;
sec. 5, S1/2SW1/4 and S1/2SE1/4;
sec. 6, lots 6 and 7, E1/2SW1/4, and SE1/4;
sec. 8, N1/2NW1/4;
sec. 10, N1/2NE1/4 and NE1/4NW1/4;
sec. 11, S1/2NE1/4, NW1/4, and NE1/4SE1/4;
sec. 12, SE1/4NE1/4, W1/2SW1/4, SE1/4SW1/4, and SE1/4;
sec. 13, NE1/4NE1/4;
sec. 17, S1/2SW1/4 and S1/2SE1/4;
sec. 18, lot 4, E1/2SW1/4, and S1/2SE1/4.
T. 11 S., R. 14 E.,
sec. 1, lots 6 and 7, S1/2SW1/4, and SW1/4SE1/4;
sec. 10, lots 1 and 2, NE1/4SW1/4, and W1/2SW1/4;
sec. 11, N1/2NE1/4 and N1/2NW1/4;
sec. 12, N1/2NW1/4;
sec. 13, lots 3 and 4, SW1/4SW1/4, and W1/2SE1/4;
sec. 14, SW1/4NW1/4, SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 15, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 17, S1/2NE1/4, W1/2SW1/4, SE1/4SW1/4, N1/2SE1/4, and SW1/4SE1/4;
sec. 18, lots 7, 11, and 12, NE1/4SE1/4, and S1/2SE1/4;
sec. 19, lots 2 and 3;
sec. 22, N1/2NE1/4;
sec. 24, NW1/4NE1/4 and N1/2NW1/4;
sec. 30, lot 12 and SW1/4SE1/4.

T. 11 S., R. 13 E.,
sec. 13, SE1/4SW1/4 and SW1/4SE1/4;
sec. 14, E1/2SW1/4, W1/2SE1/4, and SE1/4SE1/4;
sec. 18, SE1/4NW1/4, NE1/4SW1/4, and N1/2SE1/4;
sec. 20, SW1/4NE1/4 and N1/2NW1/4;
sec. 21, NE1/4SE1/4;
sec. 22, SW1/4SW1/4;
sec. 23, NE1/4, NE1/4NW1/4, SE1/4SW1/4, NE1/4SE1/4, and W1/2SE1/4;
sec. 24, NE1/4, N1/2NW1/4, SW1/4NW1/4, and SW1/4;
sec. 25, E1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, and NW1/4SE1/4;
sec. 26, NW1/4NE1/4 and E1/2NW1/4;
sec. 27, N1/2NE1/4, SW1/4NE1/4, NW1/4NW1/4, SE1/4SW1/4, and S1/2SE1/4;
sec. 28, SE1/4SE1/4;
sec. 29, SW1/4SW1/4;
sec. 30, lot 4, SE1/4SW1/4, and SE1/4SE1/4;
sec. 31, lot 4, NW1/4NE1/4, and SE1/4SW1/4;
sec. 33, N1/2NE1/4, NE1/4NW1/4, and N1/2SW1/4;
sec. 34, NW1/4NE1/4 and NE1/4NW1/4.
T. 11 S., R. 12 E.,
sec. 4, S1/2SW1/4;
sec. 6, SW1/4NE1/4;
sec. 10, SW1/4NE1/4 and S1/2NW1/4;
sec. 11, NW1/4SW1/4;
sec. 13, W1/2NE1/4 and N1/2NW1/4;
sec. 33, lots 1, 2, 3, and 4, NE1/4NW1/4, S1/2NW1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 34, lots 1, 2, and 3, N1/2SW1/4, and NW1/4SE1/4;
sec. 35, lots 1, 2, 3, and 4, N1/2SW1/4, and NW1/4SE1/4.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Price Field Office, Carbon County

T. 12 S., R. 13 E.,
sec. 6, lot 4.
T. 12 S., R. 12 E.,
sec. 1, lots 4 and 5, SW1/4NE1/4, and S1/2NW1/4.

ACCESS ROADS

Salt Lake Meridian, Utah
Price Field Office, Carbon County

T. 12 S., R. 13 E.,
sec. 5, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4, and S1/2SE1/4;
sec. 8, lot 1 and SE1/4NE1/4;
sec. 17, lot 1;
sec. 18, lot 1.
T. 12 S., R. 12 E.,
sec. 1, lots 1, 2, and 5, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, and S1/2SW1/4;
sec. 3, lots 3 and 4;
sec. 4, lot 3;
sec. 5, lot 2;
sec. 11, NW1/4NE1/4 and SE1/4NE1/4;
sec. 12, lots 3, 4, 5, and 10, and SW1/4SE1/4.
T. 12 S., R. 10 E.,
sec. 1, lots 1 and 3.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Salt Lake Field Office, Utah County

T. 11 S., R. 9 E.,
sec. 20, lots 2 and 8;
sec. 21, S1/2NE1/4, S1/2NW1/4, and N1/2SE1/4;
sec. 22, S1/2NE1/4, N1/2SW1/4, and N1/2SE1/4;
sec. 24, SW1/4NW1/4.
T. 10 S., R. 5 E.,
sec. 4, lot 4.
T. 10 S., R. 4 E.,
sec. 4, lot 5.

ACCESS ROADS

Salt Lake Meridian, Utah
Salt Lake Field Office, Utah County

T. 11 S., R. 9 E.,
sec. 17, NE1/4SE1/4;
sec. 20, lot 8;
sec. 21, NE1/4, S1/2NW1/4, and NW1/4SE1/4;
sec. 22, S1/2NE1/4, S1/2NW1/4, N1/2SW1/4, and NE1/4SE1/4;
sec. 24, W1/2NW1/4 and SE1/4SE1/4;
sec. 35, lot 11.
T. 10 S., R. 5 E.,
sec. 4, lot 4 and NW1/4SW1/4.
T. 10 S., R. 4 E.,
sec. 4, lot 5.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Richfield Field Office, Sanpete County

T. 13 S., R. 3 E.,
sec. 7, SW1/4NE1/4.
T. 13 S., R. 2 E.,
sec. 10, NE1/4NE1/4;
sec. 12, NE1/4NE1/4.

ACCESS ROADS

Salt Lake Meridian, Utah
Richfield Field Office, Sanpete County

T. 12 S., R. 3 E.,
sec. 1, lot 3, S1/2NW1/4, and NW1/4SW1/4.
T. 13 S., R. 3 E.,
sec. 7, SE1/4SE1/4.
T. 13 S., R. 2 E.,
sec. 10, S1/2SE1/4;
sec. 11, SE1/4NE1/4, S1/2NW1/4, N1/2SW1/4, SW1/4SW1/4, and E1/2SE1/4;
sec. 12, NE1/4NE1/4;
sec. 14, NE1/4NE1/4;
sec. 15, N1/2NE1/4.

TRANSMISSION LINE

Salt Lake Meridian, Utah
Fillmore Field Office, Juab County

T. 13 S., R. 2 E.,
sec. 3, SE1/4SW1/4 and S1/2SE1/4.
T. 11 S., R. 1 W.,
sec. 26, SE1/4SW1/4;
sec. 35, E1/2NW1/4 and E1/2SW1/4.
T. 12 S., R. 1 W.,
sec. 11, NW1/4NE1/4 and NE1/4NW1/4.

ACCESS ROADS

Salt Lake Meridian, Utah
Fillmore Field Office, Juab County

T. 13 S., R. 2 E.,
sec. 3, SE1/4SW1/4;
sec. 10, SE1/4SW1/4.
T. 11 S., R. 1 W.,
sec. 26, SE1/4SW1/4;
sec. 35, W1/2NE1/4 and E1/2NW1/4.
T. 12 S., R. 1 W.,
sec. 11, NW1/4NE1/4, NW1/4, and E1/2SW1/4;
sec. 14, S1/2NE1/4, E1/2NW1/4, E1/2SW1/4, and W1/2SE1/4.

ENERGY GATEWAY SOUTH
WYW 174597-01
COC 72907-01
UTU 87237-01
LEGAL DESCRIPTION
TEMPORARY RIGHT-OF-WAY

TEMPORARY CONSTRUCTION SITES

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Carbon County

T. 24 N., R. 80 W.,
sec. 28, SW1/4SW1/4.
T. 23 N., R. 81 W.,
sec. 4, lot 3;
sec. 18, SW1/4SE1/4.
T. 22 N., R. 82 W.,
sec. 2, lot 4 and SW1/4NW1/4.
T. 22 N., R. 83 W.,
sec. 26, W1/4NE1/4 and E1/2NW1/4.
T. 21 N., R. 83 W.,
sec. 30, lots 1 and 2.
T. 21 N, R. 84 W.,
sec. 24, SE1/4SE1/4;
sec. 25, E1/2NE1/4;
sec. 26, SW1/4SE1/4.
T. 21 N., R. 87 W.,
sec. 32, SW1/4NE1/4, SE1/4NW1/4, and NE1/4SW1/4.
T. 19 N., R. 92 W.,
sec. 8, W1/2SW1/4.
T. 19 N., R. 93 W.,
sec. 24, N1/2NE1/4.
T. 16 N., R. 92 W.,
sec. 28, lot 3, NE1/4SW1/4, and S1/2SW1/4.
T. 14 N., R. 93 W.,
sec. 19, lots 1 and 2.

Sixth Principal Meridian, Wyoming
Rawlins Field Office, Sweetwater County

T. 19 N., R. 94 W.,
sec. 2, lot 4;
sec. 24, E1/2NE1/4.
T. 13 N., R. 94 W.,
sec. 22, SW1/4NW1/4 and NW1/4SW1/4;
sec. 34, SE1/4NE1/4 and NE1/4SE1/4;
sec. 35, SW1/4NW1/4 and NW1/4SW1/4.
T. 12 N., R. 94 W.,
sec. 9, SE1/4NE1/4 and NE1/4SE1/4.
T. 12 N., R. 95 W.,
sec. 10, S1/2SE1/4.

ENERGY GATEWAY SOUTH
TEMPORARY OFF TRANSMISSION LINE RIGHT-OF-WAY FACILITIES

Sixth Principal Meridian, Colorado
Little Snake Field Office, Moffat County

T. 11 N., R. 96 W.,
sec. 3, lots 2 and 3, SW1/4NE1/4, S1/2NW1/4, and NW1/4SW1/4;
sec. 4, E1/2SW1/4 and NW1/4SE1/4.
T. 9 N., R. 96 W.,
sec. 5, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, and NW1/4SE1/4.
T. 8 N., R. 96 W.,
sec. 6, lot 10.
T. 7 N., R. 97 W.,
sec. 8, SE1/4NE1/4 and NE1/4SE1/4;
sec. 17, SE1/4;
sec. 34, SE1/4NE1/4 and NE1/4SE1/4.
T. 6 N., R. 97 W.,
sec. 34, W1/2NW1/4.
T. 5 N., R. 98 W.,
sec. 23, lots 5 and 6, and NW1/4SE1/4.

TEMPORARY OFF TRANSMISSION LINE RIGHT-OF-WAY FACILITIES

Sixth Principal Meridian, Colorado
White River Field Office, Moffat County

T. 5 N., R. 98 W.,
sec. 28, NE1/4NW1/4;
sec. 31, SE1/4NW1/4 and NE1/4SW1/4.
T. 4 N., R. 99 W.,
sec. 31, lot 8.
T. 4 N., R. 100 W.,
sec. 36, SE1/4SE1/4.
T. 3 N., R. 99 W.,
sec. 6, lot 11.

T. 3 N., R. 100 W.
sec. 1, lot 5;
sec. 11, NE1/4SW1/4.
T. 3 N., R. 101 W.,
sec. 7, lot 4 and SE1/4SW1/4.
T. 3 N., R. 102 W.,
sec. 15, NE1/4SW1/4.

TEMPORARY OFF TRANSMISSION LINE RIGHT-OF-WAY FACILITIES

Sixth Principal Meridian, Colorado
White River Field Office, Rio Blanco County

T. 3 N., R. 103 W.,
sec. 21, NW1/4NE1/4.
T. 3 N., R. 104 W.,
sec. 34, lot 4.

TEMPORARY CONSTRUCTION SITES

Salt Lake Meridian, Utah
Vernal Field Office, Uintah County

T. 7 S., R. 25 E.,
sec. 25, lots 2 and 3.
T. 8 S., R. 25 E.,
sec. 19, S1/2NE1/4.
T. 8 S., R. 24 E.,
sec. 35, S1/2SW1/4.
T. 9 S., R. 23 E.,
sec. 3, S1/2SW1/4.
T. 9 S., R. 22 E.,
sec. 14, S1/2NE1/4;
sec. 23, N1/2NE1/4;
sec. 28, E1/2NE1/4 and NE1/4SE1/4.
T. 10 S., R. 20 E.,
sec. 2, lots 1 and 2;
sec. 18, lot 1.
T. 10 S., R. 19 E.,
sec. 14, S1/2SE1/4.

TEMPORARY CONSTRUCTION SITES

Salt Lake Meridian, Utah
Vernal Field Office, Duchesne County

T. 10 S., R. 17 E.,
sec. 26, SW1/4SW1/4.
T. 10 S., R. 16 E.,
sec. 33, SE1/4SW1/4 and SW1/4SE1/4;
sec. 35, NE1/4SE1/4.

T. 11 S., R. 16 E.,
sec. 7, lot 4;
sec. 18, lot 1.
T. 11 S., R. 15 E.,
sec. 10, NE1/4NE1/4;
sec. 11, NE1/4NE1/4 and S1/2NE1/4;
sec. 12, SE1/4SE1/4;
sec. 13, NE1/4NE1/4.
T. 11 S., R. 14 E.,
sec. 1, lots 6 and 7;
sec. 10, lots 1 and 3;
sec. 11, NW1/4NW1/4.
T. 11 S., R. 13 E.,
sec. 24, E1/2NW1/4;
sec. 25, E1/2SW1/4 and NW1/4SE1/4;
sec. 26, NE1/4NW1/4;
sec. 29, SW1/4SW1/4;
sec. 30, SE1/4SE1/4;
sec. 31, NW1/4NE1/4;
sec. 34, E1/2NW1/4.
T. 11 S., R. 12 E.,
sec. 35, lots 2 and 3, and NE1/4SW1/4.

TEMPORARY CONSTRUCTION SITES

Salt Lake Meridian, Utah
Price Field Office, Carbon County

T. 12 S., R. 13 E.,
sec. 6, lots 4 and 5.
T. 12 S., R. 12 E.,
sec. 1, lot 5 and SW1/4NW1/4.
T. 12 S., R. 10 E.,
sec. 1, lot 1.

TEMPORARY CONSTRUCTION SITES

Salt Lake Meridian, Utah
Salt Lake Field Office, Utah County

T. 11 S., R. 9 E.,
sec. 21, SE1/4NE1/4;
sec. 22, SW1/4NW1/4.

TEMPORARY CONSTRUCTION SITES

Salt Lake Meridian, Utah
Fillmore Field Office, Juab County

T. 11 S., R. 1 W.,
sec. 26, SE1/4SW1/4;
sec. 35, NW1/4NE1/4.

T. 12 S., R. 1 W.,
sec. 11, NW1/4NE1/4 and NE1/4NW1/4.

Appendix D – Draft Plan of Development

The Plan of Development is a two-volume document. A copy of the Plan of Development is included on the DVD following this page.

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Appendix E – Programmatic Agreement

PROGRAMMATIC AGREEMENT
AMONG

THE BUREAU OF LAND MANAGEMENT;
THE USDA FOREST SERVICE;
THE WYOMING STATE HISTORIC PRESERVATION OFFICER;
THE COLORADO STATE HISTORIC PRESERVATION OFFICER;
THE UTAH STATE HISTORIC PRESERVATION OFFICER;
THE BUREAU OF INDIAN AFFAIRS;
THE NATIONAL PARK SERVICE;
THE U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT;
THE U. S. FISH AND WILDLIFE SERVICE;
THE UTE TRIBE OF THE UINTAH AND OURAY RESERVATION;
AND ROCKY MOUNTAIN POWER

REGARDING COMPLIANCE WITH
THE NATIONAL HISTORIC PRESERVATION ACT FOR THE
ENERGY GATEWAY SOUTH TRANSMISSION PROJECT

WHEREAS, PacifiCorp, doing business as Rocky Mountain Power (Applicant) has applied for and the following federal agencies are considering the issuance of federal right-of-way (ROW) grants and associated permits for the Energy Gateway South Transmission Line Project (Undertaking): the Bureau of Land Management (BLM), the USDA Forest Service (USFS), the U.S. Army Corps of Engineers (USACE) Sacramento District, the U.S. Fish and Wildlife Service, the National Park Service (NPS), and the Bureau of Indian Affairs (BIA). These agencies (federal agencies) are Signatories to this Programmatic Agreement (PA); and

WHEREAS, the Undertaking includes the construction, operation and maintenance of an approximately 400 to 500 mile, 500kV transmission line from near Aeolus, Wyoming, to near Mona, Utah, across multiple federal, state, and local jurisdictions and across the ancestral lands of several Indian tribes, as described in Appendix A – Map of Proposed Undertaking and Alternatives; and

WHEREAS, the Applicant intends to construct, operate and maintain the Undertaking according to general parameters contained in the approved project Plan of Development (POD) for the Undertaking, which shall be appended to and made a part of the Record of Decision (ROD) authorizing the ROW grant issued by BLM; and

WHEREAS, the BLM, as lead federal agency, has determined that issuance of the ROW grant triggers the requirements of Title 54 U.S.C. § 300101 et seq. (commonly known as the National Historic Preservation Act [NHPA] of 1966, as amended [1992]) and Title 54 U.S.C. § 306108 (commonly known as Section 106 of the NHPA) will be cited as NHPA Section 106 throughout this document; and

WHEREAS, the BLM has determined that the Undertaking may have direct, indirect, and cumulative effects on properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP), hereinafter called historic properties, and, pursuant to 36 CFR Part 800,

has consulted with the Wyoming State Historic Preservation Officer (WY SHPO), Colorado State Historic Preservation Officer (CO SHPO), and Utah State Historic Preservation Officer (UT SHPO) who are Signatories to this PA; and

WHEREAS, the effects on historic properties are multi-state in scope and cannot be fully determined prior to approval of the Undertaking, the BLM, in consultation with the SHPOs, has determined to use a phased process to identify historic properties [36 CFR 800.4(b)(2)] and assess those effects [36 CFR 800.5(a)(3)]; such that completion of the identification and evaluation of historic properties, determinations of effect on historic properties, and consultation concerning measures to avoid, minimize, or mitigate any adverse effects to the historic properties will be carried out in phases as part of planning for and prior to any Notice to Proceed (NTP) and Undertaking implementation; and

WHEREAS, the BLM has determined that a PA documenting the terms and conditions for compliance with NHPA Section 106 will be negotiated among Consulting Parties according to 36 CFR 800.14(b)(1)(ii); and

WHEREAS, this PA and the Historic Properties Treatment Plan (HPTP) that will be developed pursuant to this PA will be incorporated into the approved project POD and the BLM ROW grant for this Undertaking; and

WHEREAS, for purposes of the Undertaking, the BLM Wyoming State Office is lead for compliance with the NHPA Section 106 on behalf of the federal agencies [36 CFR 800.2(a)(2)] as evidenced by the Interagency Transmission Memorandum of Understanding (October 23, 2009) and by BLM Washington Office Instruction Memorandum 2010-169, Implementation Guidance for the Interagency Transmission Memorandum of Understanding, and/or by the signing of this PA by any responsible federal agency official, and is the primary contact for all Consulting Parties to this PA and for all Indian tribes; and

WHEREAS, the BLM has notified the Advisory Council on Historic Preservation (ACHP), pursuant to NHPA Section 106 and its implementing regulations (36 CFR 800.6(a)(1), and the ACHP has declined to participate; and

WHEREAS, the BLM recognizes its government-to-government obligation to consult with Indian tribes that may attach religious and cultural significance to historic properties that may be affected by the proposed Undertaking and will continue to consult with affected tribes regarding their concerns under NHPA Section 106 in accordance with 36 CFR 800.2(c)(2); and

WHEREAS, the BLM recognizes that historic properties may also include Traditional Cultural Properties (TCPs). Per National Park Service (NPS) Bulletin 38, a TCP is defined as a type of historic property that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. A community may include a Native American tribe, a local ethnic group, or the people of the nation as a whole. TCPs may include historic properties that Native American communities

consider to be traditional ecological knowledge properties or of traditional religious and cultural importance; and

WHEREAS, the BLM, as lead federal agency for tribal consultation and coordination, has initiated consultation with the Confederated Tribes of the Goshute Reservation, Eastern Shoshone Tribe of the Wind River Reservation, Hopi Tribe, Jicarilla Apache Tribe, Navajo Nation, Northern Arapaho Tribe of the Wind River Reservation, Northwestern Band of Shoshone Nation, Paiute Indian Tribe of Utah, Pueblo of Acoma, Pueblo of Cochiti, Pueblo of Isleta, Pueblo of Jemez, Pueblo of Laguna, Pueblo of Nambe, Pueblo of Picuris, Pueblo of Pojoaque, Pueblo of San Felipe, Pueblo of San Ildefonso, Pueblo of San Juan, Pueblo of Sandia, Pueblo of Santa Ana, Pueblo of Santa Clara, Pueblo of Santo Domingo, Pueblo of Taos, Pueblo of Tesuque, Pueblo of Zia, Pueblo of Zuni, San Juan Southern Paiute Tribe, Shoshone-Bannock Tribes of the Fort Hall Reservation, Skull Valley Band of Goshute Indians of Utah, Southern Ute Indian Tribe of the Southern Ute Reservation, Ute Indian Tribe of the Uintah and Ouray Reservation, and Ute Mountain Ute Tribe of the Ute Mountain Reservation and has invited all of these tribes to be Concurring Parties to this PA; and

WHEREAS, an alternative route may cross Indian trust lands on the Uintah and Ouray Indian Reservation and, whether on tribal and/or individual Indian-owned lands, upon obtaining consent from the Indian landowners(s), the BIA may issue encroachment permits and grants of easement for the Undertaking, and is a Signatory to this PA; and

WHEREAS, *Tribal lands* as defined in the NHPA Section 106 regulations means "all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities" (36 CFR 800.16(x). This definition of tribal lands applies in this PA, unless specified otherwise;

WHEREAS, an alternative route may cross the external boundaries of the Uintah and Ouray Indian Reservation, the Ute Tribe of the Uintah and Ouray Indian Reservation ((hereinafter called the Ute Indian Tribe) is a Signatory to this PA; and

WHEREAS, the BLM recognizes the role of the Ute Indian Tribe through the Ute Indian Tribe Business Committee and the Ute Indian Tribe Cultural Rights and Protection Department (UITCRPD) to participate fully in the identification, mitigation, and monitoring of culturally sensitive resources associated with the Undertaking in accordance with this PA on Ute tribal land; and

WHEREAS the Ute Tribe Business Committee and the UITCRPD are Consulting Parties in the PA. The UITCRPD will be the tribal representative involved in implementing the terms of this agreement on behalf of the Ute Tribe Business Committee; and

WHEREAS, the USFS, Intermountain Region, manages National Forest System lands in Utah that would be crossed by the Undertaking and the Uinta-Wasatch-Cache National Forest is Lead for the USFS and must therefore consider whether to issue a Special Use Permit for the construction, operation, and maintenance of the Undertaking; and

WHEREAS, the Sacramento District of the U.S. Army Corps of Engineers (USACE), administers a permit program under the authority of the Rivers and Harbors Act of 1899, Section

10 (33 U.S.C. Section 403), and the Clean Water Act of 1972, Section 404 (33 U.S.C. Section 1344) and may issue permits authorizing the discharge of dredged or fill material through Section 404 associated with the Undertaking, and is a Signatory to this PA; and

WHEREAS, alternative routes may affect a portion of the Old Spanish National Historic Trail (NHT), which is co-administered by the BLM and National Park Service (NPS), and the NPS has elected to participate; and

WHEREAS, the NPS has jurisdiction over Dinosaur National Monument, and an alternative may cross the Deerlodge Road leading into the monument, and must therefore consider issuing a federal authorization for the construction, operation, and maintenance of the Undertaking; and

WHEREAS**,** the Applicant, as a potential grantee of the ROW, has participated in consultation per 36 CFR 800.2(c)(4), and agrees to carry out the stipulations of this PA, being responsible for all costs including, but not limited to, fieldwork, post-field analyses, preparation of all research, interim, summary, treatment, and mitigation reports, both draft and final, curation of all documentation and artifact collections in a BLM-approved curation facility and repatriation, under the oversight of the BLM, and is an Invited Signatory to this PA; and

WHEREAS, the Undertaking includes lands administered by the Utah School and Institutional Trust Lands Administration (SITLA), an agency in the State of Utah that has a responsibility to comply with Utah Code Annotated (UCA) § 9-8-404 on lands owned or controlled by the SITLA within the Areas of Potential Effects (APEs). The SITLA intends to employ this PA to address applicable requirements for actions resulting from this PA involving land administered by the SITLA. The SITLA, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determinations made, concerning federal lands, and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the Undertaking includes lands administered by the Utah Department of Transportation (UDOT), an agency in the State of Utah, that has a responsibility to comply with UCA § 9-8-404 on lands owned or controlled by UDOT within the APEs. The UDOT intends to employ this PA to address applicable requirements for actions resulting from this PA involving land administered by the UDOT. The UDOT, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determinations made, concerning federal lands, and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the Utah Reclamation Mitigation and Conservation Commission (URMCC) is considering issuing a license to the Applicant to construct, operate, and maintain a 500kv line across any URMCC lands crossed by the Undertaking and has therefore been consulted and invited to become an Invited Signatory to this PA; and

WHEREAS, the BLM continues to consult with the Alliance for Historic Wyoming, Mesa County CO, Milford Archaeological Research Institute, Moffat County CO, National Trust for Historic Preservation, Old Spanish Trail Association, Oregon-California Trails Association,

Overland Trail Cattle Company, Tracks Across Wyoming, Utah Public Lands Policy Coordination Office, Utah Professional Archaeological Council, Utah Rock Art Research Association, Utah Statewide Archaeology Society, and the We Nooch Society and has invited all these organizations to become Concurring Parties to this PA; and

WHEREAS, reference to "Consulting Parties" shall include Signatories, Invited Signatories, and Concurring Parties. Tribes and other parties consulting under NHPA Section 106 may decline to sign this document; however, the decision not to sign shall not preclude their continued or future participation as Consulting Parties to this Undertaking; and

WHEREAS**,** the BLM will require that the Undertaking be executed in accordance with the stipulations of this PA, which will be appended to the POD and incorporated into the terms and conditions of the ROW grant and associated permits that may be granted by the federal and state agencies and which shall be appended to and made a part of the ROD;

NOW, THEREFORE, the Signatories to this PA agree that the proposed Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties and to satisfy all NHPA Section 106 responsibilities of the federal agencies for all aspects of the Undertaking.

DEFINITIONS

Terms used in this PA are defined in Appendix B. All other terms not defined have the same meaning as set forth in ACHP's regulations at 36 CFR § 800.16, Section 301 of the NHPA, and BLM 8100 and 8110 Manuals.

STIPULATIONS

The BLM, in consultation with the other participating agencies, shall ensure that the following stipulations are met and carried out:

I. Area of Potential Effects

A. Defining the APE

The BLM, in consultation with the SHPOs and other Consulting Parties, has defined and documented the APE based on direct, indirect, and cumulative effects. The APE will apply to federal, state, tribal, and private lands that may be affected by the transmission line corridor, staging areas, access roads, borrow areas, transmission substations, and other related transmission infrastructure for this Undertaking. The BLM may modify the APE in accordance with Stipulation I.B of this PA.

1. Direct Effects

    a. For above-ground transmission lines, the APE is 500 feet (250 feet on either side of the ROW centerline).

b. The APE for access roads, except for existing crowned and ditched or paved roads, is 100 feet on either side of the centerline for a total width of 200 feet. Existing crowned and ditched or paved roads are not part of the APE unless project-related activities involving use of these roads are planned or discovered in adjacent areas, at which time BLM may modify the APE in accordance with Stipulation I.B of this PA.

c. The APE for staging areas, borrow areas, substations, and other transmission infrastructure includes the footprint of the facility and a buffer of 200 feet around the footprint of the proposed activity.

d. The APE for pulling/tensioning areas that fall outside the ROW is the footprint of the activity plus a 250-foot radius around these points.

e. The APE for geotechnical drill sites is the boring location footprint, plus a buffer extending in a 250-foot radius from the perimeter of the boring location. In most cases, the APE for the geotechnical drill site locations will fall within the direct APE of the transmission line and other project components.

f. The direct effects APE from operation and maintenance activities is the area of the ROW grant.

2. Indirect Effects

a. The APE for indirect effects on historic properties considers visual, audible, and atmospheric elements that could diminish the integrity of properties for which setting, feeling, and/or association are qualifying characteristics of NRHP eligibility. The indirect APE for the Undertaking extends to the visual horizon or for 3 miles on either side of the transmission line centerline, whichever is closer.

b. Where the APE for indirect effects includes traditional cultural properties (TCPs), properties of traditional religious and cultural importance, National Historic Landmarks (NHL), NHTs, and other classes of historic properties for which setting, feeling and/or association contributes to eligibility, additional analyses may be required and the indirect APE may be modified accordingly following procedures at I.B below.

3. Cumulative Effects

Cumulative effects are the impact on the environment that 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 other actions. For the purposes of this PA, the APE for cumulative effects is the same as that for direct and indirect effects.

B. Modifying the APE

1. The APE, as currently defined, encompasses an area sufficient to accommodate all of the Undertaking components under consideration as of the date of the execution of this PA. The APE may be modified when tribal consultation, additional field research or literature review, consultation with Consulting Parties, or other factors indicate that the qualities and values of historic properties that lie outside the boundaries of the currently defined APE may be affected directly, indirectly, or cumulatively.

    a. If the BLM determines that the Undertaking or changes to the Undertaking may cause unforeseen direct, indirect, or cumulative effects to historic properties beyond the extent of the established APE, then the BLM may use the process set forth in Stipulation I.B.1.b to determine whether to modify the APE.

    b. Any Consulting Party to this PA may propose that the APE be modified by providing written justification and illustration of the proposed APE modification. The BLM shall send the modification proposal to all Consulting Parties and consult with them for no more than 30 days in an effort to reach consensus on the proposal. If the Signatories and Invited Signatories agree to modify the APE, the BLM will notify the Consulting Parties of the decision. If all Signatories and Invited Signatories cannot agree to a proposal for the modification of the APE, then the BLM will consider their concerns and will render a final decision.

2. Agreement to modify the APE will not require an amendment to the PA.

II. Identification, Evaluation, and Determination of Effects

A. The BLM will ensure that all work undertaken to satisfy the terms of this PA meets the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) (*Federal Register*, September 29, 1983), hereinafter referred to as *Secretary's Standards*, and is consistent with the ACHP guidance on archaeology found at http://www.achp.gov/archguide/ and all applicable guidance for evaluating National Register properties. The BLM and other federal agencies have defined conventions or standards for survey corridors and survey intensity to adequately identify historic properties that may be affected by this Undertaking. Except for lands managed by USFS, all survey activity will meet BLM Manual 8110 guidance for a comprehensive survey (BLM Class III Inventory) and be consistent with that of the SHPOs, including guidance and standards found in respective BLM and SHPO state agreements. Identification on lands managed by USFS will follow Forest Service Manual 2360.

B. The BLM will ensure that all identification and inventory is carried out by or under the direct supervision of a person or persons meeting, at a minimum, the applicable professional qualifications standards set forth in the Secretary's Standards and the permitting requirements of appropriate states, tribal, and federal agencies.

C. The Applicant will begin fieldwork only after they have obtained the appropriate federal, tribal, and state permits for such fieldwork. The applicable agencies shall approve Fieldwork Authorizations to conduct inventories on land they manage, respectively, within the timeframe stipulated within the managing agencies' procedures upon receipt of a complete application from the Applicant.

D. The BLM will ensure that a cultural resource inventory will be completed in the following phases:

1. Literature Review

    a. A literature review has been completed for a 4-mile wide corridor, 2 miles wide on either side of the reference centerline, along all alternatives of the proposed Undertaking in order to inform the NEPA analysis. Following completion of NEPA analysis, the literature review will result in a report for each state and for the Ute tribal lands to be submitted to each BLM State Office, the USFS, and the UITPRPD for review and comment. The BLM will provide the literature review to each state's SHPO for review and comment.

    b. The Applicant will conduct an updated literature review by segment to inform all subsequent phases; it will be used as a reference document to support all of the Class III inventories conducted for this Undertaking and will be a starting point for the screening process used to identify historic properties within the indirect APE, as indicated in Appendix C. The Applicant will conduct additional file searches as needed to address changes in the APE and to be current in advance of any Class III inventories.

2. Pre-Construction Inventory

    a. After the BLM determines the selected route, the BLM will request that the Consulting Parties identify areas they deem to have special interest to their members. Consulting Parties will provide this information to the BLM within 30 days of such request. This information will be consolidated and incorporated into the Class III report as consulting party information.

    b. Where not covered by previous acceptable Class III inventory or assessments as determined by the BLM and the applicable SHPO, the Applicant will complete Class III inventory under BLM guidance for the direct APE, with an inventory and assessment of indirect effects for the indirect APE, regardless of land ownership. The assessment of indirect effects will entail identification of historic properties that retain integrity and for which setting is an integral part of its character defining features of eligibility. In the early stages of resource identification, the Applicant will undertake a GIS viewshed analysis to determine the visibility of the Undertaking from a prescribed distance in the landscape. As indicated in Appendix C, this analysis will be used as part of the screening process developed for historic properties within the indirect APE.

(1) During Class III inventory on Ute Tribal Lands, the Ute Indian Tribe will designate a tribal representative to accompany each of the Applicant's cultural resources contractor's crews to assist with identifying cultural resources of concern (for example, TCPs or sacred sites) to the Ute Indian Tribe.

(2) The Applicant either directly or through its cultural resources contractor shall provide the Ute Indian Tribe the opportunity to participate in the Class III cultural resources inventory on lands in Wyoming and Colorado and from the western external boundary of the Uintah and Ouray Reservation to the western terminus of the Undertaking. The Applicant either directly or through its cultural resources contractor shall provide the Northern Arapaho Tribe and the Eastern Shoshone Tribe the opportunity to participate in the Class III cultural resources inventory on lands in Wyoming.

c. Where there is insufficient information for making site-eligibility determinations, and after consultation with the applicable federal and/or state agency and the UITRPD if on Tribal land, the BLM and SHPOs and the UITRPD if on Tribal land may determine that additional archaeological testing or other investigations are necessary to complete NRHP evaluations for cultural resources that may be affected. The Applicant will complete fieldwork and the BLM will complete consultation for this phase prior to the initiation of construction.

d. Determination of archaeological site boundaries within the direct APE is required. Identified resources exceeding the direct APE that are either linear (e.g., roads, trails, fences, etc.) or extremely large will be inventoried and recorded to the same level as resources within the direct APE. The Applicant will record such resources up to a maximum of 1,200 feet beyond the boundary of the direct APE, provided access is authorized, or to the boundary of the resource beyond the direct APE, whichever is less.

e. Documentation may entail recordation of cultural resources over multiple land jurisdictions, including private land. The Applicant will obtain private landowner consent by written documentation to allow inventory beyond the direct APE if the boundaries of cultural resources extend beyond the direct APE. If landowner consent cannot be obtained to access the portion of the site outside the direct APE, the BLM will make a determination of eligibility based upon all known information regarding the site.

f. The Applicant may use existing resources to the extent available to identify historic properties that fall within the indirect APE that may be affected by the Undertaking. Such resources may include existing aerial photography, archival and historic documents such as Government Land Office (GLO) maps, other early maps, local histories, ethnographic information, current existing studies, geographic information system (GIS) data and any other available information, the records search for the Undertaking, targeted field inventory provided access is authorized, and other available means.

3. Inventory During Construction

    a. This phase includes inventory, as needed and regardless of land ownership, of any variances or amendments to the ROW grant or any other changes to the Undertaking that are outside the currently defined APE (including changes in construction ROW and ancillary areas).

    b. The BLM will determine whether the proposed variance will change the indirect APE sufficiently that some additional historic properties are now adversely affected. Additional GIS viewshed analysis or other analysis may be needed to determine effects, as indicated in Appendix C. Such properties will be assessed after-the-fact, and mitigation appropriate to the effect will be determined in consultation with the appropriate Consulting Parties.

    c. Where the BLM determines that additional inventory is needed, no ground disturbance will be allowed in the area of the variance or amendment to the ROW grant or any other changes to the Undertaking until the inventory and the effects determinations and any required on-site mitigation measures are completed and an NTP is issued. The BLM will determine where construction may continue while the additional work is being completed.

E. Determinations of Eligibility and Assessment of Effects

For each cultural resource within the direct APE of a land managing agency's jurisdiction, the agency will provide recommendations for eligibility and effect to the BLM. BLM will then consult with any Indian tribe that attaches religious and cultural significance to any identified resource, and other Consulting Parties to determine NRHP eligibility pursuant to 36 CFR 800.4(c)(1), following National Register Bulletin 15, "*How to Apply the National Register Criteria for Evaluation.*" If the parties cannot reach concurrence on a determination of NRHP eligibility, the documentation will be forwarded to the Keeper of the National Register (Keeper) for a formal determination. If the parties cannot reach concurrence on other determinations, the question will be referred to the ACHP.

The BLM, in consultation with Consulting Parties, will assess effects in order to identify all reasonably foreseeable and potentially adverse effects that occur as a result of the Undertaking.

The BLM will use a visual assessment to determine the effects to setting for those historic properties for which setting, feeling and/or association contribute to eligibility. Such visual assessments will use appropriate state-specific procedures, as well as the screening procedures and GIS viewshed analysis previously discussed and identified within Appendix C.

Determinations of effect may be subject to change due to alterations in the Undertaking and APEs. The BLM will consult with all appropriate Consulting Parties to this PA if any changes in the Undertaking or APE require changes in the agency's determinations of effect.

1. Consultation with Federal Agencies

   The Applicant will provide the Class III inventory reports to the BLM State Office lead. The BLM will distribute the reports to the applicable BLM field offices and other federal agencies who are Signatories to this PA. Agencies will have 30 days from receipt to review the reports and provide comments to BLM. The BLM will take the comments into account prior to submitting the Class III report, including the recommendations for eligibility and assessments of effect, to the appropriate SHPO. The BLM will respond to the agencies regarding how their comments were incorporated into the final document.

2. Consultation with Tribes

   The BLM will provide the Class III inventory reports to tribes who have signed this PA or who have signed a data sharing agreement, consistent with BLM Handbook H-8120-1, Part IV.E. Tribes will have 30 days to review the Class III report and provide comments on eligibility and effect to the BLM.

3. Consultation with Other Consulting Parties

   The Applicant will provide to each BLM State Office a summary document containing brief descriptions, recommendations for eligibility, and assessment of effect for each site. The BLM will distribute the summary document to Consulting Parties (other than tribes and SHPOs) for review, and consult over eligibility and effect, following 36 CFR 800.4(c) and 36 CFR 800.5(a)(1) and (a)(2)(i)-(vii). The document will be consistent with confidentiality provisions of 36 CFR 800.11(c).

   Consulting Parties will have 30 days to review the summary document and provide comments to the BLM. The BLM will take the comments into account prior to submitting the Class III report, including the recommendations for eligibility and assessments of effect, to the appropriate SHPO. The BLM will respond to the Consulting Parties regarding how their comments were incorporated into the final document.

4. Consultation with SHPOs

   BLM will provide the Class III inventory report to the appropriate SHPO and will seek a consensus determination/s of eligibility and effect with SHPO for all cultural resources whether on federal, state, tribal, or private lands. These determinations of effect will serve as the basis for the development of state-specific HPTPs to be appended to this PA as Appendix D.

   a. If the BLM and SHPO agree that the cultural resource is not eligible for listing in the NRHP, no further review or consideration under this PA will be required for such cultural resources.

   b. If the BLM and SHPO agree that the cultural resource is eligible, then effect determinations will be in accordance with Stipulation II.E.

c. If the BLM and SHPO do not agree on eligibility, and agreement cannot be reached within 30 days, then the BLM will request a determination of eligibility from the Keeper of the National Register (Keeper), pursuant to 36 CFR 800.4(c)(2) and 36 CFR Part 63. The Keeper's determination will be final.

III. Reporting, Consultation, and Review of Documentation

A. At the conclusion of the fieldwork described in Stipulation II.D**,** the Applicant will submit copies of the draft reports and site forms to each BLM State Office for distribution to the appropriate federal and state agencies for review and to tribes who have signed this PA. A separate Class III inventory report will be prepared for each state and the Ute Tribal Lands. Each report will be consistent with the appropriate state guidelines and formats including recommendations of eligibility and effect. Reports shall also include appropriate state site inventory forms, other documentation for results of identification of properties of traditional religious and cultural significance to tribes, and recommendations on the historic significance, integrity, and NRHP eligibility of identified cultural properties [36 CFR 800.4(c)]. The portion of Class III inventory reports that contains information about TCPs, sacred sites or sites of traditional and religious significance will be formatted so that it can be separated easily from the rest of the report, to maintain confidentiality of this information as needed.

B. The applicable federal and state agencies and tribes will have 30 days from receipt of each report to review and provide comments on the initial draft to the lead BLM office. These comments will address adequacy of inventory and reports, the eligibility of properties identified [36 CFR 800.4(c)], and the effects of the Undertaking on any cultural resources considered to be historic properties [36 CFR 800.4(d) and 36 CFR 800.5]. Based on the comments received, the BLM may require the Applicant to revise the reports. Any revised reports will be submitted to the appropriate BLM State Office for a 15-day review. BLM will have five days to accept the report prior to submission to the SHPOs.

C. The Applicant will submit all other outstanding reports, such as addendum reports for variances, mitigation or monitoring, or other reporting actions required under an HPTP, no later than 3 years after the completion of the relevant work element (as described in the HPTP) of the Undertaking.

D. If the time frames discussed above cannot be met, reviewing offices will notify the lead BLM office main point of contact by email requesting a review extension and providing the justification for the delay. The lead BLM office will determine whether to grant an appropriate extension, not to exceed 30 days.

IV. Tribal Consultation

A. Through government-to-government consultation with applicable Indian tribes, pursuant to 36 CFR 800.2(c)(2), the BLM and other federal agencies, as appropriate, will make a good faith effort to identify properties that have traditional religious and cultural importance to one or more Indian tribes and to determine whether they are historic properties. Discussion of

these properties will be integrated, as applicable, as a separate chapter or appendix, or submitted as a separate report. Ethnographic studies are not required, but may be requested by tribes and any that are completed would become an appendix to the Class III inventory report. Confidentiality concerns expressed by tribes for properties that have traditional religious and cultural importance will be respected and will be protected to the extent allowed by law (see Stipulation VII).

B. Consultation Role of the Ute Indian Tribe on Ute Tribal Lands

1. The Ute Indian Tribe has not appointed or designated a THPO in accordance with the NHPA. Because an alternative route for the undertaking may cross the exterior boundary of the Uintah and Ouray Reservation, the Ute Indian Tribe has the same rights of consultation and concurrence afforded to the THPO with respect to all steps in the Section 106 process. These rights are in addition to and on the same basis as consultation with the Utah State Historic Preservation Office (UTSHPO) 36 CFR 800.2(c)(2)(i)(B).

2. The Applicant will develop the tribal participation plan in coordination with BLM and the UITCRPD and will submit the draft plan to the BLM and the UITCRPD for review. The Applicant will arrange for any necessary in person meetings to be held at a location acceptable to the UITCRPD. The BLM will notify the Applicant that the plan has been accepted. Acceptance of the plan by the BLM is a condition precedent to issuance of a Notice to Proceed on Ute Tribal Lands. The BLM, will have no financial responsibility for costs incurred by the UITCRPD in the implementation of the tribal participation plan. Any time or expenses incurred by the BLM in developing or implementing the tribal participation plan will be reimbursed by the Applicant under the cost-recovery agreement.

   a. The Applicant will ensure that the tribal participation plan includes provisions for the Ute Indian Tribe to participate in Class III inventories on Ute tribal lands; the opportunity to participate in Class III inventories on other project lands throughout the Undertaking; monitoring of archaeological excavations associated with data recovery for historic properties of traditional religious and cultural significance throughout the Undertaking; cultural resource monitoring of construction activities; and participation of the UITCRPD in reviewing the reports.

   b. The Applicant will have financial responsibility for the development and implementation of the tribal participation plan.

   c. The tribal participation plan will lay out roles and responsibilities for the Applicant, the BLM, the Ute Indian Tribe, and tribal representatives and monitors, including when and to whom tribal representatives and monitors will report.

V. Resolution of Adverse Effects

A. If the BLM determines that the Undertaking will have adverse effects on historic properties, the BLM shall consult with the appropriate SHPOs, Consulting Parties and tribes to develop

and evaluate alternatives or modifications to the Undertaking that could avoid, minimize, or mitigate adverse effects on those properties. If there are adverse effects on historic properties, the BLM will ensure state-specific HPTPs are prepared and implemented.

B. The Ute Indian Tribe's standard practice is to avoid all sites of traditional religious and cultural significance to them on Ute Tribal Lands. The Ute Indian Tribe requires that the Applicant make every effort to avoid such sites during the construction, operation and maintenance of the Project.

C. The Applicant acknowledges that the Ute Indian Tribe requires that it make every effort to avoid sites of traditional religious and cultural significance. After every effort is made to avoid such sites, if the Applicant determines that they cannot be avoided, the Applicant will work with the BLM and the UITCRPD to locate project facilities to minimize adverse effects. The BLM will fully involve the UITCRPD in the development and review of the Historic Properties Treatment Plan (HPTP) for the Undertaking on Ute Tribal Lands.

VI. Historic Properties Treatment Plan

A. Each HPTP will provide specific avoidance, minimization, or mitigation measures, commensurate with the adverse effect of the Undertaking, and to lessen any potential cumulative effects.

1. The Applicant will prepare an HPTP for each state in which historic properties will be affected by the Undertaking. Each HPTP will be prepared in consultation with the appropriate SHPO, Consulting Parties and tribes, and will be consistent with the *Secretary's Standards* and the Advisory Council on Historic Preservation's (ACHP) *Section 106 Archaeology Guidance* (2009), Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), and Historic American Landscapes Survey (HALS) guidance (http://www.nps.gov/hdp/), and appropriate state guidelines.

2. Each HPTP will list all historic properties that have been identified within the direct APE, including those avoided, by land ownership, by state, and by construction segment of the Undertaking in which it occurs. The plans will identify the specific avoidance, minimization, and mitigation strategies proposed to address the direct, indirect, and cumulative effects of the Undertaking for both individual historic properties and specific groups of historic properties (e.g., archaeological sites, trails, etc.).

    a. Each plan will identify whether the actions required to implement avoidance, minimization, or mitigation for each historic property must be implemented prior to the authorization of any ground-disturbing activities in a segment (e.g., archaeological data recovery, landscape photography), or will be implemented following authorization of ground-disturbing activities (e.g., historical research, installation of an interpretive kiosk, public education materials, etc.).

b. Each plan will include a table listing each historic property including:

(1) a distinctive name or number;
(2) a brief description of the property;
(3) its sequential location in terms of distance and direction from a construction link;
(4) the nature or kind of each required treatment measure pertaining to each historic property (e.g., avoidance, minimization, landscape photography, archaeological data recovery, etc.);
(5) identification of those corresponding treatment measures, if any, which must be completed prior to authorization of ground-disturbing activities and those that may be completed after such authorization of ground-disturbance in the area requested by the Applicant for initiation of construction; and
(6) documentation and reporting of proposed treatment and mitigation.

3. Each HPTP will include a Monitoring Plan for implementation of the Undertaking, which may include tribal participation. The Monitoring Plan will be developed as a subsection of the HPTP for implementation during construction, operation, and maintenance. This plan will address monitoring for compliance with the HPTP; monitoring as part of a strategy to avoid, minimize, or mitigate direct, indirect or cumulative adverse effects; and monitoring for previously unidentified cultural resources, at any time during the Undertaking. All monitoring plans shall identify monitoring objectives and the methods necessary to attain these objectives.

4. Each HPTP will incorporate research designs as needed to guide data recovery and other treatment efforts. Existing research designs included within historic context documents acceptable to the BLM, USFS, and SHPO will be used if BLM/USFS and SHPO agree that they are appropriate to the specific property or group of properties.

5. Other treatment measures for adverse effects may include, but will not be limited to:

a. Completion of NRHP nomination forms
b. Conservation easements
c. HABS, HAER, or HALS documentation
d. Acquisition of land containing NHT segments or other historic properties for transfer to public ownership
e. Partnerships and funding for public archaeology projects
f. Print publication (brochure/book)
g. Digital media publication (website/podcast/video)

6. Because each HPTP will be used as a field guide during implementation of the Undertaking, it also will include provisions for the treatment of previously unidentified cultural resources and human remains.

B. Review and Approval of HPTPs

1. Once each HPTP is completed, the Applicant will provide the appropriate HPTP to each BLM State Office who will distribute the plan to the applicable federal and state agencies and the UITCRPD for a 30-day review. If necessary, the Applicant will revise the plans and resubmit them to the BLM within 15 days.

2. The BLM will then provide the HPTPs to the other tribes and other Consulting Parties for a 30-day review. All comments will be submitted to the BLM.

3. The BLM will take the comments of the Consulting Parties into account and direct the Applicant to revise the plans, as appropriate. The Applicant will revise and provide new plans to the BLM within 10 days. Any revised HPTP will be provided to Consulting Parties for a second review and comment period, not to exceed 15 days. The BLM will submit the final HPTP to each SHPO for a 15-day review and concurrence.

C. Implementation of HPTPs and Issuance of Notices to Proceed (NTP)

The BLM may issue an NTP for a portion of the Undertaking if the authorized activities will not preclude the BLM's or Applicant's ability to re-site or re-locate other facilities in adjacent portions of the Undertaking to avoid adverse effects to historic properties, or to resolve those adverse effects in accordance with terms of this PA.

D. Operations and Maintenance

The HPTP shall include operations and maintenance to address all activities related to the functioning of the Undertaking after construction and reclamation are completed. These permitted activities are defined in the POD. During operations and maintenance the ROW grant holder will be required to follow all the terms, conditions, and stipulations concerning historic properties which are included in the POD as part of the ROW grant.

1. The HPTP will identify those stipulations necessary to ensure the consideration of historic properties throughout the life of the ROW grant.

2. The BLM will be responsible for ensuring that the stipulations in the BLM ROW grant are enforced on BLM land for the life of the grant. Federal or state agencies issuing a permit for the Undertaking will take responsibility for permit enforcement under their jurisdiction.

3. The HPTP will identify a variance review process for operations and maintenance, to address any changes in procedures that could have an adverse effect on historic properties in the ROW. The Applicant will submit a request for variance review to the BLM for any proposed changes in use of equipment or other changes that may result in ground disturbance outside of the previously surveyed APE.

4. The BLM will consult with applicable land-managing agencies regarding such proposed changes. The BLM will develop a list of operation and maintenance activities that will not be subject to additional NHPA Section 106 review, and will identify the types of activities that will require additional NHPA Section 106 review.

5. The BLM administration of the ROW grant shall include appropriate BLM cultural resource specialists to participate in ROW grant review and to review compliance with stipulations or changes in procedures that may affect historic properties in the ROW. Coordination with applicable land-managing agencies will occur during the review process.

E. Upon final acceptance by the BLM and SHPO, each HPTP will be appended to this PA.

F. The HPTP shall provide for the preparation of reports as called for during the implementation of plan activities, including but not limited to monitoring reports, HABS/HAER/HALS documentation, and archaeological data recovery documentation, if applicable.

G. The BLM will ensure that the Applicant completes draft and final reports as called for under the implementation of the HPTP. The BLM will send the reports out to the Consulting Parties to this agreement for review as described in Stipulation VI. Review times will be 30 working days unless otherwise noted.

VII. Protection of Confidential Information

All Consulting Parties to this PA agree that, to the extent consistent with Title 54 U.S.C. § 307103 (formerly Section 304 of the NHPA), and the Archaeological Resources Protection Act (ARPA) of 1979 (16 U.S.C. 470aa-mm) Section 9(a), cultural resource data from this project will be treated as confidential by all Consulting Parties and is not to be released to any person, organization, or agency not a Consulting Party to this PA. Duplication or distribution of cultural resource data from this Undertaking by any Consulting Party requires written authorization from the applicable BLM State Director. Confidentiality concerns for properties that have traditional religious and cultural importance to the tribes will be respected and will remain confidential to the fullest extent permitted by law.

VIII. Personnel Training

A. Prior to conducting personnel training, the Applicant will provide their cultural resource training materials to BLM for a 30-day review. The BLM may request a 15-day review by the Consulting Parties. Prior to being authorized to work in the APE, all personnel (including contractors, inspectors and monitors) involved in construction, operation, and maintenance of the Undertaking will receive instruction by the Applicant, with BLM oversight, on site avoidance and protection measures, including information on the statutes protecting cultural resources. In addition, sensitivity training regarding sites of importance to tribes and tribal issues in general will be covered. At a minimum, all personnel shall receive in-person training discussing the importance of cultural resources, such as historic trails, and archaeological laws, including penalties for violation. This training program also will apply

to personnel hired after the project has started. The Applicant shall maintain records demonstrating that the personnel training described above has been carried out and that all on-site workers have received the training.

B. If construction occurs outside of the approved ROW, BLM will assess whether to issue a stop-work order while the Applicant and the applicable federal agency provides additional training for personnel in the area.

IX. Discovery of Previously Unidentified Cultural Resources

If potential historic properties are discovered or unanticipated effects occur on known historic properties at any time during the Undertaking, the BLM will implement the Discovery Plan for the applicable state, which will be developed in consultation with the applicable Consulting Parties prior to issuance of any NTP. This plan will be included as an appendix to each HPTP.

X. Discovery of Human Remains

If human remains are discovered at any time during the Undertaking, the BLM will follow the provisions of applicable state and local laws and the Native American Graves Protection and Repatriation Act [NAGPRA (25 U.S.C. § 3001)] of 1990. Procedures for the discovery of human remains will be developed in consultation with the tribes and specifically with the UITCRPD for discovery of human remains on Ute tribal land prior to the issuance of any NTP. This plan also will address curation and repatriation. Such procedures will be included as an appendix to the HPTP and will include securing the area, stopping work within a 300-foot radius from the point of discovery and notifying, within 24 hours, the BLM and other appropriate federal or state agencies. On Ute Tribal lands, verbal notification of the discovery will be made immediately to the BIA Police. Human remains will be left in place, fully protected and treated with dignity and respect following ACHP's Policy Statement on the Treatment of Burial Sites, Human Remains, and Funerary Objects (February 23, 2007).

XI. Curation

A. The BLM shall ensure that curation of the material remains and all associated records resulting from identification and data recovery efforts is completed in accordance with 36 CFR Part 79 and the provisions of NAGPRA (25 U.S.C. § 3001). The Applicant will bear all costs of curation and repatriation. Documentation of the curation of these materials will be provided to the BLM and other land managing agencies, as appropriate, within 60 days of BLM's acceptance of the applicable report. Materials found on federal lands will remain federal property when curated (unless otherwise appropriately repatriated in accordance with federal law).

B. Archaeological materials collected from private lands pursuant to the implementation of this PA shall be maintained in accordance with 36 CFR Part 79 until all analysis is complete. Private landowners may wish to donate collections from their lands to a museum, university, historical society, or other repository. Otherwise, collections from private lands shall be returned to the landowners within 60 days of acceptance by the applicable SHPO of the final

inventory or any mitigation report (as described in the HPTP). The Applicant will provide documentation of the disposition of private collections to the BLM within 15 days of the landowner's receipt or transfer of the collections.

C. Artifacts found on Ute Tribal Lands

1. The Ute Tribe has a non-collection policy for artifacts found on Ute Tribal Lands. Therefore, neither the BLM nor the Applicant's cultural resources consultant will collect artifacts during the Class III inventory phase of the project on Ute Tribal Lands.

2. If after all reasonable efforts avoidance is not feasible, the Applicant, through their cultural resources contractor, will maintain custody of all artifacts recovered during activities associated with the HPTP. Following the completion of all analysis (as agreed to by the UITCRPD) and acceptance of the final report, artifacts not subject to NAGPRA from Ute Indian lands, as defined under 36 CFR Part 79 and 43 CFR Part 7, will be returned to the site they were taken from under the supervision of the UITCRPD. Artifacts subject to NAGPRA will be handled in accordance with NAGPRA and its implementing regulations and as described in a NAGPRA Plan of Action to be included with the appropriate HPTP.

XII. Initiation of Construction Activities

A. The BLM will authorize treatment and/or surface-disturbing construction activities only after issuance of a federal ROW grant, Special Use Authorization if appropriate, and specific NTP(s) or any other federal or state authorization to the Applicant. NTPs will be issued on a construction segment basis.

B. Prior to issuance of an NTP for a specific construction link, the BLM shall ensure that implementation of each state's final HPTP is completed to a level acceptable to the BLM for the area requested under the NTP, in consultation with the appropriate SHPO and the UITCRPD. The implementation will apply to all land in the construction link regardless of ownership. An acceptable level may consist of the following conditions:

1. The construction of the segment will not preclude rerouting of other segments or affiliated ancillary feature locations.

2. The BLM, in consultation with the appropriate SHPO and the UITCRPD, per Stipulation II.D-E, determines that either:

   a. No historic properties are present within the APE for that construction segment; or
   b. Historic properties are present within the APE for that construction link, but will not be affected; or
   c. Historic properties are present and will be adversely affected, but mitigation measures identified in the HPTP for that construction segment have been implemented according to Stipulation V.C.

XIII. Changes in Construction Activities

A. The BLM, the SHPOs, and the UITCRPD will make every effort to expedite review of any changes to construction plans after initiation of construction. If the Applicant proposes changes in the construction ROW or any ancillary areas outside of the APE surveyed for the Undertaking, the Applicant will conduct identification and evaluation of historic properties in accordance with Stipulation II. For Notice to Proceed on Ute Tribal Lands, the UITCRPD recommendations regarding eligibility and effect shall be in addition to and on the same basis as consultation with the SHPO [36 CFR § 800.3.(d)]. For Notice to Proceed on lands other than Ute tribal lands, BLM and the SHPOs will respectfully consider recommendations from tribes regarding eligibility, effect and treatment concerning sites of traditional religious and cultural significance to them and will ensure that all stipulations are in place for a no adverse effect determination. Results of the inventory report will be handled as follows:

1. If the inventory results in no cultural resources identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office for distribution to the appropriate federal and state agencies for review. These agencies will have 5 days to provide comments on the report to the applicable BLM State Office. If the BLM accepts the findings, the BLM may issue the NTP without SHPO review. If BLM does not accept the findings, the Applicant will revise the report as necessary and resubmit it to the applicable BLM State Office within 5 days. The BLM will send the documentation to the SHPO in the annual report or through whatever mechanism is in place. The report data also will be included in any final report for the Undertaking.

2. If the inventory results in no historic properties identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office for distribution to the appropriate Consulting Parties to this PA. Reviewers will provide any comments to the applicable BLM State Office within 10 days of receipt of the document. Any necessary changes to the report will be made by the Applicant and resubmitted to BLM within 5 working days. The BLM will send the report to the appropriate Consulting Parties for 5 days. The BLM will then send the documentation to the SHPO who will have 15 days to review and comment. The BLM will have 5 days to respond to any SHPO comments. If the SHPO does not respond within the stated timeframe, the BLM will assume SHPO has no objection to the report and concurs with the agency determination/s of eligibility. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation XII.

C. If the inventory results in historic properties identified, the Applicant will submit copies of the draft inventory report to the applicable BLM State Office to distribute the report, including the potential effects to any historic properties, to the appropriate Consulting Parties to this PA. Reviewers will provide comments to the applicable BLM State Office within 30 days. Any changes to the report will be made by the Applicant and resubmitted to the appropriate Consulting Parties within 10 days. The BLM will then send the documentation to the SHPO who will have 30 days to review and comment. The BLM will have 10 days to respond to any SHPO comments. If the SHPO does not respond within the stated timeframe, the BLM will assume SHPO has no objection to the report and concurs with the agency

determination/s of eligibility and finding of effect. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation XII.

XIV. Financial Security

A. The Applicant will post a financial security bond approved under the ROW regulations (43 CFR 2800) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing the HPTPs, or other mitigated activities, as negotiated by the Applicant where they contract for services in support of this PA. Such costs may include, but are not limited to treatment; fieldwork; post-field analyses; research and report preparation; interim and summary reports preparation; the curation of documentation and artifact collections in a BLM-approved curation facility; and the repatriation and reburial of any human remains, sacred objects, or objects of cultural patrimony. The Applicant will post a financial security bond prior to BLM issuing an NTP for the construction segment where historic-property treatment is required.

B. The security bond posted is subject to forfeiture if the Applicant does not complete tasks within the time period established by the treatment selected provided, however, that the BLM and Applicant may agree, in writing, to extend any such time periods. The BLM will notify the Applicant that the security bond is subject to forfeiture and will allow the Applicant 15 days to respond before action is taken to forfeit the security bond.

C. BLM will release the financial security bond, in whole or in part, as specific tasks are completed and accepted by the BLM.

XV. PA Annual Report and Review

On or before February 1 of each year, until the Signatories and Invited Signatories agree in writing that the terms of this PA have been fulfilled, the Applicant shall prepare and provide an annual report to the BLM detailing how the applicable terms of the PA are being implemented. The BLM shall provide the annual report to all Consulting Parties for a 15 day review. The BLM may then host a conference call with the Consulting Parties to discuss the report. Annual reports shall not contain confidential site location information, per provisions of Stipulation VII.

XVI. Dispute Resolution

A. Other than the NRHP dispute resolution process identified in Stipulation II.E and E.4.c, should any Consulting Party to this PA object to the manner in which the measures stipulated in this PA are implemented, they shall provide written notice to the BLM of the reason for, and a justification of, the objection. Upon acceptance of such notice, the BLM shall consult for up to 30 days with the Consulting Parties to this PA to resolve the objection. If the BLM determines that the objection cannot be resolved, the BLM shall forward all documentation relevant to the dispute to the ACHP. Within 30 days after receipt of all pertinent documentation, the ACHP shall either:

1. Provide the BLM with recommendations, which the BLM shall take into account in reaching a final decision regarding the dispute; or

2. Notify the BLM that it will comment within an additional 30 days, in accordance with 36 CFR 800.7(c)(4). Any ACHP comment provided in response to such a request will be taken into account, and responded to, by the BLM in accordance with 36 CFR 800. 7(c)(4) with reference to the subject of the dispute.

B. Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute. The BLM's responsibility to carry out all actions under this PA that are not the subject of the dispute will remain unchanged.

XVII. Amendment

Any Signatory or Invited Signatory to this PA who signed the PA may request that the PA be amended by informing BLM in writing of the reason for the request and providing the proposed amendment language. The BLM shall notify all Consulting Parties to the PA of the proposed amendment, provide the proposed language and consult to reach agreement within 30 days unless the Signatories and Invited Signatories agree to a longer period of consultation or the party proposing the amendment retracts its proposal. The amendment will be effective on the date a copy signed by all the Signatories and Invited Signatories is filed by the BLM with the ACHP.

XVIII. Termination and Withdrawal

A. Any of the Signatories and Invited Signatories who have signed this PA may terminate it.

B. The termination process starts when a Signatory or Invited Signatory who has signed the PA provides written notice to the other Signatories and Invited Signatories of its intent to terminate. Termination shall take effect no less than 30 days after this notification, during which time the Signatories, Invited Signatories, and Concurring Parties shall consult to seek agreement on amendments or any other actions that would address the issues and avoid termination. The notice must explain in detail the reasons for the proposed termination. The PA will be terminated at the end of the 30-day period unless the Signatories and Invited Signatories agree to a longer period of consultation or the party proposing termination retracts its proposal.

C. In the event this PA is terminated, the BLM shall comply with 36 CFR 800.6 (c)(8) and will take reasonable steps to avoid adverse effects to historic properties until another PA has been executed or will request, take into account, and respond to ACHP comments, in accordance with 36 CFR 800.7 (c)(4). BLM will notify all Consulting Parties to this agreement as to the course of action it will pursue.

D. An individual SHPO may withdraw from the PA upon written notice to all Signatories and Invited Signatories after having consulted with them for at least 30 days to attempt to find a way to avoid the withdrawal. Upon withdrawal, the BLM and the withdrawing SHPO will

comply with NHPA Section 106 in accordance with 36 CFR 800.3 through 800.7 or the execution of an agreement in accordance with 36 CFR 800.14(b). Such NHPA Section 106 compliance will be limited to consideration of effects of the Undertaking solely within the jurisdiction of the withdrawing SHPO. This PA will still remain in effect with regard to the portions of the Undertaking located in the jurisdiction of the SHPOs who have not withdrawn from the PA. If all SHPOs withdraw from the PA, the PA will be considered to be terminated.

XIX. Duration of This PA

A. This PA will expire if the Undertaking has not been initiated, the BLM ROW grant expires or is withdrawn, or the stipulations of this PA have not been initiated within 10 years from the date of its execution. At such time, and prior to work continuing on the Undertaking, the BLM must either (a) execute a Memorandum of Agreement pursuant to 36 CFR 800.6; execute a PA pursuant to 36 CFR 800.14(b); or request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. Prior to such time, the BLM may consult with the Consulting Parties to reconsider the terms of the PA and amend it in accordance with Stipulation XVII. The BLM shall notify the Consulting Parties within 30 days as to the course of action the BLM will pursue.

B. This PA will remain in full force and effect, not to exceed 15 years, unless terminated pursuant to Stipulation XVIII above, another agreement executed for the Undertaking supersedes it, or the Undertaking itself is cancelled. The BLM, in consultation with the other Signatories and Invited Signatories, will determine whether construction of all aspects of the Undertaking has been completed and that all terms of the PA have been fulfilled in a satisfactory manner. Upon a determination by the BLM that all terms of this PA have been fulfilled in a satisfactory manner, the BLM will notify the Consulting Parties to this PA in writing of the agency's determination. This PA will terminate and have no further force or effect on the day that the BLM so notifies the Consulting Parties to this PA.

   By agreement of all Signatories and Invited Signatories, the duration of the PA may be extended through an amendment as per Stipulation XVII.

   The BLM will retain responsibility for administering the terms and conditions of the ROW grant pertaining to historic properties for the life of the grant.

XX. General Provisions

A. Entirety of Agreement. This PA, consisting of 24 total pages, represents the entire and integrated agreement among the parties and supersedes all prior negotiations, representations and agreements, whether written or oral, regarding compliance with NHPA Section 106 for the Undertaking.

B. Prior Approval. This PA shall not be binding upon any party unless this PA has been reduced to writing before performance begins, as described under the terms of this PA, and unless the

PA is approved as to form by the appropriate State Attorney General or his or her representative.

C. Severability. Should any portion of this PA be judicially determined to be illegal or unenforceable, the remainder of the PA shall continue in full force and effect, and any party may renegotiate the terms affected by the severance.

D. Sovereign Immunity. No state, SHPO, or tribal government waives their sovereign or governmental immunity by entering into this PA and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of the PA.

E. Indemnification. Each Signatory to this PA shall assume the risk of any liability arising from its own conduct. Each Signatory agrees they are not obligated to insure, defend, or indemnify the other Signatories to this PA.

F. Counterparts. This PA may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument. The BLM will distribute copies of all pages to all Consulting Parties once the PA is executed in full.

G. All notices, requests, and other communications required or permitted hereunder between the Consulting Parties shall be in writing. All such notices, requests, and other communications shall be given (i) by delivery in person (ii) by a next day courier service, (iii) by first class, registered or certified mail, postage prepaid, or (iv) by electronic mail to the address of the Consulting Party as such party may specify in writing. All such notices, requests, and other communications shall be deemed to have occurred and be effective upon (i) receipt by the party to which notice is given, or (ii) the fifth (5th) day after having been sent, whichever occurs first.

EXECUTION of this PA and subsequent implementation of its terms shall evidence that the BLM and the federal agencies have taken into account the effects of the Undertaking on historic properties and afforded the ACHP an opportunity to comment on it in compliance with NHPA Section 106.

SIGNATORIES

Bureau of Land Management

By: _____ Title: Wyoming State Director (ACTING)
Signature

Mary Jo Rugwell Date: 10/3/16
Printed

Colorado State Historic Preservation Office

By: _____ Title: State Historic Preservation Officer
Signature

Steve Turner Date: 10/5/16
Printed

Utah State Historic Preservation Office

By: _____ Title: State Historic Preservation Officer
Signature

P. Brad Westwood Date: Oct 25, 2016
Printed

Ute Indian Tribe of the Uintah and Ouray Reservation

By: _____ Title: Chairman, Business Committee
Signature

Shaun Chapoose Date: 12-7-2016
Printed

Wyoming State Historic Preservation Office

By: Mary M. Hopkins
Signature
Mary Hopkins
Printed

Title: State Historic Preservation Officer

Date: 12/8/16

Attorney General's Office: Approval as to Form:

By: Samantha Caselli #158207
Signature
Samantha Caselli
Printed

Title: Assistant Attorney General

Date: 12/6/16

INVITED SIGNATORIES

U.S. Forest Service

By: _____ Title: Deputy Forest Supervisor, Uinta-Wasatch-Cache National Forest
Signature

Chad Hudson Date: 10/05/2016
Printed

National Park Service, Intermountain Region

By: _____ Title: Regional Director
Signature
Acting for
Sue E. Masica Date: Oct 13, 2016
Printed

Bureau of Indian Affairs

By: _____ Title: Regional Director, Western Region
Signature

Bryan Bowker Date: 12/6/16
Printed

U.S. Fish and Wildlife Service, Wyoming Field Office

By: _____ Title: Field Office Supervisor
Signature

Tyler A. Abbott Date: 10-6-16
Printed

U.S. Army Corps of Engineers, Sacramento District

By: _____ Title: Chief, Regulatory Division
Signature

Michael S. Jewell Date: 15 November 2016
Printed

State of Utah, School and Institutional Trust Lands Administration

By: _____ Title: Director
Signature

David Ure Date: 11/1/16
Printed

Approved as to Form
Sean D. Reyes
ATTORNEY GENERAL
By: _____

Utah Department of Transportation

By: _____ Title: Deputy Director
Signature

Shane Marshall Date: 10/17/16
Printed

Utah Reclamation Mitigation and Conservation Commission

By: _____ Title: Executive Director
Signature

Mark Holden Date: 10/4/16
Printed

Rocky Mountain Power

By: _____
Signature

Sharon Seppi
Printed

Title: Managing Director, Construction Services

Date: OCTOBER 4, 2016

CONCURRING PARTIES

Tribal Governments

Confederated Tribes of Goshute

By: _____ Title: Chairman
Signature
Virgil W. Johnson Date: _____
Printed

Eastern Shoshone Tribe of the Wind River Reservation

By: _____ Title: Chairman
Signature
Darwin St. Clair, Jr. Date: _____
Printed

Hopi Tribe

By: _____ Title: Chairman
Signature
Herman G. Honanie Date: _____
Printed

Jicarilla Apache Nation

By: _____ Title: President
Signature
Ty Vicenti Date: _____
Printed

Kewa Pueblo

By:_____ Title: Governor
Signature
Daniel Coriz Date:_____
Printed

Navajo Nation

By:_____ Title: President
Signature
Russell Begaye Date:_____
Printed

Northern Arapaho Tribe of the Wind River Reservation

By:_____ Title: Chairman
Signature
Dean Goggles Date:_____
Printed

Northwestern Band of Shoshone Nation

By:_____ Title: Chairperson
Signature
Shane Warner Date:_____
Printed

Ohkay Owingeh

By:_____ Title: Governor
Signature
Earl Salazar Date:_____
Printed

Paiute Indian Tribe of Utah

By:_____ Title: Chairperson
Signature
Corrina Bow Date:_____
Printed

Pueblo of Acoma

By:_____ Title: Governor
Signature
Kurt Riley Date:_____
Printed

Pueblo of Cochiti

By:_____ Title: Governor
Signature
Nicholas Garcia Date:_____
Printed

Pueblo of Isleta

By:_____ Title: Governor
Signature
E. Paul Torres Date:_____
Printed

Pueblo of Jemez

By:_____ Title: Governor
Signature
David Yepa Date:_____
Printed

Pueblo of Laguna

By:_____ Title: Governor
Signature
Virgil A. Siow Date:_____
Printed

Pueblo of Nambe

By:_____ Title: Governor
Signature
Phillip A. Perez Date:_____
Printed

Pueblo of Picuris

By:_____ Title: Governor
Signature
Gary Pyne Date:_____
Printed

Pueblo of Pojoaque

By:_____ Title: Governor
Signature
Joseph M. Talachy Date:_____
Printed

Pueblo of San Felipe

By:_____ Title: Governor
Signature
Michael T. Sandoval Date:_____
Printed

Pueblo of San Ildefonso

By:_____ Title: Governor
Signature
James R. Mountain Date:_____
Printed

Pueblo of Sandia

By: _____ Title: Governor
Signature
Isaac Lujan Date: _____
Printed

Pueblo of Santa Ana

By: _____ Title: Governor
Signature
Myron Armijo Date: _____
Printed

Pueblo of Santa Clara

By: _____ Title: Governor
Signature
J. Michael Chavarria Date: _____
Printed

Pueblo of Taos

By: _____ Title: Governor
Signature
Benito M. Sandoval Date: _____
Printed

Pueblo of Tesuque

By:_____ Title: Governor
Signature
Fredrick Vigil Date:_____
Printed

Pueblo of Zia

By:_____ Title: Governor
Signature
Jerome Lucero Date:_____
Printed

Pueblo of Zuni

By:_____ Title: Governor
Signature
Val Panteah, Sr. Date:_____
Printed

San Juan Southern Paiute Tribe

By:_____ Title: Chairperson
Signature
Tiffany Williams Date:_____
Printed

Shoshone-Bannock Tribes of the Fort Hall Reservation

By:_____ Title: Chairperson
Signature
Blaine Edmo Date:_____
Printed

Skull Valley Band of Goshute Indians of Utah

By:_____ Title: Chairperson
Signature
Candace Bear Date:_____
Printed

Southern Ute Indian Tribe of the Southern Ute Reservation

By:_____ Title: Chairperson
Signature
Clement Frost Date:_____
Printed

Ute Mountain Ute Tribe of the Ute Mountain Reservation

By:_____ Title: Chairperson
Signature
Manuel Heart Date:_____
Printed

Other Concurring Parties

Affiliated Ute Citizens

By:_____ Title: President and Chairperson
Signature
Dora Van Date:_____
Printed

Alliance for Historic Wyoming

By:_____ Title: Executive Director
Signature
Carly-Ann Anderson Date:_____
Printed

Huntington Eccles Scenic Byway

By:_____ Title: Scenic Byway Coordinator
Signature
Rosann Fillmore Date:_____
Printed

Milford Archaeological Research Institute

By:_____ Title: President
Signature
Mari Pritchard Parker Date:_____
Printed

Moffat County, Colorado

By:_____ Title: Natural Resources Director
Signature
Jeff Comstock Date:_____
Printed

National Trust for Historic Preservation Mountain/Plains Office

By:_____ Title: Sr. Field Officer
Signature
Jennifer Buddenborg Date:_____
Printed

Old Spanish Trail Association

By:_____ Title: National President
Signature
Ashley Hall Date:_____
Printed

Oregon-California Trails Association

By:_____ Title: Chair, Preservation Committee
Signature
Jere Krakow Date:_____
Printed

Overland Trail Cattle Company, LLC

By: _____ Title: Vice President
Signature
Garry Miller Date: _____
Printed

The We Nooch Society

By: _____ Title: President
Signature
Steve Shaffer Date: _____
Printed

Tracks Across Wyoming

By: Charles Lanham Title: President
Signature

Charles Lanham Date: October 14, 2016
Printed

Utah Public Lands Policy Coordination Office

By: _____ Title: Director
Signature

Kathleen Clarke Date: 10-17-16
Printed

Utah Professional Archaeological Council

By: _____ Title: Vice President of Government Affairs
Signature and Research

Jody J. Patterson Date: 04 Nov 2016
Printed

Utah Rock Art Research Association

By: _____ Title: President
Signature

Richard Jenkinson _____ Date: 10/22/16
Printed

Utah Statewide Archaeological Society

By: _____ Title: President
Signature

Heidi Essex _____ Date: _____
Printed

LIST OF APPENDICES

Appendix A - Map of Proposed Undertaking and Alternatives

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Alternative Routes

- Selected Alternative
- Alternative Route

Project Features

- Project Area Boundary
- Substation (Project Terminal)
- Link Node

Land Ownership

- Bureau of Land Management
- Bureau of Reclamation
- Indian Reservation
- National Park Service
- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- State Land
- Private Land

General Reference

- City or Town
- Substation
- Power Plant
- 500kV Transmission Line
- 345kV Transmission Line
- 230kV Transmission Line
- 138kV Transmission Line
- Railroad
- Interstate Highway
- U.S. Highway
- State Highway
- Other Road
- Lake or Reservoir
- State Boundary
- County Boundary

SOURCES:
Land Jurisdiction, BLM 2013; City or Town, ESRI 2013;
Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
State and County Boundaries, ESRI 2013

NOTES:
- The alternative routes shown on this map are draft and may be revised and/or refined throughout the development of the Project.
- Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
Printed: December 7, 2016

0 10 20 40 60
Miles

APPENDIX B

DEFINITIONS

1. *Adverse effect.* When an Undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places (National Register) in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association, consideration will be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the Undertaking that may occur later in time, be farther removed in distance or be cumulative (36 CFR 800.5(a)(1). Adverse effects on historic properties include, but are not limited to:

   - Physical destruction of or damage to all or part of the property;
   - Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, which is not consistent with the Secretary of the Interior's Professional Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;
   - Removal of the property from its historic location;
   - Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
   - Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
   - Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
   - Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

2. *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 (36 CFR 800.16(d)).

3. *Class III Inventory.* A Class III inventory is an intensive, 100-percent pedestrian field survey to determine the distribution, number, location, and condition of historic properties in an area in order to determine effects and potential mitigation methods. A Class III inventory is used when it is necessary to know precisely what historic properties exist in a given area or when information sufficient for later evaluation and treatment decisions is needed on individual historic properties (Bureau of Land Management (BLM) Manual 8110).

4. *Concurring Parties.* Concurring Parties are Consulting Parties who have expressly agreed by signing this Programmatic Agreement (PA) to participate in the consultations and concur with the terms of the agreement for purposes of meeting the goals of historic preservation.

Concurring Parties have only agreed to participate in the consultation process as outlined in the PA; it is understood that their participation does not necessarily imply an endorsement of the project in part or as a whole. Concurring Parties who refuse to concur in the agreement do not invalidate the agreement (36 CFR 800.6(c)(3)).

5. *Consulting Parties*. All required Signatories, Invited Signatories, and Concurring Parties.

6. *Construction*. The construction phase begins when the BLM has issued a right-of-way (ROW) grant to the proponent for the Undertaking. It includes all activities related to construction of the undertaking, including activities required to be completed in advance of construction, as well as all activities completed in order to reclaim lands disturbed during construction for 2 years after construction is completed or until cost recovery agreements related to construction expire.

7. *Cultural resource.* A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups (traditional cultural property). Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and using for public benefit described in the BLM Manual 8100. They may be, but are not necessarily, eligible for listing in the National Register.

8. *Cumulative effects*. The impact on the environment that 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 other actions (40 CFR 1508.7)

9. *Day(s).* For the calculation of time periods under this PA, "days" means calendar days. Any time period specified in this PA that ends on a weekend or a state or federal holiday is extended until the close of the following business day.

10. *Effect.* An alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register (36 CFR 800.16(i)).

11. *Historic property.* Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe and that meet the National Register criteria (36 CFR 800.16(l)(1). The phrase 'eligible for inclusion in the National Register' is used to refer to both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria as listed in 36 CFR 60.4.

12. *Historic Property(ies) Treatment Plan.* A document that details the procedures and techniques for resolving adverse effects to historic properties within the APE through avoidance, minimization, and/or mitigation. At the end of the Project, there would be a final report documenting all treatment completed in accordance with the HPTP.

13. *Literature Review.* A "literature review," "existing data review," "file search," or "records check" is generally the brief first step before initiating a field survey. Ideally, completing an existing data review means consulting the automated database of the State Historic Preservation Offices (SHPOs), as well as the BLM or U.S. Forest Service (USFS) office records. The literature review provides information regarding whether any survey has been conducted and any cultural properties have been recorded within or near the project location.

14. *Monitoring.* Actions performed to ensure compliance with the terms, conditions, and stipulations of a grant. Actions include inspection, construction, operation, maintenance, and termination of permanent or temporarily facilities and protection and rehabilitation activities until the right-of-way (ROW) holder completes rehabilitation of the ROW and the BLM approves it. Monitoring for cultural resources may have different objectives depending on the phase of the project.

15. *National Historic Landmark (NHL).* A district, site, building, structure or object, in public or private ownership, judged by the Secretary of the Interior to possess national significance in American history, archeology, architecture, engineering and culture, and so designated (36 CFR 65.3(h)).

16. *National Historic Trail (NHT).* A trail or route designated by Congress as a National Historic Trail under the National Trails System Act of 1968 as amended. To qualify for designation as a national historic trail, a trail or route must be established by historic use and be historically significant as a result of that use; be of national significance; and have significant potential for public recreational use or historical interest based on historic interpretation and appreciation. Generally, they are extended trails of 100 or more miles in length that follow as closely as possible and practicable the original trails or routes of travel of national historical significance. National historic trails have as their purpose the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment.

17. *Notice to Proceed.* A written authorization by the lead federal agency that allows the ROW holder to initiate actions under the ROW grant. The lead federal agency can issue separate notices to proceed if the project involves distinct work phases and/or locations. Each notice to proceed will specify the nature of work, location, and dates to be authorized.

18. *Operations and Maintenance.* Activities associated with operation and maintenance of the approved ROW grant over the life of the ROW grant. This includes all activities related to the functioning of the Undertaking after construction and reclamation are completed and prior to any activities related to decommissioning of the Undertaking, per Stipulation XII. Activities during this this time are generally infrequent, predictable, and routine. Any actions not specifically approved in the ROW grant, such as changes in equipment used or actions outside the ROW require approval of the BLM.

19. *Plan of Action.* A document included in the HPTP that establishes procedures for ensuring the proper treatment of Native American remains and related grave goods encountered on federal lands pursuant to 43 CFR § 10.

20. *Plan of Development (POD).* A plan of development includes the detailed construction, operation, rehabilitation, and environmental protection plan of the project. The project Applicant completes the POD, which is reviewed by the land-managing agencies.

21. *Property of traditional religious and cultural importance.* A property that is eligible for the National Register because of traditional religious and cultural importance to an Indian tribe. A 1992 amendment to the National Historic Preservation Act (NHPA, 54 U.S.C. § 306108 [as recodified]) directs that properties of traditional religious and cultural importance to an Indian tribe may be determined to be eligible for inclusion on the National Register and that, in carrying out its responsibilities under Section 106 of the Act, a federal agency shall consult with any Indian tribe that attaches religious and cultural importance to such properties. This term also may appear as "properties of religious and cultural significance," "properties of traditional religious and cultural significance," "properties of cultural or religious importance," or "properties of religious or cultural importance."

22. *Reclamation.* The process of restoring lands disturbed during construction to, or as close to as practicable, their pre-construction condition, generally involving restoration of vegetation, soils and topography. Reclamation processes and practices are described in the POD and generally are to be completed no later than 2 years after construction is completed.

23. *Record of Decision (ROD).* The public record made by the agency at the time of its decision which states what the decision was, identifies all alternatives considered by the agency in reaching its decision, specifies the alternative which was considered to be environmentally preferable, and states whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation (40 CFR Part 1505.2). Until an agency issues a record of decision, no action concerning the proposal shall be taken that would (1) have an adverse environmental impact or (2) limit the choice of reasonable alternatives (40 CFR Part 1506.1).

24. *Segment.* Any of the parts into which something (i.e., transmission line) is separated; section.

25. *Setting assessment.* A methodology devised to determine the effects of an undertaking to those historic properties for which setting, feeling and/or association contribute to National Register eligibility.

26. *Signatories. Required signatories* execute, may amend, and may terminate this agreement. *Invited signatories* have the same rights to amend and terminate the agreement once they sign it per 36 CFR 800.6(c)(2).

27. *Targeted Field Inventory*. A targeted field inventory is a focused or special-purpose information tool that is less systematic, less intensive, less complete, or otherwise does not meet Class III inventory standards. Reconnaissance surveys may be used, among other purposes, for locating particular types of cultural resources, such as those for which setting, feeling, and association are important to their integrity. Fieldwork may be targeted to specific areas or types of locations in which such properties may exist, or to examine known cultural resources to determine whether they are significant and whether setting, feeling and/or association may be important to their significance.

28. *Traditional cultural property (TCP).* A property that is eligible for inclusion in the National Register 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 (National Register Bulletin 38). Although any cultural or community group may identify relevant traditional cultural properties, the regulations at 36 CFR 800 specifically require identification and evaluation of properties of traditional religious and cultural importance to Indian tribes.

29. *Tribal lands* as defined in the NHPA Section 106 regulations means "all lands within the exterior boundaries of any Indian reservation and all dependent Indian communities" (36 CFR 800.16(x). *Tribal lands* as defined in the ARPA and Federal Curation of Collections regulations (36 CFR Part 79 and 43 CFR Part 7.3(e)) means lands of Indian tribes, or Indian individuals, which are either held in trust by the United States or subject to a restriction against alienation imposed by the United States, except for subsurface interests not owned or controlled by an Indian tribe or Indian individual.

30. *Variance*. A written authorization from the responsible agency permitting construction in a manner that departs from the specific requirements of the POD.

APPENDIX C

PROCEDURES FOR DETERMINING EFFECTS ON HISTORIC PROPERTIES FOR WHICH SETTING, FEELING, OR ASSOCIATION ARE ASPECTS OF INTEGRITY

1.0 INTRODUCTION

This methodology defines the procedures for identifying and evaluating effects from the Energy Gateway South Transmission Project (Undertaking) to historic properties within the indirect effects Area of Potential Effect (APE) for which the qualities of setting, feeling, or association are aspects of integrity and thereby characteristics that qualify these properties for eligibility for listing on the National Register of Historic Places (NRHP). The Bureau of Land Management (BLM), in consultation with the Advisory Council on Historic Preservation (ACHP); the Wyoming, Colorado, and Utah State Historic Preservation Officers (SHPOs); and Consulting Parties to the Programmatic Agreement (PA), has compiled these procedures, pursuant to Stipulations I.A.2 and II.E of the PA.

The Applicant will produce separate reports that identify effects to setting, feeling or association for historic properties in Wyoming, Colorado, and Utah. The goal will be to include these reports as stand-alone addenda to the Class III inventory reports for each state. Each report will meet the reporting requirements of the BLM and the SHPO from each respective state.

The methodology involves four components. Within the APE for Indirect Effects (indirect effects APE) defined in Stipulation I.A.2 of the PA: (1) identify historic properties from which the Undertaking can be seen and for which setting, feeling, or association is an aspect of integrity; (2) complete field evaluations of the integrity of these historic properties; (3) assess effects on setting, feeling, or association of these historic properties; and (4) resolve adverse effects. Complete Components 1, 2 and 3 and include results in the Class III inventory report for the Undertaking; complete Component 4 and include in the Historic Properties Treatment Plan (HPTP). Each component of this methodology is addressed below. In addition to the following detailed description of each component, Exhibit 1 to this appendix is a field implementation guide intended to assist field personnel in implementing these procedures.

1.1 Definitions and Eligibility Criteria

For the purposes of this methodology, cultural resources are defined as archaeological, historical, or architectural sites, districts, buildings, structures, places, and objects that have been documented on the official site forms used by the SHPOs in the states of Wyoming, Colorado, and Utah; or listed on the NRHP or state registers of historic places; and additionally those properties identified by Consulting Parties in Stipulation II.D.2a of the PA. Cultural resources include sites known to be important to tribes; for example, rock art, rock cairns, rock alignments, and stone circles. While cultural resources encompass definite locations (sites or places) of traditional cultural or religious significance to specified social and/or cultural groups (including traditional cultural properties), as in the definition in Appendix B of the PA, and are most readily identified by Consulting Parties from these groups bringing them forward, per Stipulation II.D.2.a of the PA.

Cultural resources eligible for listing on the NRHP are referred to as "historic properties." Historic properties must demonstrate importance in American history, architecture, archaeology, engineering, or culture. A historic property is considered significant in these categories if it possesses integrity of location, design, setting, materials, workmanship, feeling, and association and meets one or more of the following criteria:

> (a) is associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) is associated with the lives of persons significant in our past; or
>
> (c) embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
>
> (d) has yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

1.2 Integrity

Integrity is defined as "the ability of a property to convey its own significance" (National Park Service [NPS] 1995:44). According to NRHP guidelines, the evaluation of integrity must always be grounded "in an understanding of a property's physical features and how they relate to its significance" (NPS 1995:44). Setting, feeling, and association (also defined in NPS 1995:44-45) are particularly sensitive to visual, audible, and atmospheric effects and convey the property's historic character.

- **Setting** is the physical environment of a historic property. Setting encompasses the physical features of each historic property, in which the property played its historic role. It includes natural features such as topography and vegetation, and man-made features that are part of the property and the surrounding landscape.
- **Feeling** is a property's expression of the aesthetic or historic sense of a particular period of time. Do the physical features taken together convey the property's historic character? Does the property "feel" like it did during its historic period? Are the sights and sounds the same? Can you imagine the property during its period of significance? Examine the potential modern intrusions which may distract from the historic features and character of the property.
- **Association** is the direct link between an important historic event or person and a historic property (NPS 1995:44-45). Is there a direct link between the historic person or event and the historic property? Examine whether the place at which the event or activity occurred is sufficiently intact to convey the historic link or relationship to an observer.

All other terms not defined within this document are as defined in the PA.

1.3 Area of Potential Effect for Indirect Effects (Indirect Effects APE)

As described in Stipulation I. A. 2 of the PA, the indirect effects APE extends to the visual horizon or for 3 miles on either side of the transmission line centerline, whichever is closer. Where the indirect effects APE includes traditional cultural properties, properties of traditional religious and cultural importance, National Historic Landmarks, National Historic Trails, and other exceptional classes of historic properties for which setting, feeling, or association contributes to eligibility, additional analyses may be required and the indirect APE may be modified accordingly, following procedures described in I.B of the PA. Consulting Parties may identify cultural resources to consider in this analysis beyond the 3 mile indirect effects APE.

2.0 INVENTORY HISTORIC PROPERTIES FOR WHICH SETTING, FEELING OR ASSOCIATION IS IMPORTANT TO INTEGRITY

Identifying historic properties within the indirect effects APE for which setting, feeling, or association may be important to their integrity involves a two-step approach: (1) conducting a GIS viewshed analysis to identify areas in the indirect effects APE from which the Undertaking is visible and (2) compiling a list of historic properties within the potentially visible portion of the indirect effects APE for which setting, feeling, or association is anticipated to be an important quality of integrity. This two-step viewshed analysis screening approach effectively eliminates historic properties that are located within the indirect effects APE but have no view of the Undertaking or for which setting, feeling, or association is not an important quality of integrity. The NRHP eligibility screening eliminates cultural resources that do not meet the criteria for eligibility as set forth in the NRHP. The details of each step are discussed below.

2.1 Viewshed Analysis Screening

The BLM will require the Applicant to conduct a viewshed (seen-unseen) analysis (using geographic information system [GIS] technology) to generate a viewshed that represents the area of the Undertaking (especially transmission line towers) visible within the indirect effects APE. The Undertaking may be visible because of anticipated (1) landform modifications that are necessary to prepare a right-of-way for construction, (2) the removal of vegetation to construct and maintain a facility, and (3) the introduction of new above-ground elements into the landscape. Conduct the GIS viewshed analysis screening using the best and most current information available about these visibility factors at the time work begins for this report. Eliminate from further consideration all portions of the indirect effects APE from which the Undertaking is not visible.

2.2 NRHP Eligibility Screening

Within the visible portion of the indirect effects APE defined in 2.1, identify historic properties for which setting, feeling, or association contributes to integrity, based upon NRHP evaluations. Use existing cultural records databases at SHPO and federal land-management agencies to identify the pool of historic properties eligible under Criteria A, B, and/or C that fall within the indirect APE and that may be affected by the Undertaking. If eligibility criteria are not available or are incomplete in electronic databases, site types may be used to search within electronic databases for sites that are likely to be eligible under A, B, and/or C. For example, “historic

structure" may be a starting place to search for historic properties eligible under A, B, and/or C without having to go through every paper site form to find these sites.

Include in this pool certain types of historic properties eligible under Criterion D and known to be important to tribes or other Consulting Parties, such as rock art, cairns, rock alignments or stone circles. The Consulting Parties are encouraged to define these kinds of sites, and also any specific sites that should be included, within 60 days after the Record of Decision (ROD) is signed, per Stipulation II.D.2.a of the PA. The BLM, in consultation with other involved land managing agencies and the applicable SHPO, may include historic properties eligible under Criterion D at its discretion. Along with those sites brought forward by Consulting Parties, which may need to be evaluated for National Register eligibility, the list of historic properties will include traditional cultural properties, properties of traditional religious and cultural importance, National Historic Landmarks, National Historic Trails, and sites identified as sacred or respected places during tribal consultation. Tribally sensitive information will not be shared with other Consulting Parties.

The focus of this identification effort is on historic properties likely to be determined eligible under criteria A, B, or C. Place high priority on areas of importance identified by Consulting Parties. Conversely, Consulting Parties should take care to identify places of importance to them in the indirect effects APE per Stipulation III.D.2.a of the PA. Examples of properties likely to be determined eligible may include named roads or other named features. Examples of properties unlikely to be determined eligible may include unnamed roads and trails or other unnamed features, historic linear utilities (e.g., transmission or telegraph lines) recorded as historic sites, and historic mines or industrial sites where setting is unlikely to contribute to integrity.

Screening for Site Type: As a screening measure, the BLM, in consultation with the Consulting Parties, may define site types for which setting, feeling, or association are important to integrity, and may likewise define site types for which setting, feeling, or association are not important to integrity. In conjunction, site types for which audible or atmospheric effects are not important may be defined. The Applicant may propose definitions of such site types to the BLM at the beginning of the assessment. Describe these definitions in the report and remove historic properties screened out through this process from the list of historic properties to visit in the field.

Screening for Overall Integrity: In some instances, historic properties have been entirely destroyed or compromised to the extent that the site no longer meets the criteria for listing in the NRHP. If lack of integrity can be ascertained during the inventory process, these "historic properties" are no longer eligible and can be removed from the list of historic properties to visit in the field.

Screening for Setting, Feeling, or Association: If the identification of the historic property's integrity of setting, feeling, or association has not been included in available documentation, the BLM in consultation with SHPOs, the Consulting Party who brought forward the historic property, and any other appropriate land-managing agency will determine the importance of these aspects of integrity to the historic property. This determination also will apply to places brought forward by Consulting Parties through Stipulation II.D.2.a. of the PA, which may not be present in SHPO or agency site files. Where possible, this determination will be made prior to

completion of the field inventory. The BLM will share any such determinations with all Consulting Parties as part of the documentation for the Undertaking.

Access to Private Land: The Applicant will demonstrate a good-faith effort to acquire access to visit historic properties on private land beyond the direct effects APE. Historic properties on private land where access cannot be obtained for fieldwork will be assessed remotely.

Consideration of Audible and Atmospheric Effects: Identify places where construction activities will be longer in duration, or more extensive in scope, or where they may have more than typical audible and atmospheric effects. These "intensive construction locales" may include construction staging areas, areas prone to excessive noise or dust, or helicopter overflight areas near historic properties of concern for these indirect effects. In addition to the use of reference points for proposed transmission-line-structure locations to measure visual effects, include the locations of such places as reference places for assessing audible and atmospheric effects.

Geodatabase: Compile a geodatabase of all historic properties identified at the end of the inventory process in Sections 2.1 and 2.2 above (including historic properties identified during Class III inventories conducted for this Undertaking). This database will include the following information in tabular format: site location, Smithsonian site number (if available), source of the information, land ownership, site description, NRHP evaluation and nominating criteria, and additional reasons for inclusion (e.g., National Historic Trails, sacred sites, sites brought forward by Consulting Parties). Tribally sensitive information and site location information for sensitive sites will not be shared with other Consulting Parties.

GIS Screening in the Office: To verify that the Undertaking has an effect on the historic properties in the geodatabase prior to fieldwork, employ GIS methods in the office for visualizing features of the Undertaking such as using simulation analysis, as available through Google Earth "street view." Using GIS in the office, assign a Cultural Key Observation Point (CKOP) to the center of each historic property in the geodatabase, and then conduct a GIS analysis of the Undertaking's visibility using those CKOPs, as measured to the nearest reference reference point for proposed transmission-line-structure location(s) or intensive construction locale. The analysis should result in a simulated view of the landscape from each CKOP with the Undertaking in it. The agency archaeologist(s) and the Applicant will review these simulated views before going to the field so that they can identify historic properties where the effects of the Undertaking are clearly so minor that further inventory is not necessary. In the report and in the geodatabase, list historic properties dropped from further analysis because of no or very minor (no adverse) effects as identified through this process.

Simulation of Undertaking: Based on the GIS screening in the office, produce simulated images that show the anticipated Undertaking from each CKOP. Where field inventory is necessary, take these images to the field for reference, to help field crews visualize where the Undertaking will be located in relation to each historic property that will be visited.

2.3 List of Historic Properties for Field Evaluation

Historic properties that remain on the list after the viewshed analysis screening (Section 2.1 above) and NRHP eligibility screening (Section 2.2 above) are those for which setting, feeling, or association has been identified as important to their integrity. Schedule the tasks involved in

inventorying and evaluating these properties with the goal of including the completed report as an addendum to the Class III inventory report. Next, assess potential visual, audible, or atmospheric effects from the Undertaking on these historic properties in the field.

3.0 FIELD EVALUATIONS

Complete the following analysis on historic properties identified for field inventory as a result of the screening done during the inventory stage (Beck et al 2012; BLM 2006, 2013a and b, 2014; Delaware State Historic Preservation Office 2003). Consult the National Register Bulletin's *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 1995) as the primary reference to assess setting, feeling, or association as they apply to eligibility and integrity. First, collect photographic data from each potentially affected historic property to document effect recommendations and, secondly, assess the effects on setting, feeling, or association using the attributes described below.

3.1 Overall Integrity Prior to the Undertaking

In the field, record and evaluate the National Register eligibility of cultural resources identified by Consulting Parties through Stipulation II.D.2.a of the PA if they have not been previously recorded in SHPO site files and if BLM's review of the screening process under Section 2.0 above indicates that they need to be recorded. Include in eligibility recommendations an assessment of site integrity with emphasis on setting, feeling, and association. Document the rationale for eligibility recommendations in the report and on state site forms for these newly recorded sites, and include the site forms with the report.

If the field visit shows that a historic property has been destroyed or compromised to the extent that the historic property no longer meets the criteria for eligibility, document the site's present condition with a site-form addendum or a site-update form as required by the applicable SHPO; prepare and submit this documentation with the report. Evaluate whether historic properties that have been compromised but not destroyed since their last recording retain NRHP eligibility, with an emphasis on integrity of setting, feeling, and association. If not, eliminate these sites from further consideration, and document the "not eligible" recommendation in the report. No further assessment is required.

3.2 Photographic Data Collection

3.2.1 Establish Cultural Key Observation Points and Photograph Undertaking

At each historic property identified in Section 3.1 that is visited in the field and that retains integrity, establish at least one CKOP with a representative view of the Undertaking. Take sufficient photographs from the CKOP(s) at each historic property to document the view of the Undertaking from the CKOP. If a historic property is linear or large, or if there are several important features at the property, more than one CKOP may be needed. Position the camera at each CKOP to capture the viewshed from the historic property facing the proposed transmission-line structure(s) or intensive construction locale. In addition, take photographs in the four opposite or perpendicular directions from each CKOP that best demonstrate the existing setting in relation to the Undertaking. Record the camera height and aspect and the global positioning system (GPS) location for each CKOP. Use an appropriate lens and the same model of camera

and camera lens, or cameras and lenses with the same resolution and image quality at all CKOPs. Note in the report the camera and lens model used.

3.2.2 Visual Modeling and Simulations

After fieldwork, superimpose all visible and proposed components of the Undertaking onto a representative image or images from each historic property. If visual simulations are not effective or obtainable, GIS modelling may be used. Simulations will be to scale in proper geographic locations and with appropriate component elevations and heights. The result of these simulations or models will be a graphical illustration of the potential visual impacts of the Undertaking on each potentially affected historic property.

The visual simulations or models document the visibility of the Undertaking from the historic property; include them in the report. Complete the assessment described in Section 3.3 below in the field, at the historic property and also consider effects from atmospheric or audible elements at historic properties near intensive construction locales in the field.

3.3 Analyzing Effects on Setting, Feeling or Association

Systematically identify and analyze effects on the integrity of setting, feeling, and association at each historic property, as assessed in the field and documented with with photographs, visual simulations, and models. Employ the following criteria to describe the effects of the Undertaking on each historic property and document the results for each historic property. If possible, an agency archaeologist should be in the field with the cultural resource consultant so that effect recommendations can be made jointly.

Integrity of Setting, Feeling, or Association
For the assessment of integrity, the setting, feeling, and association of the historic property are the main concerns. Assess the historic property's integrity of setting, feeling, and association considering the simulations of the Undertaking; i.e., assuming the Undertaking is in place, as follows:

High. The historic property retains its integrity. The introduction of the Undertaking leaves the setting, feeling, and association intact and relatively untouched.

Low. The historic property retains few aspects of integrity. The introduction of the Undertaking leaves the setting, feeling, and association severely compromised or lacking in the historic property's ability to convey its significance.

Distance
Distance is the actual distance between the historic property and the Undertaking. Because areas that are closer potentially have a greater effect on the observer, they draw greater attention than areas farther away. Using GIS measurements record the distance from each CKOP to the closest visible reference tower or intensive construction locale of the Undertaking. In the field, record the number of towers visible from each CKOP.

Contrast
Assess contrast by comparing the Undertaking features with the major elements in the existing setting, including topography, vegetation, and man-made features. Use the basic design elements of form, line, color, and texture to make this comparison and to describe the visual contrast anticipated to be created by the Undertaking. Follow the guidelines in BLM's Visual Resource Contrast Rating Handbook H-8431-1 (BLM 2014c) for making the visual contrast rating and use the Visual Contrast Rating Worksheet in the current Wyoming protocol Appendix C (BLM 2014a); record the date and time of day of the rating. If possible, complete the visual contrast rating at the time of day and year and under light and vegetation conditions that are representative of when most people are likely to see the Undertaking from the historic property. Append the Visual Contrast Rating Worksheets for each historic property to the site form.

No Contrast. The undertaking cannot be seen at all.

Weak Visual Contrast. The elements of the Undertaking, or portions of the elements, can be seen but will not dominate the setting or attract the attention of the casual observer.

Moderate Contrast. The elements of the Undertaking tend to stand out in the setting.

Strong Contrast. The elements of the Undertaking clearly dominate the setting.

Cumulative Effects
For the purposes of this document and paraphrasing the National Environmental Policy Act definition (40 CFR 1508.7), cumulative effects on historic properties are the effects that result from the incremental impact of the Undertaking when added to other past, present and reasonably foreseeable future undertakings regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. Assess cumulative effects as follows in relation to past, present and reasonably foreseeable future undertakings:

Project Compatible. Multiple or large industrial features or developments have appeared in the surrounding landscape. These features dominate the setting, feeling and association; the Undertaking does not create a striking contrast.

Project Moderately Compatible. Single or small industrial features or developments have appeared in the surrounding landscape. These other features are visible on the landscape but the Undertaking dominates the setting, feeling, and association.

Project Incompatible. No other industrial or developmental features appear in the surrounding landscape. The Undertaking creates a striking contrast that is incompatible with the setting, feeling, and association.

Results of Analysis
Support recommendations regarding effects on the setting, feeling, and association of each historic property in the report with photographs from CKOPs, showing visual simulations of the Undertaking and analysis of the attributes described above using forms or other means of record

keeping. Submit these records, along with site form updates as required, as an appendix to the report; they eventually will be integrated into SHPO cultural resources site files.

4.0 ASSESSMENT OF EFFECTS ON SETTING, FEELING, OR ASSOCIATION

Adverse effects on historic properties may occur from a "change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance (36 CFR 800.5(a)(2)(iv)," including "visual, atmospheric, or audible intrusions" (Advisory Council on Historic Preservation 2014). The primary question to be addressed is "can the setting, feeling or association of the property continue to effectively convey its historic significance despite the effect of the Undertaking?"

Planning the Undertaking provides the opportunity to avoid and minimize effects on historic properties. Avoidance is the preferred strategy for eliminating effects on historic properties. Avoidance methods may include, but are not limited to, "screening" the transmission line by moving it behind a hill, moving transmission-line structure locations, and realigning proposed access routes. Minimizing adverse effects may include camouflaging or reducing the reflective qualities of materials used in construction; feathering, tapering, or selective planting of native vegetation along cleared areas; and using existing roads as access roads, as outlined in the Draft Environmental Impact Statement for the Undertaking (BLM 2014b).

4.1 Recommendation of Adverse Effect

Under 36 CFR 800.5(a)(1), an adverse effect is found when an undertaking alters "directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

4.2 Recommendation of No Adverse Effect

An effect on setting, feeling, or association, whether direct or indirect or a combination of the two, does not automatically call for an "Adverse Effect" recommendation. Under 36 CFR 800.5(b)(3), if an effect caused by the Undertaking does not meet the criteria for adverse effect in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed, so the adverse effect criteria are not met, then a recommendation of "no adverse effect" is warranted. In other words, the effect may not compromise the integrity of the historic property to such an extent that it diminishes said integrity or causes an adverse effect.

4.3 Recommendation of No Effect

A recommendation of "No Effect" means that the undertaking cannot be seen or heard from the historic property or its effects on the integrity of the historic property are so minor as to be negligible.

5.0 RESOLUTION OF ADVERSE EFFECTS

As outlined in the PA at Stipulation VII, a HPTP will be prepared after the ROD is signed, the Undertaking's footprint is finalized, and the Class III inventory report is completed. All historic properties that will be adversely affected by the Undertaking will be reviewed and addressed individually within the HPTP. Include recommendations for minimizing adverse effects on setting, feeling, and association in the report and in the HPTP.

The avoidance and minimization measures described in Section 4.0 may not be viable options in all cases of adverse effects on setting, feeling and association. Where on-site mitigation of visual effects cannot be achieved, develop alternative mitigation measures following the process spelled out in the PA, Stipulation VII.A.5 and include them in the HPTP.

6.0 POST-CONSTRUCTION RE-EVALUATION

After construction is complete, revisit each historic property evaluated in the field prior to construction, re-photograph it, and re-evaluate its integrity and the effects of the Undertaking. Describe whether construction impacts are likely to be temporary or permanent. Report pre- and post-construction integrity and effect evaluations as a stand-alone report required by the HPTP.

7.0 REVISIONS TO PROCEDURES

Revisions to the procedures described above may be proposed and accepted through review by the BLM and the Consulting Parties without amendment of the PA.

8.0 REFERENCES

Advisory Council on Historic Preservation

2014 Section 106 Regulations, Flow Chart, Explanatory Material. Accessed online at: http://www.achp.gov/flowexplain.html.

2004 36 CFR Part 800 – Protection of Historic Properties. Accessed online at: http://www.achp.gov/regs-rev04.pdf.

Beck, R. Kelly, Nicci Barger, Lindsey Kester, and Tanya Johnson

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Bureau of Land Management

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2003 *Assessing Visual Effects on Historic Properties*. Delaware State Historic Preservation Office, Dover, Delaware. Accessed online at: http://history.delaware.gov/pdfs/visualeffects.pdf.

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EXHIBIT 1. FIELD IMPLEMENTATION GUIDE PROCEDURES FOR DETERMINING EFFECTS TO HISTORIC PROPERTIES FOR WHICH SETTING, FEELING, OR ASSOCIATION ARE ASPECTS OF INTEGRITY

Purpose: To summarize the procedures for identifying and evaluating effects from the Energy Gateway South Transmission Project (Undertaking) on historic properties within the indirect effects Area of Potential Effects (APE)), for which the qualities of setting, feeling, or association are aspects of integrity, as defined in Appendix C of the Programmatic Agreement (PA). This field guide is intended as a quick reference for carrying out the procedures described in Appendix C.

Step 1: Define Indirect Effects APE and Conduct Viewshed Analysis:
The Undertaking's indirect effects APE extends to the visual horizon or a maximum of 3 miles on either side of the transmission line centerline, whichever is closer. Use a geographic information system (GIS) viewshed analysis to model the viewshed surrounding the Undertaking and refine the APE to include only areas where the Undertaking can be seen.

Step 2: Conduct a File Review–Screen for NRHP Eligibility:
Examine existing records for all sites in the refined APE to identify known sites that may be sensitive to visual effects. Sites that are eligible for the National Register of Historic Places (NRHP) under Criterion A, B, or C are considered potentially sensitive. Sites that are eligible only for their data potential (i.e., Criterion D) may be considered for analysis by the BLM in consultation with other applicable land managing agencies and the State Historic Preservation Officer (SHPO). Place a high priority on areas identified by Consulting Parties, even if outside the indirect effects APE. They have 60 days after the Record of Decision (ROD) is signed to provide this information. Site types may be used to search for sites that are likely to be eligible under A, B, and/or C. Screen site types for those for which setting, feeling, or association are important.

Step 3: Verify Site Integrity:
A site must retain integrity of setting, feeling, or association to be sensitive to effects caused by the Undertaking. Screen out sites that no longer possess integrity; i.e., have been destroyed or damaged to the extent that their integrity is compromised. If integrity of setting, feeling, or association has not been included in site documentation, determine the importance of these aspects to the historic property.

Outcomes: Steps 1 through 3 should result in a geodatabase of historic properties sensitive to integrity of setting, feeling, and/or association and visible from the Undertaking. Begin to compile this geodatabase as soon as the ROD is signed and a right-of-way (ROW) for the Undertaking is approved.

Step 4: Check Visual Simulations in the Office Prior to Fieldwork:
Employ GIS (for example, Google Earth "street view") to visualize the Undertaking from the historic properties. In the office, assign Cultural Key Observation Points (CKOPs) at the center of historic properties in the geodatabase, then conduct a GIS analysis of the Undertaking's

visibility using those CKOPs. Identify intensive construction locales that may be important for assessing audible and atmospheric effects. View the simulated Undertaking's nearest reference tower or intensive construction locale from the historic properties to screen out those historic properties where the effects of the Undertaking are clearly so minor that a field visit is not necessary. Compile a list of the historic properties eliminated by this process.

Produce computer-generated simulations that show the Undertaking from each CKOP. Take these images to the field for reference to help visualize where the Undertaking will be located in relation to each historic property that will be visited.

Outcome: Step 4 should result in a list of historic properties to evaluate in the field for effects from the Undertaking.

Step 5: Fieldwork−Visit Historic Properties to Verify Eligibility:
Use the National Register Bulletin's *How to Apply the National Register Criteria for Evaluation* (National Park Service [NPS] 1995) as the primary reference to assess setting, feeling, or association as they apply to eligibility and integrity.

Record and recommend the National Register eligibility of cultural resources identified by Consulting Parties if they have not been previously recorded. Include an assessment of site integrity (setting, feeling, and association) with eligibility recommendations.

If a historic property has been destroyed or compromised to the extent that it is no longer eligible, document the site's present condition with a site update and re-evaluate the historic property's eligibility.

Outcome: Step 5 should result in a final list of historic properties to be field-evaluated for effects to setting, feeling, and association.

Step 6: Fieldwork–Take Photographs Before Construction:
At each historic property visited, establish at least one field CKOP representing a typical view of the Undertaking. If a historic property is large or linear, or if there are several important features at the property, more than one CKOP may be needed. Photograph the proposed Undertaking location from the CKOP. Take photos in the four opposite or perpendicular directions from each CKOP. Record camera height and aspect and GPS location for each CKOP. Use an appropriate lens; use the same camera and the same lens (or model of camera and lens) for all sites; include camera and lens information in report.

After fieldwork, superimpose all components of the Undertaking onto the photographic images to scale in proper geographic locations and with appropriate component elevations.

Step 7: Fieldwork–Analyze Effects on Setting, Feeling, or Association:
While referring to the simulations created in Step 4, evaluate the effect of the Undertaking using a visual assessment worksheet. Include at a minimum assessments of the following attributes: site integrity (setting, feeling, or association), distance, contrast, and cumulative effects.

Follow the guidelines in the BLM's Visual Resource Contrast Rating Handbook H-8431-1 for making the visual contrast rating, and use the Visual Contrast Rating Worksheet in the current Wyoming protocol Appendix C (BLM 2014), including recording the date and time of day of the rating. Recommend how contrast can be minimized.

Outcome: Steps 6 and 7 should result in recommendations regarding effects on the setting, feeling and association of each historic property documented with photographs from CKOPs showing visual simulations of the Undertaking, and written analysis of the attributes described above. Submit these records, along with site-form updates, with the report.

Step 8: Assess Effects on Setting, Feeling, or Association:
Address the primary question "can the setting, feeling or association of the property continue to effectively convey its historic significance despite the effect of the Undertaking?"

Recommend No Effect, No Adverse Effect, or Adverse Effect: An effect on setting, feeling, or association does not automatically call for an "Adverse Effect" recommendation. If an effect caused by the Undertaking does not meet the criteria for adverse effect in 36 CFR 800.5(a)(1) or the undertaking is modified or conditions are imposed so the adverse effect criteria are not met, then recommend "no adverse effect." In other words, the effect may not compromise the integrity of the historic property to such an extent that it diminishes the integrity or causes an adverse effect.

Outcome: Step 8 should result in recommendations of effect for each historic property visited.

Step 9: Recommend Ways to Resolve Adverse Effects:
Avoidance is the preferred strategy for eliminating effects on historic properties. Avoidance methods include "screening" the transmission line by moving it behind a hill, moving transmission-line structure locations, and realigning proposed access routes. Minimizing adverse effects includes camouflaging or reducing the reflective qualities of construction materials, tapering or selective planting of native vegetation in cleared areas, and using existing access roads. Where on-site mitigation of visual effects cannot be achieved, alternative mitigation measures will be developed.

Address each historic property with adverse visual, auditory, or atmospheric effects from the Undertaking in the HPTP, which will be prepared after the ROD is signed, the Undertaking's footprint is finalized and the Class III inventory report is completed. Recognize that it may not be possible to resolve adverse effects on site and alternative mitigation may be required.

Outcome: Step 9 should result in a recommendation for resolving adverse effects for each historic property whose integrity of setting, feeling, or association will be adversely affected.

Step 10: **After Construction is Completed**:
Revisit each historic property visited in Step 7. Re-photograph and re-evaluate integrity and effects. Report pre- and post -construction integrity and effect evaluations with photos as a stand-alone report required by the HPTP.

Outcome: Step 10 should result in a post-construction check on the pre-construction integrity evaluations. This will help determine whether the process outlined above is working adequately.

APPENDIX D

HISTORIC PROPERTIES TREATMENT PLAN
(RESERVED – TO BE DEVELOPED AFTER THE CLASS III INVENTORIES)

Appendix F – Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

JAN 15 2016

In Reply Refer To:
06E13000/WY14F0075b

Memorandum

To: State Director, Bureau of Land Management, Wyoming State Office, Cheyenne, Wyoming

From: Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Biological Opinion and Informal Consultation for the Energy Gateway South Transmission Line Right-of-Way Project—Carbon and Sweetwater Counties, Wyoming; Moffat and Rio Blanco Counties, Colorado; and Uintah, Duchesne, Wasatch, Utah, Sanpete, and Juab Counties, Utah

Enclosed are the U.S. Fish and Wildlife Service's (Service) concurrence and final Biological Opinion (BO) for the Bureau of Land Management's (Bureau) determinations of effects on species pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA; 50 CFR §402.13 and §402.14), for the proposed Energy Gateway South Transmission Line Right-of-Way Project (Project). The Bureau is the lead federal agency for this Project, and the following cooperating federal agencies are included under the Bureau's section 7 consultation for the Project: the Service, the U.S. Department of Agriculture Forest Service (USFS), the U.S. Army Corps of Engineers (USACE), and the Bureau of Indian Affairs (BIA).

This consultation addresses only the route selected as the preferred alternative for the Project by the Bureau. The Project includes the construction, operations, and maintenance of approximately 429 miles of new 500-kilovolt (kV) single-circuit alternating current (AC) transmission line from the Aeolus Substation near Medicine Bow in Carbon County, Wyoming to the Clover Substation near Mona in Juab County, Utah; the construction of two series compensation stations and communication regeneration stations approximately every 55 miles; rebuilding two 345-kV AC transmission lines between the Clover and Mona Substations totaling approximately 9 miles; the rerouting the Mona to Huntington 345-kV AC transmission line through the Clover Substation; and the relocation of a 2-mile section of the Bears Ears to Bonanza Flats 345-kV AC transmission line. A full description of the Project can be found in the Bureau's Biological Assessment (BA) and is hereby incorporated by reference.

This correspondence has two parts: (1) informal consultation including concurrence with "not likely to adversely affect" determinations; and (2) BO for adverse effects to listed species and designated critical habitat in the Colorado and Platte River Basins associated with depletions and other Project activities, and for adverse effects to the Uinta basin hookless cactus. The informal and formal consultations contained in this memo were prepared in accordance with section 7 of the ESA. Concurrence with the "not likely to adversely affect" determination and the BO are based on the following: (1) the Service's review of the proposed action as described in the Bureau's July 20, 2015, BA; (2) the information contained in the Bureau's August 28, 2015, electronic correspondence; (3) the information contained in the Bureau's September 11, 2015, memo, as amended; and (4) the anticipated effects of the action on listed species. Through electronic correspondence, the Bureau responded on August 28, 2015, to comments provided by the Service's Utah and Wyoming Field Offices on August 13 and 14. The Bureau's September 11, 2015, memo consisted of a "Response to U.S. Fish and Wildlife Service questions and revisions to the final Biological Assessment for the Energy Gateway South Transmission Project" (hereafter, BA revision), which was subsequently updated by the Bureau in electronic correspondence submitted January 11, 2016.

In a memo dated July 15, 2015 (with attached BA dated July 20), received by the Service on July 20, the Bureau requests formal consultation on the determination under section 7 of the ESA that the proposed Project is likely to adversely affect the endangered bonytail (*Gila elegans*) and its designated critical habitat, Colorado pikeminnow (*Ptychocheilus lucius*) and its designated critical habitat, humpback chub (*G. cypha*) and its designated critical habitat, razorback sucker (*Xyrauchen texanus*) and its designated critical habitat, whooping crane (*Grus americana*) and its designated critical habitat, the least tern (*Sterna [Sternula] antillarum*), pallid sturgeon (*Scaphirhynchus albus*), the threatened Western prairie fringed orchid (*Platanthera praeclara*), the piping plover (*Charadrius melodius*), and the Uinta Basin hookless cactus (*Sclerocactus wetlandicus*). The complete administrative record of all documents and correspondence concerning this consultation is on file in the Wyoming Ecological Services Field Office.

The Bureau determined that the Project may affect but is not likely to adversely affect the endangered June sucker (*Chasmistes liorus*), gray wolf (*Canis lupus*) in Colorado and Utah, clay phacelia (*Phacelia argillacea*), and shrubby reed-mustard (*Schoenocrambe suffrutescens*), and the threatened Mexican spotted owl (*Strix occidentalis lucida*), western distinct population segment of the yellow-billed cuckoo (*Coccyzus americanus*), Canada lynx (*Lynx canadensis*), clay reed-mustard (*Schoenocrambe argillacea*), deseret milkvetch (*Astragalus desereticus*), and Ute ladies'-tresses (*Spiranthes diluvialis*). The Bureau also determined that the Project is not likely to jeopardize the experimental/non-essential populations of gray wolf in Wyoming or the experimental/non-essential populations of the black-footed ferret (*Mustela nigripes*). Based on information included in the final BA, we concur that this Project may affect but is not likely to adversely affect these listed species and is not likely to jeopardize the experimental/non-essential populations of gray wolves or black-footed ferrets.

The Bureau determined that the Project will have no effect on endangered populations of the black-footed ferret and that seven species under the Service's jurisdiction do not occur in the action area of the proposed Project: the endangered Barneby ridgecress (*Lepidium barnebyanumi*) and blowout penstemon (*Penstemon haydenii*), and the threatened Utah prairie

dog (*Cynomys parvidens*), Dudley Bluffs bladderpod (*Lesquerella congesta*), Dudley Bluffs twinpod (*Physaria obcordata*), Heliotrope milkvetch (*Astragalus montii*), and Pariette cactus (*Sclerocactus brevispinus*). The ESA does not require the Service to concur with "no effect" determinations; however, we appreciate receiving the information used to support your conclusion. Additionally, the Bureau included potential effects of the Project on greater sage-grouse due to the species' status as a candidate at the time of submittal of the final BA and the BA revision, though did not request to conference on this species. As of October 2, 2015, the greater sage-grouse is no longer a candidate species and is determined to not warrant protection under the ESA at this time. The Service acknowledges the Bureau has made these determinations.

CONSULTATION HISTORY

The Service and the Bureau (including the Bureau's third-party contractor, Environmental Planning Group, LLC (EPG)) had numerous communications and coordination in the development of the final BA. An overview of consultation history associated with the proposed Project is provided below; a full consultation history is available in the Wyoming Ecological Services Field Office.

July 23, 27, and 30, 2009	Bureau submitted correspondence to the Service initiating informal consultation on the Project
Early 2010	Bureau established the Biological Resources Task Group for monthly coordination meetings
Early 2011	Bureau, Service, USFS, BIA, and USACE entered into Consultation Agreement. Utah Reclamation Mitigation and Conservation Commission and National Park Service entered agreement in 2013
March 3, 2014	Bureau, Service, and cooperating agencies participated in a BA kick-off meeting
December 2014	Bureau and Service agreed upon species to be addressed in the BA
January 5, 2015	Bureau submitted draft BA to Service and cooperating agencies
February 6, 2015	Service submitted comments on draft BA
July 20, 2015	Bureau submitted final BA to Service initiating formal consultation on the Project. Bureau's memo was dated July 15, 2015, and BA was dated July 20, 2015
July and August 2015	Service submitted questions and requests for clarification on the final BA to the Bureau
August 5 and 19, 2015	Bureau and Service participated in conference calls to discuss the final BA and revisions
September 11, 2015	Bureau submitted a response to the Service's questions and suggested revisions to the final BA for the Project; the BA revision
September 21, 2015	Service accepted final BA and revisions and commenced writing of the BO and concurrence memo
November 13, 2015	Service submitted draft BO for Bureau and cooperating agency review
December 7, 2015	Bureau submitted comments and revisions on draft BO to Service

January 11, 2016	Bureau submitted revised Attachment A, Conservation Measures
January 15, 2016	Service submitted final BO and concluded formal consultation

Informal Consultation for the
Energy Gateway South Transmission Line Project

June sucker
The Bureau determined that the Project may affect but is not likely to adversely affect the June sucker in part because the transmission line does not cross or is not located adjacent to any waters currently occupied by the species. Where Project activity may affect water quality in the Jordan River basin, Rocky Mountain Power will implement conservation measures identified in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. The Bureau also determined that the depletion of approximately 31 acre-feet of water from the Jordan River basin over a multi-year period will represent a negligible, immeasurable effect to the species. Consequently, the Service concurs that the Project as proposed may affect, but is not likely to adversely affect the June sucker.

Endangered population of Gray wolf
The Bureau determined that the Project may affect but is not likely to adversely affect the endangered population of gray wolf in Colorado and Utah, because it is unlikely that wolves may disperse through the Project area. No packs are known to reside near the Project area, and individuals dispersing from the existing population in the Greater Yellowstone area are likely to follow pathways that minimize human interaction. The agency-preferred route does cross intermountain valleys that may be used by dispersing wolves. However, general Project-wide conservation measures will minimize ground disturbance and vegetation clearing, which will minimize avoidance of the right-of-way by any wolves that might disperse through the Project area. Therefore, the Service concurs that the Project may affect but is not likely to adversely affect the endangered population of gray wolf in Colorado and Utah.

Nonessential, Experimental Population of Gray wolf
The Bureau determined that the Project will not jeopardize the nonessential, experimental populations of the gray wolf in Wyoming. The Project will be located outside of the existing population in the Greater Yellowstone area, and therefore few, if any, dispersing wolves will utilize the Project area. Therefore, the Service concurs that the Project may affect, but is not likely to jeopardize the continued existence of the nonessential, experimental population of gray wolves.

Clay phacelia
The Bureau determined that the Project may affect but is not likely to adversely affect the clay phacelia, because Rocky Mountain Power has committed to avoid all occupied sites inside and outside the right-of-way by at least 650 feet and minimize Project activity within suitable habitat. Additional commitments to avoid and minimize direct and indirect adverse effects to the species may be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. Consequently, the Service concurs that the Project as proposed may affect but is not likely to adversely affect the clay phacelia.

Shrubby reed-mustard
Potential and occupied mapped habitat occurs in proximity to the Project. The Bureau determined that the Project may affect but is not likely to adversely affect the shrubby reed-mustard because, even though potential habitat occurs within 0.4 mile and the boundary of the Badland Cliffs population occurs within 0.7 mile of the Project, the transmission line does not cross known occupied or suitable habitat for the species. Regardless, Rocky Mountain Power has committed to avoid all Project related surface disturbance within at least 300 feet of the species and occupied habitat. Project activity will be minimized within suitable habitat. Additional commitments to avoid and minimize direct and indirect adverse effects to the species may be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. Consequently, the Service concurs that the Project as proposed may affect but is not likely to adversely affect the shrubby reed-mustard.

Mexican spotted owl
The Bureau determined that the Project may affect but is not likely to adversely affect the Mexican spotted owl because the species is not anticipated to occur near the Project area in Colorado or Wyoming and because no individuals have been detected in the Project area or adjacent surveyed habitat during surveys conducted by the Bureau in Utah. Where the transmission line crosses within 0.5 mile of suitable Mexican spotted owl habitat in Utah, Rocky Mountain Power will conduct species surveys for 2 years prior to construction activities. Permanent structures will not be sited within 0.5 mile of suitable habitat unless species surveys demonstrate the habitat is unoccupied. A complete list of conservation measures for Mexican spotted owl may be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. The Service concurs that the Project as proposed may affect but is not likely to adversely affect the Mexican spotted owl.

Yellow-billed cuckoo, Western distinct population segment
The Bureau determined that the Project may affect but is not likely to adversely affect the yellow-billed cuckoo (western distinct population segment) because the implementation of conservation measures will minimize potential effects to an insignificant or discountable level. These conservation measures include, but are not limited to, conducting habitat and breeding surveys within 0.5-mile of construction activities, avoiding siting structures within field-verified suitable habitat, minimizing vegetation clearing and pruning within field-verified suitable nesting habitat, marking the line to increase visibility and reduce collisions within field-verified suitable habitat, and avoidance of aerial and broadcast herbicide treatments within 0.5-mile of field-verified suitable nesting habitat. See Attachment A (dated January 11, 2016) of the Bureau's BA revision and the conservation measures attached to this consultation for a complete list of conservation measures that will be implemented for the Yellow-billed cuckoo. The Project will not cross proposed critical habitat for this species. Based on the implementation of these conservation measures, the Service concurs that the Project may affect but is not likely to adversely affect the western distinct population segment of the yellow-billed cuckoo.

Canada Lynx
The Bureau determined that the Project may affect but is not likely to adversely affect the Canada lynx because the transmission line does not cross areas known or likely to be occupied by resident Canada lynx. Dispersing Canada lynx could use intermountain valleys crossed by

the transmission line; however, it is anticipated that lynx from source populations in the Greater Yellowstone area or Colorado would follow pathways outside the Project area including the Wind River Range, Ferris Mountains, the Snowy Range in Wyoming, or the Wasatch and Uinta Mountains in Utah. Consequently, no conservation measures were proposed. The Service concurs that the Project as proposed may affect but is not likely to adversely affect the Canada lynx.

Clay reed-mustard
The Bureau determined that the Project may affect but is not likely to adversely affect the clay reed-mustard because Rocky Mountain Power has committed to avoid all Project related surface disturbance within at least 300 feet of the species and occupied sites, and minimize Project activity within suitable habitat. Additional commitments to avoid and minimize direct and indirect adverse effects to the species may be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. Consequently, the Service concurs that the Project as proposed may affect but is not likely to adversely affect the clay reed-mustard.

Deseret milkvetch
The Bureau determined that the Project may affect but is not likely to adversely affect the Deseret milkvetch because Rocky Mountain Power has committed to avoid activities by a 300-foot buffer from the species' occupied habitat. Additional commitments to avoid and minimize direct and indirect adverse effects to the species may be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. Consequently, the Service concurs that the Project as proposed may affect but is not likely to adversely affect the Deseret milkvetch.

Ute Ladies'-tresses
The Bureau determined that the Project may affect but is not likely to adversely affect the Ute ladies'-tresses orchid because the implementation of conservation measures will minimize potential effects to an insignificant or discountable level. Conservation measures for Ute ladies'-tresses can be found in Attachment A (dated January 11, 2016) of the Bureau's BA revision and attached to this consultation. These include, but are not limited to conducting field habitat assessments and surveys for potential habitat for the species, avoiding geotechnical investigations and construction activities within 300 feet of occupied habitat, and avoiding aerial and broadcast herbicide treatments within 2,500 feet of suitable or occupied habitat for this species. Therefore, the Service concurs that the Project may affect but is not likely to adversely affect the Ute ladies'-tresses.

Nonessential, Experimental Population of Black-footed ferret
The Bureau determined that that Project is not likely to jeopardize the nonessential, experimental populations of the black-footed ferret because Project conservation measures will avoid and minimize potential impacts to any populations. These include, but are not limited to, limiting vehicle activities to daylight hours in occupied habitat, and conducting disruptive activities within 0.5-mile of prairie dog colonies in active black-footed ferret reintroduction management areas outside of the reproductive period (March 1 through July 15). In active black-footed ferret reintroduction management areas, the transmission line will also be located as close as possible to existing and other planned high-voltage transmission lines. A full list of conservation

measures specific to the nonessential, experimental populations of the black-footed ferret can be found in Attachment A of (dated January 11, 2016) the Bureau's BA revision and attached to this consultation. Therefore, the Service concurs that the Project may affect but is not likely to jeopardize the experimental, nonessential population of black-footed ferret.

Greater sage-grouse

The Bureau analyzed potential effects of the Project on the greater sage-grouse, which was a Candidate species at the time the BA and its amendment were written. On October 2, 2015, the Service announced that the greater sage-grouse (*Centrocercus urophasianus*) does not warrant listing under the ESA (80 FR 59858). Formal conservation commitments made by federal, state, and private landowners to protect the greater sage-grouse and its habitat were an important component of the Service's finding to not list the greater sage-grouse. Therefore, we anticipate that the conservation measures committed to for the Project, both through the ongoing National Environmental Policy Act (NEPA) processes and as identified via the Conservations Objective Team Report/Mitigation Framework Checklist consistency analyses, will help this Project to achieve a net conservation benefit for the greater sage-grouse, and will help to preclude the need to list the species in the future.

The Service appreciates the Bureau's continued interest in the conservation of threatened and endangered species. If you have questions regarding species addressed in this consultation package or the BO, please contact the following Service staff: **Wyoming** – Julie Reeves of our Wyoming Field Office (307) 772-2374, extension 232; **Colorado** – Creed Clayton of our Grand Junction Field Office (970) 628-7187; and **Utah** – Amy Defreese of our Utah Field Office (801) 975-3330, extension 128.

Attachments:

1-Biological Opinion for the Energy Gateway South Transmission Line Project
2-Conservation Measures for the Energy Gateway South Transmission Line Project

cc: BLM, Energy Gateway South Project Manager, Cheyenne, WY (T. Gertsch) (tgertsch@blm.gov)
BLM, Endangered Species Program Lead, Cheyenne, WY (C. Keefe) (ckeefe@blm.gov)
USFS, Energy Gateway South Project Manager, Cedar City, UT (K. Call) (ckcall@fs.fed.us)
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USACE, Senior Regulatory Project Manager, Saint George, UT (P. McQueary) (Patricia.L.McQueary@usace.army.mil)
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BIOLOGICAL OPINION FOR THE ENERGY GATEWAY SOUTH TRANSMISSION LINE PROJECT

06E13000-2014-F-0075b

U.S. FISH AND WILDLIFE SERVICE
WYOMING ECOLOGICAL SERVICES FIELD OFFICE
CHEYENNE, WYOMING

January 15, 2016

Contents

Description of the proposed action

This consultation is on the effects of the proposed Bureau of Land Management (Bureau) decision to permit the Energy Gateway South Transmission Line Right-of-Way (ROW) Project (Project). A detailed description of the Project (i.e., proposed action or agency-preferred alternative) and the action area can be found in the Bureau's July 20, 2015, biological assessment (BA). The Project includes the construction, operation, and maintenance of approximately 429 miles of new 500- kV single-circuit alternating current transmission line from the Aeolus Substation near Medicine Bow in Carbon County, Wyoming to the Clover Substation near Mona in Juab County, Utah; construction of two series compensation stations and communication regeneration stations approximately every 55 miles; rebuilding two 345-kVtransmission lines between the Clover and Mona Substations totaling approximately 9 miles; rerouting the Mona to Huntington 345-kV transmission line through the Clover Substation; and relocating a 2-mile section of the Bears Ears to Bonanza Flats 345-kV transmission line. The Project also includes resource surveys, geotechnical investigation, vegetation clearing, and construction of access roads as well as reclamation of temporarily disturbed sites. The design of the transmission line includes guyed single-circuit tangent structures, self-supporting steel-lattice single-circuit tangent and angle structures, and tubular steel H-frame single-circuit structures. Table 1-2 in the BA describes individual types of Project activities, their general locations, their components, their stressors, and the frequency, duration and intensity of those activities, and is incorporated here by reference.

The action area for the Project consists of the geographic area in which changes to the physical, chemical, and biotic environment can be caused directly or indirectly by the Project. For this Project, the action area includes an area encompassing one mile on either side of the agency-preferred alternative's centerline, thus forming a two-mile corridor. The analysis area for individual species varies from this two-mile corridor centered on the agency-preferred alternative to include all potential direct and indirect impacts on a species, based on the species' distribution.

The Project proponents will use water from both the Colorado River and Platte River Basins. Consultation is not required if the water is obtained from sources with existing consultations (e.g., municipal); however, the Project proponents are currently unable to identify all of the future withdrawal locations and the precise amounts of water to be used from each location. If all water used for this Project is from withdrawals that have previously consulted, then there will be no new effect from the water being used for this Project. For the Colorado River Basin, it is possible that some potential sources may already be addressed by existing consultations (e.g. some municipal systems); however, for purposes of this consultation, we assume all water used will be new depletions as the sources are unknown. Therefore, the action includes the potential consumptive use from the Colorado River system of up to 181.7 acre-feet of water during the three-year construction timeframe for the Project, which results in an average annual depletion of 60.6 acre-feet per year. For the Platte River Basin, the proponents intend to source all water used in construction of the Project from previously allocated sources covered under previous section 7 consultation or water that is not hydrologically connected to the Platte River system, and therefore water use in the Platte River Basin does not require section 7 consultation. However, in

the event that this does not occur, the Bureau has requested consultation on depletions from the Platte River Basin. The action includes the consumptive use from the Platte River Basin system of up to 40.7 acre-feet of water during the three-year construction period for the Project, which results in an average annual depletion of approximately 13.6 acre-feet per year. The BOs for water depletions are based on templates that tier to existing programmatic biological opinions for the Colorado River and Platte River.

In addition to water depletions, the Project could also affect the Colorado River fish species and their designated critical habitat by physically impacting critical habitat. The Project will span designated critical habitat and avoid all ground disturbance in all locations except for the construction of a single transmission line structure within the critical habitat for the Colorado pikeminnow along the north bank of the Yampa River, totaling 1.4 acres of temporary disturbance and 0.1 acre of permanent structure foundation. Critical habitat for Colorado pikeminnow is crossed in three locations by the Project; for the razorback sucker in one location; and occurs approximately 22 river miles downstream of Project activity for the bonytail and humpback chub.

Colorado River Fish Species

I. Background

The four federally endangered fish species of the upper Colorado River Basin include the endangered bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*). A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative to avoid jeopardy to the endangered fish by depletions from the Upper Colorado River.

In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (Plan), which identifies actions currently believed to be required to recover the endangered fish in the most expeditious manner in the Upper Colorado River Basin.

II. Colorado River Depletions

A part of the Recovery Program was the requirement that if a Project was going to result in a depletion, a depletion fee would be paid to help support the Recovery Program. On July 5, 1994, the Service issued a biological opinion determining that the fee for depletions of 100 acre-feet or less would no longer be required. This was based on the premise that the Recovery Program has made sufficient progress to be considered the reasonable and prudent alternative avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat by depletions of 100 acre-feet or less. Therefore, **the depletion fee for**

this Project is waived.

We concur that the proposed Project may affect and is likely to adversely affect the four federally endangered fishes of the Upper Colorado River Basin and their designated critical habitat due to the associated 60.6 acre-feet average annual water depletion over the three-year construction period for the Project. Permits or other documents authorizing specific projects, which result in depletions, should state that the Bureau retains discretionary authority over each project for the purpose of endangered species consultation. If the Recovery Program is unable to implement the Plan in a timely manner, reinitiation of section 7 consultation may be required so that a new reasonable and prudent alternative can be developed by the Service.

III. Critical Habitat for Colorado River Fish Species

The Project may additionally affect listed fish species and their designated critical habitat within the Colorado River through the contribution of sediment and degradation of water quality caused by ground disturbance from vehicles and heavy equipment during preconstruction, construction, operation, and maintenance activities. The Project will cross designated critical habitat occurring in the Yampa River (Moffat County, Colorado), White River (Uintah County, Utah), and the Green River (Uintah County, Utah). The implementation of conservation measures within and near all critical habitats will minimize potential impacts of the Project. These measures include not withdrawing surface water from the Green, White, and Yampa Rivers and their tributaries to avoid entrainment of fish; limiting vegetation removal within designated critical habitat to protect riparian function; and avoiding aerial and broadcast herbicide treatments within 2,500 feet of designated critical habitat.

The transmission line will completely span the 100-year floodplain where it crosses the White and Green Rivers; no surface disturbance, staging areas, or permanent structures will be placed within endangered fish critical habitat along these rivers. One transmission tower will be placed within Colorado pikeminnow critical habitat in the 100-year floodplain of the Yampa River. Additional conservation measures will apply at this location to minimize Project impacts, including: no permanent access roads will be constructed in the 100-year floodplain, any grading activities will be conducted in a way that will avoid altering seasonal flows, and all temporary disturbance in the floodplain will be promptly stabilized and reclaimed. A complete list of the conservation measures which will be implemented for this Project are contained in Attachment A of the Bureau's BA revision, are attached to this consultation, and are on file in the Wyoming Ecological Service's Office of the U.S. Fish and Wildlife Service (Service). Therefore, due to the implementation of additional conservation measures at this site, which will reduce the number of life stages of fish and types of potentially affected habitats, we do not anticipate that the effects of tower placement and loss of 0.1 acre of floodplain habitat will adversely affect the Yampa River critical habitat unit designated for the Colorado pikeminnow.

Platte River Species

The federally listed species within the Platte River Basin include the whooping crane (*Grus americana*) and its critical habitat, interior least tern (*Sterna [Sternula] antillarum*), northern Great Plains population of the piping plover (*Charadrius melodus*), pallid sturgeon (*Scaphirhynchus albus*), and the western prairie fringed orchid (*Platanthera praeclara*).

I. Platte River Depletions

In accordance with the streamlined section 7 consultation process under the Platte River Recovery Implementation Program (PRRIP), the completion of a Platte River Recovery Agreement (Agreement) with the State of Wyoming may be necessary for this Project prior to preparing a biological opinion. The Appendix D of the BA contained a letter from the Wyoming State Engineer's Office dated June 9, 2015, to Tamara Gertsch, Bureau Project Manager for the Project, indicating the Project is an existing depletion and the Project does not require an Agreement to be covered under the PRRIP. Therefore, we are able to proceed with the review of the BA and complete this BO.

We understand that sources for the water to be used out of the North Platte River basin have not been determined. The State Engineer's Office stated in the June 9, 2015 letter, that once the source of water through the temporary water use agreements and/or non-hydrologically connected groundwater wells is identified, mitigation will be determined unnecessary as there will be no new depletions of water within the North Platte River basin associated with the Project.

II. Background

On June 16, 2006, the Service issued a programmatic biological opinion (PBO) for the PRRIP and water-related activities[1] affecting flow volume and timing in the central and lower reaches of the Platte River in Nebraska. The action area for the PBO included the Platte River basin upstream of the confluence with the Loup River in Nebraska and the mainstem of the Platte River downstream of the Loup River confluence. The federal action addressed by the PBO included the following:

1) Funding and implementation of the PRRIP for 13 years, the anticipated first stage of the PRRIP; and

[1] The term "water-related activities" means activities and aspects of activities that (1) occur in the Platte River basin upstream of the confluence of the Loup River with the Platte River; and (2) may affect Platte River flow quantity or timing, including, but not limited to, water diversion, storage and use activities, and land use activities. Changes in temperature and sediment transport will be considered impacts of a "water related activity" to the extent that such changes are caused by activities affecting flow quantity or timing. Impacts of "water related activities" do not include those components of land use activities or discharges of pollutants that do not affect flow quantity or timing.

2) Continued operation of existing and certain new water-related activities[2] including, but not limited to, Reclamation and Service Projects that are (or may become) dependent on the PRRIP for ESA compliance during the first 13-year stage of the PRRIP for their effects on the target species[3], whooping crane critical habitat, and other federally listed species[4] that rely on central and lower Platte River habitats.

The PBO established a two-tiered consultation process for future federal actions on existing and new water-related activities subject to section 7(a)(2) of the ESA, with issuance of the PBO being Tier 1 and all subsequent site-specific Project analyses constituting Tier 2 consultations covered by the PBO. Under this tiered consultation process, the Service will produce tiered biological opinions when it is determined that future federal actions are "likely to adversely affect" federally listed species and/or designated critical habitat in the PRRIP action area and the Project is covered by the PBO. If necessary, the biological opinions will also consider potential effects to other listed species and critical habitat affected by the federal action that were not within the scope of the Tier 1 PBO (e.g., direct or indirect effects to listed species occurring outside of the PRRIP action area).

Although the water depletive effects of this federal action to central and lower Platte River species have been addressed in the PBO, when "no effect", or "may affect, but is not likely to adversely affect" determinations are made on a site-specific basis for the target species in Nebraska, the Service will review these determinations and provide written concurrence where appropriate. Upon receipt of written concurrence, section 7(a)(2) consultation will be considered completed for those federal actions.

Water-related activities requiring federal approval will be reviewed by the Service to determine if (1) those activities comply with the definition of existing water-related activities and/or (2) proposed new water-related activities are covered by the applicable state or the federal depletions plan. The Service has determined that the Project meets the above criteria and, therefore, this Tier 2 biological opinion regarding the effects of the Project on the target species, whooping crane critical habitat, or western prairie fringed orchid in the central and lower Platte River can tier from the PBO.

III. Consultation History

[2] "Existing water related activities" include surface water or hydrologically connected groundwater activities implemented on or before July 1, 1997. "New water-related activities" include new surface water or hydrologically connected groundwater activities including both new projects and expansion of existing projects, both those subject to and not subject to section 7(a)(2) of the ESA, which may affect the quantity or timing of water reaching the associated habitats and which are implemented after July 1, 1997.

[3] The "target species" are the endangered whooping crane (*Grus americana*), the endangered interior least tern (*Sternula antillarum*), the endangered pallid sturgeon (*Scaphirynchus albus*),and the threatened northern Great Plains population of the piping plover (*Charadrius melodus*).

[4] Other listed species present in the central and lower Platte River include the western prairie fringed orchid (*Platanthera praeclara*), the American burying beetle (*Nicrophorus americanus*), and the Eskimo curlew (*Numenius borealis*). The bald eagle (*Haliaeetus leucocephalus*) was listed as threatened when the PBO was written.

Table II-1 of the PBO (pages 21-23) contains a list of species and critical habitat in the action area, their status, and the Service's determination of the effects of the federal action analyzed in the PBO.

The Service determined in the Tier 1 PBO that the federal action, including the continued operation of existing and certain new water-related activities, may adversely affect, but would not likely jeopardize the continued existence of the federally endangered interior population of the least tern, whooping crane, and pallid sturgeon, or the federally threatened northern Great Plains population of the piping plover, western prairie fringed orchid, and bald eagle in the central and lower Platte River. Furthermore, the Service determined that the federal action, including the continued operation of existing and certain new water-related activities, was not likely to destroy or adversely modify designated critical habitat for the whooping crane. The bald eagle was subsequently removed from the federal endangered species list on August 8, 2007. Bald eagles continue to be protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. For more information on bald eagles, see the Service's webpage at: http://www.fws.gov/midwest/eagle/recovery/biologue.html.

The effects of the continued operation of existing and certain new water-related activities on the remaining species and critical habitats listed in Table II-1 of the PBO were beyond the scope of the PBO and were not considered.

The Service has reviewed the information contained in the BA submitted by the Bureau on July 20, 2015, as amended, including the letter from the State Engineer's Office in Appendix D. We concur with the determinations of "likely to adversely affect" for the endangered whooping crane and its designated critical habitat, interior least tern, and pallid sturgeon, and the threatened northern Great Plains population of the piping plover and threatened western prairie fringed orchid in the central and lower Platte River in Nebraska.

IV. Scope of the Tier 2 Biological Opinion

The Project is a component of "the continued operation of existing and certain new water-related activities" needing a federal action evaluated in the Tier 1 PBO. Flow-related effects of the federal action are consistent with the scope and the determination of effects in the PBO. Because the applicants have elected to participate in the PRRIP, ESA compliance for flow-related effects to federally listed endangered and threatened species and designated critical habitat from the Project is provided to the extent described in the Tier 1 PBO.

This BO applies to the Project's effects to listed endangered and threatened species and designated critical habitat as described in the PBO for the first thirteen years of the PRRIP (i.e., the anticipated duration of the first PRRIP increment).

V. Description of the Federal Action

A detailed description of the Project can be found in the BA. The applicant has stated that they will require the consumptive use from the Platte River Basin system of up to 40.7 acre-feet of

water during the three-year construction period for the Project, which results in approximately 13.6 acre-feet per year. The source of the water to be used for the Project has yet to be determined.

VI. Status of the Species

Species descriptions, life histories, population dynamics, status and distributions, are fully described in the PBO on pages 76-156 for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid, and are hereby incorporated by reference. On August 8, 2007, the bald eagle was removed from the federal endangered species list. Climate change is not explicitly identified in the Tier 1 PBO as a potential threat, except for whooping crane.

The terms "climate" and "climate change" are defined by the Intergovernmental Panel on Climate Change (IPCC). "Climate" refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007, p. 78). The term "climate change" thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8-14, 18-19).

Changes in temperature and/or precipitation patterns will influence the status of the Platte River ecosystem. These changes may contribute to threats that have already been identified and discussed for the interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid in the Tier I PBO.

VII. Environmental Baseline

The Environmental Baseline sections for the Platte River and for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid, as well as whooping crane critical habitat are described on pages 157 to 219 of the Tier 1 PBO, and are hereby incorporated by reference. The Tier 1 PBO concluded that although climate change has been identified as a contributor to the baseline, human activities are the biggest influence on the baseline. For the duration of this consultation, 13 years, human activities are expected to continue to be the major influence on the functionality of the action area for listed species and critical habitat. Since issuance of the Tier 1 PBO, there have been no substantial changes in the status of the target species or designated critical habitat other than the bald eagle delisting previously mentioned.

VIII. Effects of the Action

The Tier 1 PBO did not address climate change in the Effects of the Action section, as human activities (upstream storage, diversion, and distribution of the river's flow) are the most important drivers of change that adversely affect species habitat in the action area. Since issuance of the Tier 1 PBO, our analyses under the ESA include consideration of ongoing and projected changes in climate. In our analyses, we used our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change. Actions that are undertaken to improve the river ecology and habitats for listed species not only address human activities, but also contribute to listed species and whooping crane critical habitat resiliency to climate change.

Based on analysis of the information provided in the BA for the Project, the Service and the Wyoming State Engineer's Office concluded that the proposed federal action will result in an existing depletion to the Platte River system above the Loup River confluence. These depletions are associated with the Project. As an existing water-related activity, we have determined that the flow-related adverse effects of the Project are consistent with those evaluated in the Tier 1 PBO for the whooping crane, interior least tern, piping plover, pallid sturgeon, and western prairie fringed orchid.

IX. Cumulative Effects

Cumulative effects include the effects of future State, local, or private (non-federal) actions that are reasonably certain to occur in the action area considered in this BO. A non-federal action is "reasonably certain" to occur if the action requires the approval of a State or local resource or land-control agency, such agencies have approved the action, and the Project is ready to proceed. Other indicators which may also support such a "reasonably certain to occur" determination include whether: (a) the Project sponsors provide assurance that the action will proceed; (b) contracting has been initiated; (c) State or local planning agencies indicate that grant of authority for the action is imminent; or (d) where historic data have demonstrated an established trend, that trend may be forecast into the future as reasonably certain to occur. These indicators must show more than the possibility that the non-federal Project will occur; they must demonstrate with reasonable certainty that it will occur. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA and would be consulted on at a later time.

Cumulative effects are described on pages 194 to 300 of the Tier 1 PBO, and are hereby incorporated by reference. There have been no substantial changes in cumulative effects since the issuance of the PBO. Since the Tier 1 PBO was issued, there have been no substantial changes in the status of cumulative effects.

X. Conclusions

The Service concludes that the Project is consistent with the Tier 1 PBO for effects to listed species and critical habitat addressed in the Tier 1 PBO. After reviewing site-specific information, including: (1) the scope of the federal action, (2) the environmental baseline, (3) the status of the whooping crane, interior least tern, piping plover, pallid sturgeon, and western

prairie fringed orchid in the central and lower Platte River and their potential occurrence within the Project area, (4) the effects of the Project, and (5) any cumulative effects, it is the Service's opinion that the Project, as described, is not likely to jeopardize the continued existence of the federally endangered whooping crane, interior least tern, and pallid sturgeon, or the federally threatened northern Great Plains population of the piping plover, or western prairie fringed orchid. The federal action is also not likely to destroy or adversely modify designated critical habitat for the whooping crane.

XI. Incidental Take Statement

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct, and applies to individual members of a listed species. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

Sections 7(b)(4) and 7(o)(2) of the ESA do not apply to the incidental take of federally listed plant species (e.g., Deseret milkvetch, Ute ladies' tresses orchid, and western prairie fringed orchid). However, limited protection of listed plants from take is provided to the extent that ESA prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on non-federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law. Such laws vary from state to state.

The Department of the Interior, acting through the Service and Bureau of Reclamation, is implementing all pertinent Reasonable and Prudent Measures and implementing Terms and Conditions stipulated in the Tier 1 PBO Incidental Take Statement (pages 309-326 of the PBO), which will minimize the anticipated incidental take of federally listed species. In instances where the amount or extent of incidental take outlined in the Tier 1 PBO is exceeded or the amount or extent of incidental take for other listed species is exceeded, the specific PRRIP action(s) causing such take shall be subject to reinitiation expeditiously.

XII. Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to

minimize or avoid adverse effects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information. Conservation recommendations are provided in the PBO (pages 328-329) and are hereby incorporated by reference.

XIII. Closing Statement

Any person or entity undertaking a water-related activity that receives federal funding or a federal authorization and which relies on the PRRIP as a component of its ESA compliance in section 7 consultation must agree: (1) to the inclusion in its federal funding or authorization documents of reopening authority, including reopening authority to accommodate reinitiation upon the circumstances described in section IV.E. of the Program document, which addresses Program termination; and (2) to request appropriate amendments from the federal action agency as needed to conform its funding or authorization to any PRRIP adjustments negotiated among the three states and the Department of the Interior, including specifically new requirements, if any, at the end of the first PRRIP increment and any subsequent PRRIP increments. The Service believes that the PRRIP should not provide ESA compliance for any water-related activity for which the funding or authorization document does not conform to any PRRIP adjustments (Program Document, section VI).

Reinitiation of consultation over the Project will not be required at the end of the first 13-years of the PRRIP provided a subsequent Program increment or first increment Program extension is adopted pursuant to appropriate ESA and NEPA compliance procedures, and, for a subsequent increment, the effects of the Project are covered under a Tier 1 PBO for that increment addressing continued operation of previously consulted-on water-related activities. Requests for reinitiation or questions regarding reinitiation should be directed to the Service's Wyoming Field Office at the letterhead address above.

Uinta Basin Hookless Cactus

I. Description of the Proposed Project

The Project is described in detail in the Bureau's BA dated July 20, 2015, as amended, and is incorporated here by reference. A summary of the Project description is presented at the beginning of this BO.

II. Status of the Species

Regulatory Status and Taxonomy
Sclerocactus glaucus was listed as a threatened species in 1979 (44 FR 58870). However, based on more recent genetic studies (Porter et al. 2000), common garden experiments (Welsh et al. 2003), and morphological characteristics (Heil and Porter 2004), we currently recognize *S. glaucus* as three distinct species: *S. brevispinus* (Pariette cactus), *S. wetlandicus* (Uinta Basin hookless cactus), and *S. glaucus* (Colorado hookless cactus). These three species retain their threatened status (74 FR 47112, September 15, 2009). There is no critical habitat designated for

these species. This consultation focuses on impacts of the Project on Uinta Basin hookless cactus. In April 2010, the Service developed a recovery outline for Uinta Basin hookless cactus (USFWS 2010a).

Distribution and Life History

Uinta Basin hookless cactus occurs in Uintah County, Utah along the Green River, White River, and their tributaries. The species also occurs within Duchesne and Carbon Counties. Uinta Basin hookless cactus is generally found on coarse soils derived from cobble and gravel stream terrace deposits, or rocky surfaces on mesa slopes at 1,350 to 1,900 meters elevation (4,400 to 6,200 feet) (USFWS 1990; Heil and Porter 2004). Uinta Basin hookless cactus can be found growing with other common desert shrubland plants including shadscale, black sagebrush, and galleta grass. However, the habitat type for Uinta Basin hookless cactus has expanded with recent reports of individual cacti found in habitat that was previously considered unsuitable (multiple survey reports 2013-2015).

In 2013, consistent with our recovery outline for this species, we developed *Sclerocactus* core conservation areas (CCAs) to guide the protection of important population areas of high cactus density and maintain connectivity across the range of the species (USFWS 2013). *Sclerocactus* core conservation area 1 (CCA 1), core conservation area 2 (CCA 2), and the *Sclerocactus* habitat polygon were delineated based on pollinator travel distance and density of cactus populations (USFWS 2013, Tepedino 2010). The larger *Sclerocactus* habitat polygon encompasses CCA 1 and CCA 2 polygons and defines the area in which the Uinta basin hookless cactus, the Pariette cactus, and their potential habitat are likely to be located. The larger *Sclerocactus* habitat polygon is also separated into two adjoining polygons representing the Pariette cactus habitat polygon and the Uinta Basin hookless cactus polygon. While there is some overlap between the two species, the two habitat polygons identify a rough approximation of the species' boundaries. The CCA 1 polygons include the densest concentrations of cactus locations and the most restrictive management recommendations. The CCA 1 polygons were developed using a 400-meter buffer around plants to allow for pollinator travel. The CCA 2 polygons include less-dense cactus areas and less restrictive management recommendations, while still maintaining a minimum amount of undisturbed habitat to protect the species. The CCA 2 polygons were developed using a 1,000-meter buffer around plants.

The total area of the Uinta Basin hookless cactus habitat polygon is 421,665 acres, including approximately 26,933 acres of CCA 1 and 65,454 acres of CCA 2 habitat (USFWS 2013)[5]. The total known, documented population of Uinta Basin hookless cactus is 68,055; however, this is an underestimate because not all suitable habitat has been surveyed. The habitat and CCA polygons will be adjusted as more known locations are documented. Although Uinta Basin hookless cactus populations can be found outside of these habitat polygons, they tend to occur in greater numbers and at higher densities within the polygons. The potential and core habitat for

[5] The Uinta Basin hookless cactus habitat polygon was revised in 2013 based on available distribution information. Therefore, the polygon acreage in this biological opinion differs from that reported in previous BOs.

the Uinta Basin hookless cactus is spread across four land ownership types summarized below in Table 1.

The Uinta Basin hookless cactus is an outcrossing species, meaning they require pollen from the flower of a different plant to produce viable seed (Tepedino et al. 2010). Flowers typically open in mid-day and close late in the afternoon for three to five days (Tepedino et al. 2010). A broad assemblage of native, ground-nesting bees, mostly from the family Halictidae (Tepedino et al. 2010), pollinate the Uinta Basin hookless cactus. These bees can travel from 0.4 to 1 kilometer (km) between plants (Tepedino pers. Comm. 2010). Other insects, including ants and beetles, may also pollinate Uinta Basin hookless cactus (USFWS 1990), though it is predominately pollinated by ground-nesting bees (Tepedino et al. 2010). Limiting the amount of fragmentation and disturbance within the habitat of Uinta Basin hookless cactus is important to maintain adequate pollinator habitats and healthy cactus populations.

Table 1. Distribution of Uinta Basin hookless cactus habitat by landowner type.

Uinta Basin hookless cactus					
	State (Acres)	**Private**	**Tribal**	**BLM**	**Total (acres)**
Potential Habitat Polygon	45,233	12,655	109,534	25,4250	421,673
	11%	3%	26%	60%	
CCA 2	9,514	1,678	23,194	58,002	92,389
	10%	2%	25%	63%	
CCA 1	2,269	245	7,024	17,384	26,924
	8%	1%	26%	65%	

The life history and population dynamics of this species is poorly known, but they are thought to be long-lived perennials, usually flowering after three or four years. Preliminary demographic and population trend data for Uinta Basin hookless cactus show an observed decline in population size and growth rate from 2012 to 2014 (SWCA 2015). Population viability analysis also shows a negative population growth vital rate of 0.89 for Uinta Basin hookless cactus. Modeled data out to 10-years similarly show a decline both in population growth rate and population size (SWCA 2015). We recognize that these data cover a short period of time and that long-term data are required in order to fully understand the population trends. Information from this study will be updated as it becomes available. Additional information on the life history, population dynamics, status, and distribution are described in detail within the "Recovery Plan for the Uinta Basin hookless Cactus" (USFWS 1990d) and the more recent recovery outlines (USFWS 2010a).

Threats to the Species

Ongoing and proposed oil and gas development are the primary threats to the Uinta Basin hookless cactus from the combined impacts of road and well pad development, fugitive dust, erosion, isolation of populations due to habitat fragmentation, impacts to pollinators and seed dispersers, increased access by off-road vehicles and illegal collectors due to an expanded road

network, and pesticide and herbicide use (BLM 2008). The species is also sought by cacti and succulent collectors around the world (USFWS 2010 a).

Habitat loss associated with energy development is a major threat across the known range. There are 6,797 existing oil and gas well locations within the Uinta Basin hookless cactus habitat polygon. We used GIS analysis to calculate the amount of disturbance within the entire Uinta Basin hookless cactus habitat polygon, which includes CCA 1 and CCA2 areas, by estimating that there are 5 acres of disturbance associated with each well. For every additional well on a shared well pad, we estimate 0.25 acre of additional disturbance. Thus, we calculated that approximately 19,959 acres (4.6 percent) of the Uinta Basin hookless cactus habitat polygon are already disturbed by oil and gas development in May 2015. The level of disturbance for all CCA1 and CCA2 areas within the Uinta Basin hookless cactus habitat polygon is 5.3 percent (2,203 acres) and 5.6 percent (7,223 acres), respectively.

Habitat fragmentation is a primary direct threat to Uinta Basin hookless cactus. The primary sources of habitat fragmentation are the increased number of access roads, pipeline and other utility ROW, and long-term surface disturbance from well pads and associated facilities. The anthropogenic fragmentation of plant habitats can decrease species density (Mustajarvi *et al.* 2001) and result in isolated, smaller populations that are more prone to extinction. Decreased species density has the potential to adversely impact pollination and reproductive success of *Sclerocactus* species (Mustajarvi *et al.* 2001).

Surface disturbance due to energy development, roads vehicular traffic, off-road vehicle use, and livestock disturbance can lead to increased fugitive dust, particulates, erosion and storm water runoff that can impact the Uinta Basin hookless cactus. Construction activities, access roads, and vehicular traffic within and near occupied habitats increase fugitive dust and particulates. Dust accumulation is higher near roads, with fugitive dust depositing up to 984 feet from the source (Everett 1980). Dust accumulation may adversely impact photosynthesis, respiration, transpiration, water use efficiency, leaf conductance, growth rate, gas exchange, and growth (Eller 1977; Spatt and Miller 1981; Thompson et al. 1984; Farmer 1993; Sharifi et al. 1997; Trombulak and Frissell 2000; Hobbs 2001). Erosion and runoff from surface disturbing activities can result in plants being buried or directly removed. Erosion and runoff can be natural events, but are often worsened by human activities such as vegetation removal and alteration of stream courses, making these events more catastrophic. These augmented events can lead to greater damage to native ecosystems through additional scour and burial of soils and plants. Increases in dust, erosion, and storm water runoff interact cumulatively with other negative effects to further fragment and disturb Uinta Basin hookless cactus populations.

A majority of Uinta Basin hookless cactus potential habitat on Bureau land is leased for grazing. At least 28 grazing allotments overlap with Uinta Basin hookless cactus habitat polygon, with both cattle and sheep grazing annually or on deferred rotation, depending on the specific allotment.

Livestock grazing results in cactus damage and mortality when livestock trample, nick, cut, break individual cacti (USFWS 1990; Utah Natural Heritage Program 2006; BLM 2008; 72 FR

53215, September 18, 2007, USFWS 2010b, Brunson 2013, BLM 2015). Livestock can degrade Uinta Basin hookless cactus habitat by compacting the soil and reducing water filtration, removing biological soil crust, and removing native vegetation cover (Castellano 2007; Sharrow 2007). Such habitat degradation can reduce seedling recruitment and reproductive output, and stress individuals by reducing water availability (Kuske *et al.* 2012; Schwinning *et al.* 2008). Due to lack of monitoring, we do not always know the frequency or extent of impacts to the plants or suitable habitat from livestock. A Service review of all available research on livestock impacts to cacti concluded that if the current grazing practices continue without adjustments, the populations of five listed Utah cactus species will continue to decline to the point of precluding recovery (Spector 2013). Mortality rates are greater than recruitment rates for all species, including the Uinta Basin hookless cactus, and grazing pressure is ubiquitous and chronic.

Overgrazing is the continued heavy grazing by domestic livestock beyond the recovery capacity of forage plants (Vallentine 1990). Overgrazing can result in degradation of western ecosystem functions and structures (Fleischner 1994). Overgrazing can facilitate the establishment of invasive species like cheatgrass (Masters and Sheley 2001), which are difficult to eradicate and tend to outcompete native vegetation, including cacti. Invasive weeds (e.g., cheatgrass and halogeton) are prevalent on Bureau lands in the range of Uinta Basin hookless cactus and less so on tribal lands where grazing has been concentrated in areas outside of suitable cactus habitat (72 FR 53214, September 18, 2007).

Noxious and invasive plant species directly compete for resources and alter the habitat for native species such as *Sclerocactus,* making it more difficult for the species to survive and thrive. Noxious and invasive species are often present in the soil seed bank, and once an area is disturbed, these species can quickly establish. In addition, competition from noxious and invasive species can further reduce special status species' population size. Invasive plants spread more easily when other land uses such as livestock grazing are concentrated within the remaining interspaces between roads and wells. Seeds from invasive species are often carried by vehicles and spread by vehicle-caused air turbulence (Forman and Alexander 1998). The cumulative pressures of energy development and grazing can lead to more invasive plants in Uinta Basin hookless cactus habitat.

The spread of noxious and invasive plants may change species composition within native plant communities. This may lead to increased livestock grazing on native grasses and shrubs that act as "nurse" plants for immature cacti. Nurse plants create an environment that is more favorable for successful establishment of immature cacti by providing shade, moisture, and protection from trampling. Additionally, habitat alteration from invasive species can alter pollinator composition in the area, thereby possibly reducing the effectiveness of pollination within the native community. All of these connected actions reduce the ability of Uinta Basin hookless cactus to thrive within its native habitat.

Illegal collection of Uinta Basin hookless cactus historically was one of the primary threats to the conservation and recovery of this species (BLM 2008). The increased number of access roads from energy development within and near occupied habitats allows greater access to rare plant populations and potentially could increase illegal collection of the species.

III. Environmental Baseline

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as follows:

- The past and present impacts of all federal, state, or private actions and other human activities in the action area;
- The anticipated impacts of all proposed state or federal projects in the action area that have already undergone formal or early section 7 consultation; and
- The impact of state or private actions that are contemporaneous with the consultation process.

Status of the Species within the Action Area
As described above (see Status of the Species), available information indicates that Uinta Basin hookless cactus are declining range-wide, including portions of the action area (a one-mile buffer on either side of the Project centerline). The primary threat to the species in the action area is energy development. Approximately 43,008 acres (13 percent) of the Service-designated *Sclerocactus* habitat polygon is within the action area, along with approximately 7,198 known Uinta Basin hookless cactus individuals. Of this, 2,944 acres (7 percent) of all CCA 1 areas and 7,933 acres (9 percent) of all CCA 2 designated areas are within the action area.

We estimate that the surface disturbance within the White River CCA 1 is 11 percent and CCA 2 is 12 percent, which exceeds the Service-recommended 5 percent maximum disturbance level (USFWS 2013). Within the Middle Green unit we estimate the disturbance within CCA 1 at 2.5 percent and CCA 2 at 3.3 percent.

Factors Affecting the Species within the Action Area
Habitat loss associated with energy development is a major threat across the known range and within the action area. There are 6,797 existing oil and gas wells within the Uinta Basin hookless cactus habitat polygon. To assess their impact to the species, we used available GIS data (UDOGM 2015) and assumed a 5-acre per well disturbance. For every additional well on a shared well pad, we estimate 0.25 acre of additional disturbance. As of May 2015, we caclutated that approximately 19,959 acres (4.7 percent) of the entire Uinta Basin hookless cactus polygon (including CCA 1 and CCA 2) are already disturbed by oil and gas development. The 877 existing wells located within the action area represent approximately 4,385 acres (10 percent) of the total oil and gas-related disturbance currently present within the Uinta Basin hookless cactus habitat.

IV. Effects of the Action

The effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Direct effects are those direct or immediate effects of the project on

the species or its habitat. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. Because localized effects to a species have the potential to result in population level effects, our analysis included consideration of effects to species populations in entire conservation areas in which the Project action occurs. For purposes of this Project, the conservation areas included in the effects analysis are the *Sclerocactus* potential habitat polygon, the White River CCA 1 and CCA 2 units, and the Middle Green CCA 1 and CCA 2 units.

Uinta Basin hookless cactus individuals included in the effects analysis are likely to experience both direct and indirect impacts from the Project including dust deposition, increased traffic, weed dispersal, pollinator disturbance, degraded habitat, and habitat fragmentation.

Uinta Basin hookless cactus individuals within the effects analysis will be affected during all three phases of the Project, including the pre-construction, construction, and post-construction maintenance phases. The disturbance intensity of the Project phases will vary from low during pre-construction, moderate-to-high during construction, and moderate-to-low during post-construction maintenance (see Table 1-2 of the BA). Thus, the potential for direct loss of individuals is greater during the construction phase of the Project than during the pre- or post-construction phases.

Based on the estimate of 18 acres of surface disturbance per mile of transmission line, the Bureau estimates that a total of 614 acres of potential habitat, including 41 acres of CCA 1 habitat, 111 acres of CCA 2 habitat, and 462 acres of the *Sclerocactus* habitat polygon, will be lost due to construction of the transmission-line structures, access roads within the action area, and series compensation stations, as well as the stringing of the transmission line, staging areas, line tensioning areas, herbicide treatment, operation, and maintenance activities. Based on our own calculations, the proposed Project will add less than one-half of a percent of disturbance to the total estimated disturbance in each of the core conservation areas and in the potential habitat polygon (see Table 2 below).

Table 2. Existing and proposed development in core conservation areas that overlap with effects analysis area (disturbance acres presented here were calculated based on Service GIS data and vary slightly from those estimated by the Bureau in the BA).

Development and Surface Disturbance	White River (CCA1 + CCA2)	Middle Green (CCA1+CCA2)	SCWE Potential habitat polygon (excluding CCA1 and CCA2)
Number of existing wells (estimated)	1,770	178	3,489
Existing surface disturbance, percent (acres)	12.2% (3,214)	3.3% (528)	4.7% (15,295)
Additional surface disturbance from proposed action, percent (acres)	0.2% (50)	0.6% (110)	0.15% (462)
Estimated total surface disturbance (existing + proposed action)	12.4%	3.9%	4.9%

The area included in the analysis for indirect impacts includes the area of surface disturbance (Table 2) plus a 300-foot buffer from the edge of the surface disturbance. The total effects analysis area for direct and indirect effects is 2,479 acres. There are approximately 5,962 Uinta Basin hookless cactus individuals within the White River core conservation area, 6,231 individuals within the Middle Green core conservation area, and 11,134 individuals within the Uinta Basin hookless cactus potential habitat polygon (excluding core areas). Therefore, a total of 23,327 Uinta Basin hookless cactus individuals are located within the effects analysis area that may be directly or indirectly affected by the proposed Project action. These effects are listed in Table 3 below.

Within the effects analysis area, direct effects to Uinta Basin hookless cactus individuals are most likely to occur within the Project ROW. Our GIS data indicate that 285 individuals are located within the 250-foot wide ROW and will be directly impacted by the surface disturbing activities. These areas have not been completely surveyed and it is expected that as surveys are conducted, more plants will be located. In addition, there are always individual cacti in any population that are undetected by surveys, sometimes as many as half of the population (Reisor 2013). Therefore, we estimate that at least twice as many individuals (570 individuals) are likely to be present within the ROW and will likely be directly impacted by the surface disturbing activities.

Many of the stressors (see Table 1-2 of the BA, pages 13-15) from the three phases of the Project are the same and include increased dust production, weed introduction, soil disturbance, human presence, equipment and vehicle traffic, soil compaction, drilling and construction noise, hazardous materials, change in runoff patterns, increased public access to sensitive sites, and herbicide application. These stressors create the following negative impacts to Uinta Basin

hookless cactus individuals and habitat: reduced photosynthesis and reduced reproduction due to dust impacts, weed introduction and plant community changes, loss of or damage to individuals, loss or alteration of habitat, loss or alteration of pollinator habitat, habitat fragmentation, pollinator disturbance leading to reduced reproduction, and loss of existing transplant study and research data. Conservation measures have been developed to address each of these negative impacts (see BA section 4.5.5.3) and are summarized in Table 3 below. Direct loss of plants and the need to transplant individuals will be minimized by conservation measures 1-5, 7, 10, 15, and 16 (See Table 3). All conservation measures for this Project will be applied consistently throughout the action area, regardless of landownership type.

There are 18 existing Uinta Basin hookless cactus transplants, set up as mitigation for a previous energy project (Questar ML 104 Pipeline 24 Mile Extension, TAILS: 65411-2010-F-0149) present within 300 feet of the Project ROW. The previously transplanted individuals are located between 128 and 260 feet away from the edge of the proposed ROW. Construction of certain Project features may not be able to avoid these existing Uinta Basin hookless cactus transplants, and thus several years of research and data could potentially be lost if any study individuals need to be transplanted a second time. Transplanted individuals may also experience reduced reproduction or die as a direct result of transplanting.

Although the conservation measures described in the BA and the BA revision will minimize the impacts of the action to Uinta Basin hookless cactus, larger indirect, landscape-level changes such as increased habitat fragmentation and habitat loss, pollinator disturbance, changes in erosion and water runoff, and increased weed invasion cannot be entirely negated. These disturbances will continue to negatively impact the species throughout the action area. There will be permanent loss and fragmentation of habitat for cactus and pollinators where permanent structures are installed, and temporary loss and fragmentation of habitat for cactus and pollinators where short-term disturbance occurs during construction. Both permanent and short-term disturbances will reduce opportunities for the Uinta Basin hookless cactus to cross-pollinate, reproduce, and establish, and will provide a corridor for noxious weeds and livestock to disperse for a period of several years to decades.

Table 3. Summary of conservation measures and the type of impact to Uinta Basin hookless cactus that it addresses. See section 4.5.5.3 of the BA for additional details on each conservation measure.

Conservation Measures	Description	Dust impacts (reduced photosynthesis or reproduction)	Weeds or Plant community changes	Loss of or damage to individuals	Loss or alteration of habitat	Loss or alteration of pollinator habitat	Habitat fragmentation	Pollinator disturbance/ reduced reproduction	Loss of existing transplant study/data
1	Pre-construction surveys			X	X	X	X	X	
2	Avoidance of existing transplant sites			X	X	X	X	X	X
3	ROW avoidance of occupied habitat by 300 feet			X	X	X	X	X	
4	Minimizing impacts during geotechnical investigation			X	X	X	X	X	
5	Maximizing distance from cactus and minimizing the surface disturbance area			X	X	X	X	X	
6	Sedimentation and erosion control implementation	X		X					
7	Qualified, approved botanist on-site where construction is within 300 feet of occupied			X	X	X	X	X	

Conservation Measures	Description	Dust impacts (reduced photosynthesis or reproduction)	Weeds or Plant community changes	Loss of or damage to individuals	Loss or alteration of habitat	Loss or alteration of pollinator habitat	Habitat fragmentation	Pollinator disturbance/ reduced reproduction	Loss of existing transplant study/data
	habitat								
8	Dust abatement using only water will be applied within 300 feet of occupied habitat	X							
9	No surface disturbance will occur within the flowering period	X						X	
10	15 mile-per-hour speed limit for personnel within 300 feet of occupied habitat	X			X	X	X	X	
11	USFWS will be contacted if an unexpected damage or loss to cacti in CCA1 or CCA2 areas will occur			X					
12	Disturbed areas will be reclaimed using a FWS and BLM approved seed mix		X						
13	Invasive species monitoring and treatment will occur according		X						

Conservation Measures	Description	Dust impacts (reduced photosynthesis or reproduction)	Weeds or Plant community changes	Loss of or damage to individuals	Loss or alteration of habitat	Loss or alteration of pollinator habitat	Habitat fragmentation	Pollinator disturbance/ reduced reproduction	Loss of existing transplant study/data
	to BLM protocols								
14	If necessary, cactus transplant and monitoring will occur where direct impacts cannot be avoided, and will coordinate with the USFWS and BLM.			X					X
15	Contributions to the *Sclerocactus* mitigation Fund will be made where surface disturbance occurs within 300 feet of occupied habitat.			X	X	X	X	X	
16	Additional measures may be developed if needed to ensure compliance with the ESA.	X	X	X	X	X	X	X	X

V. Cumulative Effects

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered under this section because they require separate consultation pursuant to section 7 of the ESA.

Declines in the abundance or range of many special status species are attributable to various human activities on federal, state, and private lands, such as human population expansion and associated infrastructure development; energy development and associated infrastructure; construction and operation of dams along major waterways; water retention, diversion, or dewatering of springs, wetlands, or streams; recreation, including off-road vehicle activity; expansion of agricultural or grazing activities, including alteration or clearing of native habitats for domestic animals or crops; and introductions of non-native plant, wildlife, or fish or other aquatic species, which can alter native habitats or out-compete or prey upon native species. Many of these activities are expected to continue on state and private lands within the range of various federally protected wildlife, fish, and plant species, and could contribute to cumulative effects to the species within the action area. Species with small population sizes, endemic locations, or slow reproductive rates will generally be more susceptible to cumulative effects.

Non-federal activities have the potential to cumulatively affect Uinta Basin hookless cactus, as a significant portion of the species' range occurs on state, private, and tribal lands without federal mineral leases or federal surface rights (see Table 1 in Distribution section). Quantified data on the future extent of these activities are difficult to obtain, but we must assume, for the purposes of this assessment, that some level of these activities are reasonably certain to occur, particularly energy and mineral exploration, development, livestock grazing, stone collecting, off-highway vehicle use, and illegal cactus collecting. Where these future activities intersect Uinta Basin hookless cactus populations or habitats, they may cumulatively add to the existing and future impacts of activities authorized by federal agencies.

Of the total 570 Uinta Basin hookless cactus individuals within the Project ROW, approximately 454 individuals (79.6 percent) are located on state, private, and tribal lands within the action area. These 454 individuals represent less than 1 percent of the total estimated population of Uinta Basin hookless cactus throughout the species' range. This number is an underestimate of the number of individuals on non-federal lands, as surveys are not always required or conducted on private, state, and tribal lands. Uinta Basin hookless cactus individuals on non-federal lands will be negatively impacted by direct loss and disturbance, as well as landscape-scale factors (habitat fragmentation, increased dust, and so on) due to cumulative impacts in the action area.

VI. Conclusion

After reviewing the current status of the Uinta Basin hookless cactus; the environmental baseline for the action area; the effects of the proposed action; and the cumulative effects, it is our biological opinion that this Project, as described in this biological opinion, is not likely to jeopardize the continued existence of Uinta Basin hookless cactus. We base our conclusion on the following:

1. The proposed disturbance of 614 acres represents a 0.2 and 0.6 increase in the disturbance level for the White River and Middle Green conservation units, and a 0.15 percent increase in the disturbance level of the *Sclerocactus* potential habitat polygon (see Table 2). In addition, direct impacts to approximately 570 individual plants represents less than 1 percent of the current documented species population. Because of the small percentages of impacts, we conclude that the increase in disturbance and affected number of plants is not substantial.

2. The commitment to implement the applicant committed conservation measures for the Uinta Basin hookless cactus (see Table 3). In particular, the applicant committed conservation measures numbers 1 - 5, to avoid Uinta Basin hookless cactus to the maximum extent practicable, conservation measure number 9, to avoid construction during flowering, conservation measure number 6, to prevent sedimentation and erosion within cactus populations, and conservation measure number 14 to transplant and monitor any transplanted cacti will reduce direct impacts to Uinta Basin hookless cactus individuals. Additionally, the applicant committed conservation measures 8 - 10, to reduce the creation and dispersal of fugitive dust, conservation measure number 12 and 13, to control invasive species and revegetate the habitat with native species, which will minimize indirect impacts to Uinta Basin hookless cactus individuals.

3. That all conservation measures are applied consistently across the entire Project area, regardless of landownership type.

VII. Incidental Take Statement

Sections 7(b)(4) and 7(o)(2) of the ESA generally do not apply to listed plant species; therefore, we are not providing an incidental take statement in this biological opinion. However, limited protection of listed plants is provided to the extent that the ESA prohibits the removal and reduction to possession of federally listed endangered plants or the malicious damage of such plants on areas under federal jurisdiction, or the destruction of endangered plants on non-federal areas in violation of state law or regulation or in the course of any violation of a state criminal trespass law.

VIII. Reporting Requirements

Within 90 days of completion of the Project within the Uinta Basin hookless habitat, the acres of disturbance will be reported to the Bureau and our office. This report will be used to calculate the mitigation amount to be paid into the *Sclerocactus* Mitigation Fund account. The *Sclerocactus* Mitigation Fund was established with the National Fish and Wildlife Foundation to receive money for conservation actions such as dispersed development study, pollinator and genetics work, and enhanced reclamation study. Payment into the fund releases Project proponents from future monitoring obligations. Any cactus monitoring or transplant reports associated with the proposed actions must be submitted to our office and the Bureau by January 31 each year following the event.

IX. Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of an action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that all Uinta Basin hookless cactus individuals be avoided by a minimum of 300 feet in order to minimize impacts to the species.
2. We recommend that all surface disturbance within CCA 1 areas and within the White River CCA 2 area be avoided in order to prevent additional fragmentation to core areas that are key to the persistence of the species and are already heavily impacted by surface disturbance and fragmentation.
3. We recommend that research plots associated with previously transplanted cacti and the control plots are avoided in order to preserve the critical Uinta Basin hookless cactus research data associated with the Project.
4. We recommend that the transplanting of any Uinta Basin hookless cactus due to impacts from this Project are completely avoided in order to avoid negative direct impacts to the species, such as mortality.
5. There are 18 cacti located within the current ROW, and are between 128 and 260 feet away from the current Project centerline. We recommend that the centerline and ROW be adjusted to ensure that there is a minimum of a 100-foot buffer between the edge of the ROW and the previously transplanted cacti (the existing research plots). A 300-foot buffer between the ROW edge and the cacti would be preferred to avoid all impacts.

Reinitiation/Closing Statement

This concludes formal consultation on the actions outlined in the July 20, 2015, BA and September 11, 2015, BA revision, as amended, request for the Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this BO; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, the specific action(s) causing such take shall be subject to reinitiation expeditiously.

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ATTACHMENT

Conservation Measures for the Energy Gateway South Transmission Line Project as defined by the September 11, 2015 BA revision (and as updated January 11, 2016)

Platte River Species - Pallid Sturgeon, Least Tern, Piping Plover, Whooping Crane, Western Prairie Fringed Orchid

- ***Platte River Multi-species Conservation Measure 1*:** All water used in construction of the Project would be acquired from previously allocated sources covered under previous Section 7 consultation or water that is not hydrologically connected to the Platte River system and therefore does not require Section 7 consultation.

Colorado River Species - Bonytail, Colorado Pikeminnow, Humpback Chub, Razorback Sucker

- ***Colorado River Multi-species Conservation Measure 1*:** No construction equipment will operate in or cross the actively flowing channel of the Green, White, or Yampa rivers.
- ***Colorado River Multi-species Conservation Measure 2*:** Materials will not be stockpiled in the 100-year floodplain of the Green, White, or Yampa rivers or any wetlands connected to those rivers.
- ***Colorado River Multi-species Conservation Measure 3*:** To avoid entrainment of ESA-listed fish species, surface water will not be taken from the Green, White, or Yampa rivers or their tributaries.
- ***Colorado River Multi-species Conservation Measure 4*:** No surface disturbance, staging areas, or permanent structures will be located in the 1O0-year floodplain of the Green and White rivers.
- ***Colorado River Multi-species Conservation Measure 5*:** For any activities within the 100-year floodplain of the Yampa River, the following conservation measures will apply:
    - Construction and maintenance in the floodplain of the Yampa River will take place during seasonal low flows.
    - Ground disturbance and vegetation clearing will be located in areas that avoid or minimize impacts on PCEs.
    - Ground disturbance and vegetation clearing will be minimized in the Yampa River floodplain, Drive-and-crush access and construction techniques will be used to the extent feasible. In areas where vegetation drive-and-crush access and construction techniques are not feasible, the least impactful technique will be used. In areas where vegetation clearing is necessary, vegetation will be trimmed with the root balls left intact and in place wherever practical.
    - No permanent access roads will be constructed in the 100 year floodplain. Any grading activities will be conducted in a way that avoids altering seasonal flow regimes.
    - All temporary disturbance in the floodplain will be promptly stabilized and reclaimed to minimize the potential for erosion.
    - Soil stabilization and erosion control measures will be implemented during construction and through completion of reclamation activities. Specific measures erosion control measures will be developed in coordination with the FWS and will be identified in the Stormwater Pollution Prevention Plan, which is a component of the POD.

- ***Colorado River Multi-species Conservation Measure 6:*** Prior to any vegetation removal in critical habitat for Colorado River fish, a preconstruction site will be attended by the BLM, FWS, Proponent, and construction representatives to discuss implementation of measures designed to protect riparian function and critical habitat for Colorado River fish.
- ***Colorado River Multi-species Conservation Measure 7:*** Refueling and storing potentially hazardous materials will not occur within the 100-year floodplain of the White, Green, and Yampa rivers and their perennial tributaries. Spill preventive practices and containment measures will be incorporated in the Water Resources Protection Plan, which will be developed as a part of the POD.
- ***Colorado River Multi-species Conservation Measure 8:*** No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of bonytail, Colorado pikeminnow, humpback chub, or razorback sucker designated critical habitat.
    - For noxious weed control within 2,500 feet of bonytail, Colorado pikeminnow, humpback chub, or razorback sucker designated critical habitat, the following restrictions apply:
    - Herbicides will not be applied over surface water. Only agency-approved herbicides registered for use near water will be used within 328 feet of surface water or in areas with a high leaching potential. Minimum pesticide spray distances (buffers) from surface water are as follows:
        - Backpack spraying operations -20 feet
        - Other mechanized applications (e.g., truck or all-terrain vehicle mounted equipment) – 50 feet
- ***Colorado River Multi-species Conservation Measure 9:*** All required depletion fees would be paid by the Proponent within the required timeframe. At a minimum, 10 percent would be paid at the time the BLM issues a Record of Decision. The remaining balance would be paid when water use commences for the Project.
- ***Colorado River Multi-species Conservation Measure 10:*** The Proponent will develop and implement, as a part of the construction compliance management system committed to in the POD, a tracking tool to record water use during construction. The tracking tool will ensure that all depletions are properly recorded and any required fees for depletions in the Colorado River basin are assessed and paid to the Upper Colorado River Endangered Fish Recovery Program.

June Sucker

- ***June Sucker Conservation Measure 1:*** Refueling and storing potentially hazardous materials in the Jordan River basin will not occur within a 328-foot radius of any tributaries of Utah Lake known to support June sucker spawning. Spill preventive practices and containment measures will be incorporated in the Water Resources Protection Plan, which will be developed as a part of the POD.
- ***June Sucker Conservation Measure 2:*** No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of June sucker designated critical habitat. For noxious weed control within 2,500 feet of June sucker designated critical habitat, the following restrictions apply:
    - Herbicides will not be applied over surface water. Only agency-approved herbicides registered for use near water will be used within 328 feet of surface water or in areas

with a high leaching potential. Minimum pesticide spray distances (buffers) from surface water are as follows:
  - Backpack spraying operations - 20 feet
  - Other mechanized applications (e.g., truck or all-terrain vehicle mounted equipment) – 50 feet
- ***June Sucker Conservation Measure 3:*** Ground clearing will be minimized in the floodplain of any tributaries of Utah Lake known to support June sucker spawning, and vegetation will be trimmed with the root balls left intact and in place wherever practical. All temporary disturbances in the floodplain will be promptly stabilized and reclaimed to minimize the potential for erosion. Soil stabilization and erosion control measures will be stipulated in the Stormwater Pollution Prevention Plan, which is a component of the POD.

Greater Sage-Grouse

- ***Greater Sage-Grouse Conservation Measure 1:*** For any activities associated with the geotechnical investigation, the following restrictions will apply:
  - Seasonal and spatial restrictions identified in the POD and ongoing land-use plan amendments will be adhered to.
  - All work in designated sage-grouse habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
  - Existing access roads in designated sage-grouse habitat may be used, but not improved.
- ***Greater Sage-Grouse Conservation Measure 2:*** Special status species will be considered in accordance with management policies set forth by management agencies. Surveys for special status wildlife potentially affected by the Project will be conducted in suitable habitat along the selected route using protocols approved by the BLM, USFS, or other cooperating agencies. Construction techniques that avoid and minimize impacts on special status wildlife populations and habitat would be implemented , which may include altering the placement of roads or transmission-line structures, use of existing roads, and minimization of vegetation clearing. Additional techniques to minimize impacts on sage-grouse in select locations may include structure design modification and the use of perch deterrents to reduce the effects of predation, and flight diverters and marking devices to reduce the risk of collision. The locations where these types of measures would be implemented would be determined by the BLM in coordination with the cooperating agencies. Monitoring of identified special status wildlife populations and habitat also may be required.
- ***Greater Sage-Grouse Conservation Measure 3:*** All construction vehicle movement will be restricted to designated access roads based on avoidance of known noxious weed locations.
- ***Greater Sage-Grouse Conservation Measure 4:*** To minimize vehicle collisions with special status wildlife, a speed limit of 15 miles per hour will be employed on overland access routes.
- ***Greater Sage-Grouse Conservation Measure 5:*** All new or improved access not required for maintenance will be closed or rehabilitated following Project construction in accordance with prior agency approval and using the most effective and least environmentally damaging methods.

- ***Greater Sage-Grouse Conservation Measure 6:*** Construction and maintenance activities will be restricted in designated areas and during critical periods, (e.g., wintering habitats and specific breeding or nesting seasons). The timing of restrictions will be based on measures developed for the EIS and ongoing Land Use Plan Amendments.
- ***Greater Sage-Grouse Conservation Measure 7:*** Drive-and-crush (vehicular travel to access a site without significantly modifying the landscape) and/or clear-and-cut travel (removal of vegetation to provide suitable access for equipment) will occur in areas where no grading will be needed to access work areas (i.e., areas with low-growing sagebrush and other low-growing vegetation). This will reduce the amount of ground-disturbing activities (e.g., surface soil removal, vegetation cropping/cutting) landscape modification, risk of introduction of invasive weeds, and special status wildlife habitat fragmentation, Modification of sagebrush vegetation communities, which provide necessary cover and forage for habitat suitability, resulting from vegetation clearing, will be limited in habitats occupied by sagebrush obligate special status wildlife species like greater sage-grouse.
- ***Greater Sage-Grouse Conservation Measure 8:*** To minimize disturbance to greater sage-grouse habitats, the transmission-line right-of-way would be sited to avoid locally important habitats identified in consultation with the Proponent, BLM, FWS, and state wildlife agencies. Where seasonally important habitats (i.e., within 4 miles of leks, nesting, wintering) cannot be avoided, then transmission-line right-of-way would be further sited as follows:
    - In areas to maximize colocation with other above-ground utilities
    - In existing designated corridors
    - In nonhabitat (i.e., within 4 miles of leks but outside of preliminary priority habitat, occupied habitat, woodland vegetation communities)
    - In areas where placement of structures and access roads maximizes the use of topographic features to visually screen impacts from seasonally important habitats
    - In areas that minimize fragmentation (i.e., use existing roads, no new permanent roads, drive and crush).

Mexican Spotted Owl

- ***Mexican Spotted Owl Conservation Measure 1:*** Potentially suitable habitat assessments, including field verification, will be completed using BLM- and FWS-approved methods prior to final design of the transmission line and initiation of construction activities.
- ***Mexican Spotted Owl Conservation Measure 2:*** For any activities associated with the geotechnical investigation, the following restrictions will apply:
    - Geotechnical activities will not be conducted within 0.5 mile of potentially suitable habitat identified during the habitat assessment between March 1 and August 31.
    - Existing access roads located in potentially suitable habitat identified during the habitat assessment and within 0.5 mile of potentially suitable habitat identified during the habitat assessment may be used, but not improved.
- ***Mexican Spotted Owl Conservation Measure 3:*** Surveys will be conducted for 2 years prior to construction activities within 0.5 mile of construction activities in potentially suitable habitat identified during the habitat assessment, Surveys will be conducted according to FWS-approved methods. If owls are found, no actions will occur within 0.5

mile of identified nest sites between March 1 and August 31. If nest site is unknown, no activity will occur within the designated Protected Activity Center (PAC) between March 1 and August 31.

- ***Mexican Spotted Owl Conservation Measure 4:*** The placement of permanent structures within 0.5 mile of suitable habitat identified during the habitat assessment will be avoided unless Mexican spotted owl suitable habitat is surveyed and determined to be unoccupied.

Yellow-billed Cuckoo

- ***Yellow-bitted Cuckoo Conservation Measure 1:*** Habitat assessments, including field verification, will be completed within 0.5 mile of construction activities according to Guidelines for identification of suitable breeding and nesting habitat for western yellow-billed cuckoo in Utah (FWS 2015) prior to final design of the transmission line and initiation of the geotechnical investigation or other construction activities to identify suitable nesting habitat. Results will be provided to the FWS for review and concurrence.
- ***Yellow-billed Cuckoo Conservation Measure 2:*** Protocol breeding season surveys will be conducted in suitable nesting habitat within 0.5 mile of construction activities prior to initiation of the geotechnical investigation or any other construction activities unless species occupancy and distribution information is complete, available, and supports a conclusion that the species is not present; or unless otherwise agreed to by the FWS and BLM in response to mitigating factors such as existing disturbance, screening, or site-specific habitat conditions. All surveys must be conducted according to protocol by surveyors who have attended a FWS-approved yellow-billed cuckoo survey training and are operating under a recovery permit.
- ***Yellow-billed Cuckoo Conservation Measure 3:*** For any activities associated with the geotechnical investigation, the following restrictions will apply:
    - Geotechnical activities will not occur within 0. 5 mile of suitable nesting habitat, as determined by the habitat assessments, between June I and August 31.
    - Existing access roads within 0.5 mile of suitable nesting habitat as determined by the habitat assessments may be used during any time of year, but not improved.
    - Geotechnical activity will not occur within suitable yellow-billed cuckoo nesting habitat.
- ***Yellow-billed Cuckoo Conservation Measure 4:*** Transmission-line structures and other permanent or temporary project facilities (including but not limited to new access roads, work areas, or other structures) will not be sited in field-verified suitable nesting habitat. Waterways will be spanned in field-verified suitable nesting habitat. For existing access roads, avoid upgrades that would require clearing and pruning riparian vegetation within field-verified suitable nesting habitat.
- ***Yellow-billed Cuckoo Conservation Measure 5:*** Microsite or increase the height of tower structures to prevent the need to clear or prune vegetation within field-verified suitable nesting habitat. Should some vegetation management be required to ensure that minimum North American Electric Reliability Council vegetation management standards are maintained in these areas, a proposal that outlines the locations and extent of clearing/pruning will be submitted to the FWS to ensure that the effects are not more than insignificant or discountable. If these effects are not insignificant or discountable, then consultation on the western yellow-billed cuckoo would be reinitiated.

- ***Yellow-billed Cuckoo Conservation Measure 6:*** Project activities (e.g., road construction or improvement, geotechnical activities, vegetation management, transmission-line construction, right-of-way reclamation, and maintenance activities), will not be conducted within a 0.5-mile buffer of occupied nesting habitat or field-verified suitable nesting habitat that has not been completely surveyed to determine occupancy between June I and August 31.
- ***Yellow-billed Cuckoo Conservation Measure 7:*** Prior to any vegetation removal or clearing in suitable nesting habitat as determined by the habitat assessments, shrubs and trees targeted for removal will be flagged for review during a site visit attended by the BLM, FWS, Proponent, and construction representatives.
- ***Yellow-billed Cuckoo Conservation Measure 8:*** All transmission lines that cross field-verified suitable habitat will be marked to minimize the potential for collisions in coordination with the FWS. Marking will occur from one outer edge of suitable habitat to the outer edge of suitable habitat on the opposite side of the river.
- ***Yellow-billed Cuckoo Conservation Measure 9:*** New biological information regarding the yellow-billed cuckoo and potential effects of the Project would be addressed as follows:
    - Habitat assessment and survey methods, survey areas, and avoidance buffers would be modified to be consistent with updates and revisions to the current 2015 draft survey protocol and habitat assessment guidance issued by the FWS.
    - Site-specific adjustments to survey and avoidance buffers may be implemented on agreement between the BLM and FWS on a case-by-case basis (e.g., in response to terrain that facilitates or limits noise transmission, or the conditions of the habitat at a specific location), following the interagency preconstruction site visits.
- ***Yellow-billed Cuckoo Conservation Measure 10:*** No aerial or broadcast herbicide treatments will be applied within 0.5 mile of field-verified suitable nesting habitat. Within 0.5 mile of field verified suitable nesting habitat, herbicides will be applied using a backpack spray operation or by hand from an all-terrain vehicle. Only agency-approved herbicides registered for use near water will be used within 300 feet of surface water. Insecticides will not be used within 0.5 mile of field-verified suitable nesting habitat.

Black-footed Ferret

All populations of black-footed ferrets crossed by the Project are reintroduced NEPs. The following conservation measures apply only to these NEPs as no black-footed ferret populations are known to occur outside these reintroduction areas.

- ***Black-footed Ferret Conservation Measure 1:*** For any activities associated with the geotechnical investigation, the following restrictions will apply:
    - All geotechnical activities located within 0.5 mile of prairie dog colonies in active black-footed ferret reintroduction management areas during the breeding season (March 1 through July 15) will be avoided.
    - All geotechnical activities in prairie dog colonies in active black-footed ferret reintroduction management areas would be located to avoid damaging prairie dog burrows.

  - All work in prairie dog colonies in active black-footed ferret reintroduction management areas will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
  - Existing access roads in prairie dog colonies in active black-footed ferret reintroduction management areas may be used, but not improved.
- ***Black-footed Ferret Conservation Measure 2:*** In active black-footed ferret reintroduction management areas, the transmission line will be located as close as possible to existing and other planned high-voltage transmission lines.
- ***Black-footed Ferret Conservation Measure 3:*** The local BLM field office will be notified 10 to 20 days prior to the initiation of construction activities in active black-footed ferret reintroduction management areas.
- ***Black-footed Ferret Conservation Measure 4:*** Vehicle activities will be restricted to daylight hours in occupied black-footed ferret habitat to minimize the risk of vehicle collision.
- ***Black-footed Ferret Conservation Measure 5:*** Disruptive activities within 0.5 mile of prairie dog colonies in active black-footed ferret reintroduction management areas will be conducted outside the reproductive period (March I through July 15), with special emphasis on avoiding the period between birthing and the emergence of young (May 1 through July 15).

Canada Lynx
No conservation measures are proposed specifically for the Canada lynx.

Gray Wolf
No conservation measures are proposed specifically for the gray wolf.

Clay Phacelia

- ***Clay Phacelia Conservation Measure 1:*** A field habitat assessment would be conducted prior to final engineering and design, the geotechnical investigation, or any other construction activities, to ground-truth the August 2013 USFS-suitable habitat model and determine presence of suitable habitat within a 650-buffer surrounding modeled habitat where this area is traversed by the proposed right-of-way or has potential to be affected by other project-related disturbance (i.e., geotechnical investigations, access roads, fly yards). Habitat assessments will be coordinated with the Utah Field Office of FWS and may occur any time as long as there is no snow cover. Suitable habitat parameters developed by the FWS (Appendix E) will be used to assess habitat suitability.
- ***Clay Phacelia Conservation Measure 2:*** Following habitat assessments, all suitable habitat (including field-verified suitable habitat identified in both modeled habitat and areas of suitable habitat outside of the modeled habitat) within 650 feet of either side of the right-of-way and other areas where Project impacts will occur will be 100 percent surveyed by BLM-approved individual(s) prior to final design of the transmission line, the geotechnical investigation, or any other construction activities. Surveys will be coordinated with the Utah Field Office of FWS and conducted in accordance with agency-approved methods and protocols.
- ***Clay Phacelia Conservation Measure 3:*** All occupied sites, including occupied habitat identified during field surveys, will be avoided by Project activities inside and outside the

right-of-way (including structures, facilities, new roads, upgrades to existing roads, and overland vehicle traffic) by at least 650 feet. Section 7 consultation will be reinitiated if any impacts are anticipated within 650 feet of occupied clay phacelia habitat.

- ***Clay Phacelia Conservation Measure 4:*** For any activities associated with the geotechnical investigation the following requirements apply:
  - All work within 650 feet of occupied clay phacelia habitat will be moved or abandoned.
  - All work within 650 feet of suitable habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
  - Existing access roads within 650 feet of suitable clay phacelia habitat may be used, but not improved.
- ***Clay Phacelia Conservation Measure 5:*** Appropriate erosion control measures (e.g., silt fence, straw wattles) will be constructed where disturbance occurs within 650 feet of suitable habitat or if such measures are needed to prevent sedimentation or dust deposition in suitable habitat.
- ***Clay Phacelia Conservation Measure 6:*** A qualified, BLM-approved botanist will be onsite to monitor surface-disturbing activities when clay phacelia suitable habitat is within 650 feet of any surface-disturbing activities. In addition to ensuring compliance with all applicable conservation measures, the botanist also will:
  - Make areas for avoidance visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.) before and during construction,
  - Provide the FWS and BLM with a post-construction report of compliance with conservation measures and any activities within 650 feet of suitable clay phacelia habitat.
- ***Clay Phacelia Conservation Measure 7:*** Only water (no chemicals, reclaimed production water or other) will be used for dust abatement measures in suitable clay phacelia habitat.
- ***Clay Phacelia Conservation Measure 8:*** Dust abatement will be employed during maintenance activities in field-verified suitable clay phacelia habitat over the life of the Project during the time of the year when the plant is most vulnerable to dust-related impacts (March through August).
- ***Clay Phacelia Conservation Measure 9:*** The following restrictions apply to herbicide use in suitable or occupied clay phacelia habitat:
  - No aerial or broadcast herbicide treatments will he applied for vegetation management within 2,500 feet of suitable or occupied clay phacelia habitat.
  - If aerial or broadcast spraying is needed for noxious weed control within 2,500 feet of suitable or occupied clay phacelia habitat, a weed management plan will be developed in coordination with FWS and consultation will be reinitiated.
- ***Clay Phacelia Conservation Measure 10:*** Upgrades to existing access roads in suitable habitat will be limited such that it has minimal impact on clay phacelia habitat, eliminates the need to construct a new road, or is necessary for safety.
- ***Clay Phacelia Conservation Measure 11:*** Surface reclamation will occur for any Project-related ground-disturbing activity. The method of reclamation will normally consist of, but is not limited to, salvaging, segregating and restoring topsoil, returning disturbed areas back to their natural contour, reseeding using seed mixes developed in

coordination with the BLM, USFS, and FWS botanists, installing cross drains for erosion control, placing water bars in the road, and filling ditches.

Clay Reed-mustard

- ***Clay Reed-mustard Conservation Measure 1:*** Pre-project habitat assessments will be completed across 100 percent of the disturbance area in FWS-mapped potential habitat prior to any ground disturbing activities to determine if suitable clay reed-mustard habitat is present.
- ***Clay Reed-mustard Conservation Measure 2:*** Site inventories will be conducted in suitable habitat (defined as areas which contain or exhibit the specific components or constituents necessary for plant persistence; determined by field inspection and/or surveys; may or may not contain clay reed-mustard) to determine occupancy. Where standard surveys are technically infeasible and otherwise hazardous due to topography, slope, etc., suitable habitat will be assessed and mapped for avoidance (hereafter, avoidance areas); in such cases, 3O0-foot buffers will be maintained between surface disturbance and avoidance areas. However, site-specific distances will need to be approved by the FWS and BLM whenever disturbance will occur upslope of habitat. Where conditions allow, inventories:
    - Must be conducted by qualified, BLM-approved individual(s) and according to BLM- and FWS-accepted survey protocols.
    - Will be conducted in suitable and occupied habitat for all areas proposed for surface disturbance prior to initiation of Project activities and in the same growing season at a time when the plant can be detected (usually May I to June 5, in the Uinta Basin; however, surveyors will verify that the plant is flowering by contacting a BLM or FWS botanist or demonstrating that the nearest known population is in flower).
    - Will occur within 300 feet of Project-related disturbance.
    - Will include, but not be limited to, plant species lists and habitat characteristics.
    - Will be valid until May 1 of the following year.
- ***Clay Reed-mustard Conservation Measure 3:*** For any activities associated with the geotechnical investigation the following requirements apply:
    - All work within 300 feet of occupied clay reed-mustard habitat will be moved or abandoned
    - All work within 300 feet of suitable habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures
    - Existing access roads within 300 feet of suitable clay reed-mustard habitat may be used, but not improved
- ***Clay Reed-mustard Conservation Measure 4:*** Project infrastructure will be designed to minimize impacts in suitable habitat. This will include the following considerations:
    - Where standard surveys are technically infeasible, infrastructure and activities will avoid all suitable habitat by 300 feet. However, site-specific distances will need to be approved by the FWS and BLM when disturbance will occur upslope of habitat.
    - New access route creation will be limited.
    - Roads and utilities will share common right-of-ways where possible.

  - The width of roads will be reduced and the depth of excavation needed for the road bed will be minimized; where feasible, the natural ground surface will be used for roads in suitable habitat,
  - Signing will be placed to limit off-road travel in sensitive areas.
  - Activities will be constrained to designated routes and other cleared/approved areas.
- ***Clay Reed-mustard Conservation Measure 5:*** Project-related surface disturbance will avoid all occupied habitat by 300 feet. Project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts on populations and to individual plants. This will include the following considerations:
  - To avoid water flow and/or sedimentation into occupied habitat and avoidance areas, silt fences, hay bales, and similar structures or practices will be incorporated into Project design; appropriate placement of fill is encouraged.
- ***Clay Reed-mustard Conservation Measure 6:*** A qualified, BLM-approved biologist or botanist must be onsite preconstruction to clearly mark or flag avoidance areas so they are visible during construction. Qualified personnel also will be present during construction to monitor avoidance of these areas. A post-construction report documenting compliance and noncompliance with these measures will be prepared by the qualified personnel and submitted to the FV/S.
- ***Clay Reed-mustard Conservation Measure 7:*** Dust abatement will occur during the peak flowering season (April through May) and only water will be used within 300 feet of suitable habitat.
- ***Clay Reed-mustard Conservation Measure 8:*** The following restrictions apply to herbicide use in suitable or occupied clay reed-mustard habitat:
  - No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of suitable or occupied clay reed-mustard habitat.
  - For noxious weed control within 2,500 feet of suitable or occupied clay reed-mustard habitat, manual spot treatments (i.e. backpack sprayers) shall be used.
  - All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with clay reed-mustard to help herbicide applicators identify reed mustard and avoid impacts on individual plants.
  - Treatments would not be done when wind speeds exceed 6 miles per hour.
  - Drift reducing agents shall be used when practical.
  - A reduced application rate would be used.
  - Pump pressure would be reduced, per label instructions.
  - Droplet size would be increased to the largest size possible while still effectively covering the target vegetation. This could be accomplished using larger nozzles or reduced pressure.
  - Herbicides shall be stored in spill proof containers away from special status plant habitats.

Deseret Milkvetch

- ***Deseret Milkvetch Conservation Measure 1:*** Focused-intuitive surveys will be conducted along the proposed right-of-way to identify and survey any previously unidentified areas of potentially suitable Deseret milkvetch habitat. Surveys will occur in all areas of potentially suitable habitat. Potentially suitable habitat will be identified

based on a geographic information system (GIS) exercise to identify, survey areas prepared by the BLM and Proponent coordination with the FWS Utah Field Office. The GIS exercise will help identify habitats that may be suitable for the species on west through south aspects of the Moroni formation. The identification of suitable habitat will be refined by review of aerial imagery and bounded by the Section 7 consultation boundary provided by the F'WS. Suitable habitat parameters developed by the FWS (Appendix E) will be used to identify appropriate survey areas.

- ***Deseret Milkvetch Conservation Measure 2:*** If the Project can avoid all suitable habitat (as documented during the focused-intuitive surveys) and occupied habitat (as documented) within a 300-foot buffer, no surveys are necessary. If avoidance of suitable habitat is not possible, surveys will be performed within 300 feet of the Project area to determine occupancy prior to construction or 400 feet if upslope of suitable or occupied habitat. If surveys are necessary, they must be performed by qualified, BLM-approved individual(s) and according to FWS-accepted survey protocols. Surveys will be conducted during the flowering and/or fruiting period when the plant can be detected and correctly identified. Surveys will be valid for one calendar year.
- ***Deseret Milkvetch Conservation Measure 3:*** For any activities associated with the geotechnical investigation the following requirements apply:
    - All work within 300 feet (400 feet if upslope) of occupied Deseret milkvetch habitat will be moved or abandoned.
    - All work within 300 feet of suitable habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
    - Existing access roads within 300 feet of suitable Deseret milkvetch habitat may be used, but not improved.
- ***Deseret Milkvetch Conservation Measure 4:*** No new development or permanent ground disturbance, including but not limited to poles, pads, towers, etc., will occur within a 300-foot buffer of occupied Deseret milkvetch habitat. If construction activities occur upslope of occupied habitat, the buffer may be increased to 400 feet to prevent additional erosion in the habitat.
- ***Deseret Milkvetch Conservation Measure 5:*** Wire will be strung between towers aerially with no ground disturbance in field-verified habitat or within 300 feet of occupied Deseret milkvetch habitat.
- ***Deseret Milkvetch Conservation Measure 6:*** No new roads will be established within a 300-foot buffer of occupied Deseret milkvetch habitat. If construction activities occur upslope of occupied habitat, the buffer may be increased to 400 feet to prevent additional erosion in the habitat. Existing access roads will be used to the extent practicable to limit additional fragmentation in the species' habitat from new road development that avoid occupied habitat.
- ***Deseret Milkvetch Conservation Measure 7:*** The existing access road to the north of Birdseye that connects to Blind Canyon Road contains plants alongside the road and within 300 feet of the road edge. This road will not be used for any Project-related activities,
- ***Deseret Milkvetch Conservation Measure 8:*** A qualified, BLM-approved biologist or botanist must be onsite preconstruction to clearly mark or flag avoidance areas so they are visible during construction. Qualified personnel also will be present during construction to monitor avoidance of these areas. A post-construction report documenting

compliance and noncompliance with these measures will be prepared by the qualified personnel and submitted to the FWS no later than I month after construction.

- ***Deseret Milkvetch Conservation Measure 9:*** After construction, the Project will provide a GTS shapefile or documentation of new and upgraded access routes to the appropriate emergency fire operations personnel with the State of Utah, BLM, USFS, and FWS, as well as notification statement that there is an ESA-listed plant species in the area of Birdseye, Utah. This information will be provided no later than 1 year after construction of this specific transmission-line segment.
- ***Deseret Milkvetch Conservation Measure 10:*** No vegetation treatments will be performed within a 300-foot buffer of occupied Deseret milkvetch habitat.
- ***Deseret Milkvetch Conservation Measure 11:*** The following restrictions apply to herbicide use in suitable or occupied Deseret milkvetch habitat:
    - No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of suitable or occupied Deseret milkvetch habitat.
    - For noxious weed control within 2,500 feet of suitable or occupied Deseret milkvetch habitat, manual spot treatments (i.e. backpack sprayers) shall be used.
    - All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with Deseret milkvetch to help herbicide applicators identify
    - Deseret milkvetch and avoid impacts on individual plants.
    - Treatments would not be done when wind speeds exceed 6 miles per hour.
    - Drift reducing agents shall be used when practical.
    - A reduced application rate would be used.
    - Pump pressure would be reduced, per label instructions.
    - Droplet size would be increased to the largest size possible while still effectively covering the target vegetation. This could be accomplished using larger nozzles or reduced pressure.
    - Herbicides shall be stored in spill proof containers a\¡/ay from special status plant habitats.

Shrubby Reed-mustard

- ***Shrubby Reed-mustard Conservation Measure 1:*** Prior to construction, FWS-mapped potentially suitable habitat within 300 feet of any Project-related activity will be 100 percent surveyed by BLM-approved botanists following appropriate FWS guidelines.
- ***Shrubby Reed-mustard Conservation Measure 2:*** For any activities associated with the geotechnical investigation the following requirements apply:
    - All work within 300 feet of occupied shrubby reed-mustard habitat will be moved or abandoned.
    - All work within 300 feet of suitable habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
    - Existing access roads within 300 feet of suitable shrubby reed-mustard habitat may be used, but not improved.
- ***Shrubby Reed-mustard Conservation Measure 3:*** New surface disturbance is prohibited within 300 feet of occupied shrubby reed-mustard habitat.

- ***Shrubby Reed-mustard Conservation Measure 4:*** In proximity to suitable habitat, all construction activities will be overseen by a biological monitor to ensure compliance with all applicable conservation measures. The biological monitor will also:
  - Before and during construction, make areas for avoidance visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.).
  - Provide the FWS and BLM with a post-construction report of compliance, impacts, and extent of impacts on shrubby reed-mustard.
- ***Shrubby Reed-mustard Conservation Measure 5:*** Wrinkles Road will not be used for any Project-related activities.
- ***Shrubby Reed-mustard Conservation Measure 6 :*** Appropriate erosion control measures (silt fencing, hay bales, or other methods) will be taken where Project activities occur within 300 feet upslope of suitable habitat,
- ***Shrubby Reed-mustard Conservation Measure 7:*** The following restrictions apply to herbicide use in suitable or occupied shrubby reed-mustard habitat:
  - No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of suitable or occupied shrubby reed-mustard habitat.
  - For noxious weed control within 2,500 feet of suitable or occupied shrubby reed-mustard habitat, manual spot treatments (i.e. backpack sprayers) shall be used,
  - All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with shrubby reed-mustard to help herbicide applicators identify shrubby reed-mustard and avoid impacts on individual plants.
  - Treatments would not be done when wind speeds exceed 6 miles per hour.
  - Drift reducing agents shall be used when practical.
  - A reduced application rate would be used.
  - Pump pressure would be reduced, per label instructions.
  - Droplet size would be increased to the largest size possible while still effectively covering the target vegetation. This could be accomplished using larger nozzles or reduced pressure.
  - Herbicides shall be stored in spill proof containers away from special status plant habitats.
- ***Shrubby Reed-mustard Conservation Measure 8:*** Dust abatement will occur during the peak flowering season (April 15th through August 15th) and only water will be used within 300 feet of suitable habitat.

Uinta Basin Hookless Cactus

- ***Uinta Basin Hookless Cactus Conservation Measure 1:*** Surveys for Uinta Basin hookless cactus will be conducted prior to final design of the Project using survey protocols developed for the Project through coordination with the BLM and FV/S (Appendix F).
- ***Uinta Basin Hookless Cactus Conservation Measure 2:*** All Uinta Basin hookless cactus transplant sites and study plots will be avoided to the extent possible.
- ***Uinta Basin Hookless Cactus Conservation Measure 3:*** Right-of-way placement within 300 feet of occupied Uinta Basin hookless cactus habitat will be avoided to the extent possible.

- ***Uinta Basin Hookless Cactus Conservation Measure 4:*** For any activities associated with the geotechnical investigation, the following requirements apply:
  - All work requiring Uinta Basin hookless cactus to be transplanted will be moved or abandoned.
  - All work within 300 feet of suitable or occupied habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
  - Alternative, low-impact geotechnical investigation methods will be used within 300 feet of occupied habitat. These methods could include walk-in or helicopter-assisted drilling and will be subject to BLM and FWS approval.
  - Existing access roads within 300 feet of suitable Uinta Basin hookless cactus habitat may be used, but not improved.
- ***Uinta Basin Hookless Cactus Conservation Measure 5:*** Permanent and temporary disturbance will be sited to: (l) maximize the distance from adjacent Uinta Basin hookless cactus, (2) minimize impacts on the maximum number of cacti technically feasible, and (3) minimize the overall surface-disturbance area without compromising safety.
- ***Uinta Basin Hookless Cactus Conservation Measure 6:*** Construction will occur down slope of plants and populations where feasible and avoid concentrating water flows or sediments to plants. Appropriate erosion/sedimentation control measures (i.e., silt fencing, straw wattles) will be used to protect Uinta Basin hookless cactus within 300 feet and downslope or downwind of surface disturbance. Fencing is intended to prevent sedimentation or dust deposition and will be evaluated for effectiveness by a qualified, BLM-approved botanist.
- ***Uinta Basin Hookless Cactus Conservation Measure 7:*** A qualified, BLM-approved botanist will be on-site to flag cacti or avoidance areas, train construction crews on how to avoid cacti, and be sure that construction and activities avoid or minimize damage to habitat when Uinta Basin hookless cactus is within 300 feet of any surface-disturbing activities.
- ***Uinta Basin Hookless Cactus Conservation Measure 8:*** Dust abatement (consisting of water only) will occur during construction and maintenance activities within the Sclerocactus potential habitat polygon over the life of the Project. Dust abatement will occur during the time of the year when cactus is most vulnerable to dust-related impacts (March 1st through August 31st).
- ***Uinta Basin Hookless Cactus Conservation Measure 9:*** Ground-disturbing activities will occur outside of the flowering season, typically March 15 to June 30, in the Sclerocactus potential habitat polygon (including CCAI and2) as defined by the FV/S. This will avoid adverse impacts on Sclerocactus reproductive success due to the high volumes of dust produced during construction and ground-disturbing activities.
- ***Uinta Basin Hookless Cactus Conservation Measure 10:*** A 15-mile-per-hour speed limit for all construction personnel will be implemented within 300 feet of occupied habitat.
  - Speed limit signs will be posted for project personnel.
  - Signing will be posted to limit off-road travel in sensitive areas.
- ***Uinta Basin Hookless Cactus Conservation Measure 11:*** The FWS will be contacted within 24 hours in the event of any emergency or unforeseen situation in which cacti or habitat will be damaged or lost.

- ***Uinta Basin Hookless Cactus Conservation Measure 12:*** All disturbed areas in the Sclerocactus potential habitat polygon will be reclaimed using seed mixes composed mostly of native species developed in coordination with the BLM botanist and the FWS and final approval will be provided by the BLM.
- ***Uinta Basin Hookless Cactus Conservation Measure 13:*** Post-construction monitoring for invasive species will be required. Noxious weeds in Sclerocactus habitat will follow mitigation measures identified in the BLM's 2007 Programmatic EIS for Vegetation Treatments using Herbicides. Coordination would occur with the BLM Vernal Field Office weed coordinator prior to noxious weed management in Sclerocactus habitat.
- ***Uinta Basin Hookless Cactus Conservation Measure 14:*** Where complete avoidance of individual cacti is not feasible, all cacti located in the areas required to be disturbed by the Project will be transplanted by a qualified botanist according to FWS protocols. Only cacti that were not previously transplanted or used as control plants for Uinta Basin hookless cactus monitoring studies would be allowed to be affected during this Project and potentially transplanted. The number of cacti to be transplanted would be calculated after the surveys are completed. A 10-year monitoring plan, specific to Uinta basin hookless cactus, will be developed in coordination with FWS for all transplanted cacti.
    - Cacti shall be transplanted into high-quality unoccupied suitable habitat or habitat with a few scattered individuals within the range of the species to prevent disruption and competition with occupied sites. Recipient sites should be coordinated with botanists from the BLM and FWS. Up to 30 of the cacti to be transplanted can instead be donated to up to three Center for Plant Conservation-designated botanical gardens for education or formation of an ex-situ collection as determined by the BLM and FWS botanists in coordination with the recipient garden.
- ***Uinta Basin Hookless Cactus Conservation Measure 15:*** Mitigation will be required in occupied suitable habitat based on the results of surveys and residual impacts. A monetary amount will be contributed to the Sclerocactus Mitigation Fund to aid in the recovery of Sclerocactus species affected by the Project. The payment will be calculated using the Sclerocactus compensatory mitigation calculation table provided by the FWS upon completion of surveys and final engineering design. The primary purpose of the mitigation fund is to implement conservation and restoration activities for Sclerocactus and its habitat or to acquire suitable or occupied habitat.
- ***Uinta Basin Hookless Cactus Conservation Measure 16:*** Additional measures to avoid or minimize effects on the species may be developed and implemented in consultation with the FWS to ensure continued compliance with the ESA.

Ute Ladies'-tresses

- ***Ute Ladies'-Tresses Conservation Measure 1:*** Field habitat assessments will be conducted to identify, areas of potentially suitable Ute ladies tresses habitat in the Project area where surveys will be conducted. Field habitat assessments
    - Must be conducted by qualified individual(s) approved by the BLM and FWS.
    - Will occur during the growing season.
    - Will occur within 300 feet of any planned disturbance or areas likely to experience hydrology changes resulting from Project activities

- Will identify habitat meeting the criteria described in 1992Interim Survey Requirements for Ute ladies'-tresses Orchid (FWS 1992) and Rangewide Status Review of Ute Ladies'-Tresses (Spiranthes diluvialis) (Fertig et. al2005).
- Will exclude habitats meeting the following criteria:
- Appropriate hydrology not present, typically indicated by
    - area comprised of mostly upland vegetation
    - area that dries up by mid-July with a water table lower than 12 to 18 inches below the soil surface
- Heavy clay soils present
- Soils strongly alkaline
- Site heavily disturbed, such as, for example:
    - Stream banks channelized and stabilized by heavy rip-rap
    - Highway rights-of-way built on filled or compacted soil or rock material
    - Construction sites where construction has either stripped the topsoil or where construction has been completed within the last 5 years but the area has not been revegetated (Ute ladies'-tresses orchid has been found in some heavily disturbed sites where hydrology is appropriate, such as revegetated gravel pits, heavily grazed riparian edges and pastures, and along well-traveled trails developed on old berms)
    - Stream banks steep, transition from stream margin to upland areas abrupt
    - Site characterized by standing water with cattails, bulrushes, and other emergent aquatic vegetation- note margins may be suitable habitat
    - Riparian areas, stream banks, or wetlands vegetated with dense rhizomatous species such as reed canary grass (*Phalaris arundinacea*),tamarisk or salt cedar (*Tamarix ramosissima*), teasel (*Dipsacus sylvestris*), common reed, (*Phragmites australis*), or saltgrass (*Distichlis spicata*)
    - Riparian areas overgrazed or otherwise managed such that the vegetation community is comprised of upland native or weedy species or is unvegetated. (the orchid can tolerate rather extreme overgrazing as long as it has not resulted in a drop in the water table as indicated by conversion of the riparian or wet meadow pasture vegetation community to mostly upland species)
    - Potential habitat is no longer in a natural condition, for example, has been converted to agricultural uses and is now plowed and cropped, or has been converted to lawns or golf courses (wet meadow pastures with a mix of native and non-native pasture grasses, including pastures that are regularly hayed, are suitable potential habitat.
    - Wetland is a brackish playa or pothole not fed by springs or not in the floodplain of or hydrologically connected with a riparian system or other source of fresh water (fens and wetlands associated fresh water springs are suitable potential habitat).

- ***Ute Ladies'-Tresses Conservation Measure 2:*** Surveys to determine Ute ladies'-tresses habitat occupancy will be conducted in suitable habitat. The following requirements for inventories apply:

- Must be conducted by qualified individual(s) and according to 1992Interim Survey Requirements for Ute ladies'-tresses Orchid (FWS 1992)
- Will not occur in areas where existing roads would be used without improvement
- Will be conducted at a time when the plant can be detected and during appropriate flowering periods
- Will be conducted for at least I year prior to any temporary disturbance in suitable habitat (e.g., overland travel to access geotechnical boring location). Two additional years of surveys would be conducted after the temporary disturbance for a total of 3 years of surveys.
- Three consecutive years of surveys will be required prior to any permanent disturbance (e.g., road widening, new road construction, placement of other infrastructure)

- ***Ute Ladies'-Tresses Conservation Measure 3:*** For any activities associated with the geotechnical investigation the following requirements apply:
  - All work within 300 feet of occupied Ute ladies' tresses habitat will be moved or abandoned.
  - All work within 300 feet of suitable habitat will be monitored by a biological monitor to ensure compliance with all applicable conservation measures.
  - Existing access roads within 300 feet of suitable Ute ladies'-tresses habitat may be used, but not improved.
- ***Ute Ladies'-Tresses Conservation Measure 4:*** Design Project infrastructure to minimize direct or indirect impacts on suitable habitat both in and downstream of the Project area:
  - Alteration and disturbance of hydrology will not be permitted.
  - Disturbance footprint size should be reduced to the minimum needed, without compromising safety.
  - New access routes for the Project should be limited.
  - Roads and utilities should share common right-of-ways where possible.
  - Rights-of-way widths should be reduced and the depth of excavation needed for the road bed should be minimized,
  - Construction and right-of-way management measures should avoid soil compaction that would impact Ute ladies' tresses habitat.
  - Offsite impacts or indirect impacts should be avoided or minimized (i.e., install berms or catchment ditches to prevent spilled materials from reaching occupied or suitable habitat through either surface or groundwater).
  - Signing should be placed to limit off-road travel in sensitive areas.
  - Vehicles and equipment should be made to stay on designated routes and other cleared/approved areas.
  - All disturbed areas will be revegetated with species approved by FWS and BLM botanists.
- ***Ute Ladies'-Tresses Conservation Measure 5:*** Project-related construction activities will avoid individual plants by a minimum of 300 feet. In proximity to occupied habitat, Project infrastructure will be designed to avoid direct disturbance and minimize indirect impacts on populations and to individual plants:
  - Follow recommendations for Project design in suitable habitats.
  - Create designs that will avoid altering site hydrology and concentrating water flows or sediments into occupied habitat.

- Minimize the disturbed area through interim and final reclamation. Reclaim disturbance following construction to the smallest area possible.

- ***Ute Ladies'-Tresses Conservation Measure 6:*** In proximity to occupied habitat, all construction activities will be overseen by a biological monitor to ensure compliance with all applicable conservation measures. The biological monitor will also:
  - Make areas for avoidance visually identifiable in the field (e.g., flagging, temporary fencing, rebar, etc.) before and during construction.
  - Provide the FWS and BLM with a post-construction report of compliance, impacts, and extent of impacts on Ute ladies'-tresses no later than 4 months upon Project completion.
- ***Ute Ladies'-Tresses Conservation Measure 7:*** The following restrictions apply to herbicide use in suitable or occupied Ute ladies'-tresses habitat:
  - No aerial or broadcast herbicide treatments will be applied for vegetation management within 2,500 feet of suitable or occupied Ute ladies'-tresses habitat.
  - For noxious weed control within 2,500 feet of suitable or occupied Ute ladies'-tresses habitat, manual spot treatments (i.e. backpack sprayers) shall be used.
  - All those involved in the herbicide application shall be accompanied by a qualified botanist/ecologist familiar with Ute ladies'-tresses to help herbicide applicators identify Ute ladies'-tresses and avoid impacts on individual plants.
  - Treatments would not be done when wind speeds exceed 6 miles per hour.
  - Drift reducing agents shall be used when practical.
  - A reduced application rate would be used.
  - Pump pressure would be reduced, per label instructions.
  - Droplet size would be increased to the largest size possible while still effectively covering the target vegetation. This could be accomplished using larger nozzles or reduced pressure.
  - Herbicides shall be stored in spill proof containers away from special status plant habitats.
- ***Ute Ladies'-Tresses Conservation Measure 8:*** Notify the FWS immediately if any Ute Ladies' tresses are located during surveys or monitoring. In the event that Ute Ladies tresses are located, additional discussions between the BLM and FWS will be conducted to review site plans and ensure that the appropriate avoidance measures are implemented.