APPENDIX B
PLAN OF DEVELOPMENT

Plan of Development

Gateway West Transmission Line Project

VOLUME I

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ACRONYMS AND ABBREVIATIONS

AC	alternating current
ACHP	Advisory Council on Historic Preservation
BLM	U.S. Department of the Interior, Bureau of Land Management
BMPs	best management practices
BOR	U.S. Department of the Interior, Bureau of Reclamation
CIC	Compliance Inspection Contractor
Companies	PacifiCorp, dba Rocky Mountain Power, and Idaho Power Company
CWA	Clean Water Act
EHS	extra high strength
EHV	extra high voltage
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency, Regions 8 and 10
EPM	environmental protection measure
EPC	Engineering, Procurement, and Construction
EPP	Environmental Protection Plan
USFS	U.S. Department of Agriculture Forest Service
GIS	geographic information system
kV	kilovolt
MW	megawatt
NERC	North American Electrical Reliability Corporation
NFS	National Forest System
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NTP	Notice to Proceed
OATT	Open Access Transmission Tariff
POD	Plan of Development
Project	Segments 1 through 4 of the Gateway West Transmission Line Project
ROD	Record of Decision
RMP	Resource Management Plan
ROW	right-of-way
SUA	Special Use Authorization
UPPR	Union Pacific Railroad
USACE	U.S. Department of Defense, Army Corps of Engineers, Omaha District, Walla Walla District
USFWS	U.S. Fish and Wildlife Service, Regions 1 and 6
WDEQ	Wyoming Department of Environmental Quality
WECC	Western Electricity Coordinating Council
WWE	West-wide Energy

1.0 INTRODUCTION

1.1 Introduction

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies) are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts (MW) of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multipurpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation in Wyoming and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II – POD Map Sets 1 and 2. This POD was prepared for Segment D because it will be constructed first; a revised POD will be prepared for Segment E to support issuance of Notices to Proceed (NTPs) to construction of that segment.

The Companies applied to the BLM for a right-of-way (ROW) grant to use the National System of Public Lands for portions of the Project on May 7, 2007. The original application was revised in October 2007, August 2008, May 2009, and January 2010 to reflect changes and refinements in their proposed Project and in response to feedback from the public regarding routing alternatives. This application was assigned the case file numbers of IDI-35849 for Idaho and WYW-174598 for Wyoming. The Companies

applied to the BOR for a ROW grant in January 2011 and were assigned case file number 13-LM-41-0290 by the BOR.

1.2 Purpose and Applicability of the Plan of Development

This POD outlines the stipulations and mitigation measures identified in the Environmental Impact Statement (EIS) that must be followed during construction, operation, and maintenance of the Project. The BLM is the lead federal agency for this Project. The POD is intended to be used Project-wide as (1) a summary of Project environmental requirements and protection measures, and (2) a description of the processes and procedures that will be used to ensure compliance (including the requirements of the U.S. Fish and Wildlife Service, BLM, BOR, USFS, and other federal, state, and/or local agencies) as appropriate.

The POD will be an enforceable stipulation of the ROD and the BLM ROW grant. The BOR and USFS may choose to make the POD or a similar document enforceable as part of the ROD, ROW grant or special use authorization (SUA). The POD applies not only to construction of the Project, but also to the operation and maintenance phase of the Project.

It is understood the BLM, BOR, and USFS do not have the authority to enforce the POD, including EPMs identified in the POD, on state and private land. However, on state and private land, BLM, BOR, and USFS responsibilities will include inspection and monitoring of preconstruction and construction activities, documentation of Project disturbance on all lands analyzed in the EIS, and the enforcement of requirements related to BLM and USFS responsibilities under the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). In addition, the BLM, BOR, and USFS do expect the POD, including EPMs identified in the POD, be implemented as applicable over the entire length of the Project, regardless of jurisdiction. As such, all EPMs identified, as applicable in the POD should be adhered to during all of the phases of the Project.

With this understanding, the Companies intend to apply Project EPMs as described below, unless otherwise indicated in writing by the land administrator or landowner:

- In Wyoming, EPMs will be applied to all land jurisdictions except as follows:
    - Proposed substation and regeneration sites located on private land unless they are standard EPMs of the Companies;
    - EPMs that are only applicable to a specific BLM Field Office;
    - EPMs that are only applicable to National Forest System (NFS) lands; and
    - Private property if different practices are requested by the property owner and do not violate the law.
- In Idaho, EPMs will be applied based on ownership as identified in Appendix Z of the POD except as follows:
    - Proposed substation and regeneration sites located on private land unless they are standard EPMs of the Companies; and

- Private property if different practices are requested by the property owner and do not violate the law.

It is important to note that the description of environmental protection plans (EPPs) and measures contained herein take precedence over any other mention of EPMs. In addition; detailed equipment specification and construction requirements contained elsewhere take precedence over the descriptions contained herein.

1.3 Organization of the Plan of Development

The POD is organized into two major volumes. Volume I contains Sections 1 through 6 and the appendices. Volume II – POD Map Sets 1 and 2, includes engineering, mitigation, and environmental mapping, which support information presented in Volume I. Following is an overview of the information contained in these two volumes.

1.3.1 Volume I

Volume I of the POD is intended to provide the reader with a general overview of the Project and key elements of the POD (Sections 1 through 6). While Sections 1 through 6 provide general information, the Appendices provide detailed information regarding the required mitigation measures, protocols, and procedures for the construction, operation, and maintenance of the transmission line and ancillary facilities, along with the mapping materials in Volume II. The Appendices have been designed to serve as stand-alone documents that may be readily updated and refined. Following is a summary of the information and materials presented in Volume I of the POD.

1.3.1.1 Sections 1 through 6

Sections 1 through 6 include the following information:

Section 1 – Introduction: Section 1 introduces the Project; discusses the purpose and organization of the POD; explains the POD's relationship to other documents; and lists required authorizations, permits, and approvals required for construction.

Section 2 – Purpose and Need: Section 2 describes the purpose and need for the transmission line segments between existing and proposed substations.

Section 3 – Roles and Responsibilities: Section 3 introduces the roles and responsibilities of the Project team and discusses Project communications and notification procedures.

Section 4 – Project Description: Section 4 describes the Project facilities (ROW requirements, structures, foundations, conductors, access roads, etc.), land requirements, construction disturbance, and information related to the maintenance and operation of the Project once construction is complete.

Section 5 – Environmental Protection Plans and Documents: Section 5 describes the EPPs and documents included as appendices to this POD that the Companies will use to ensure environmental protection during construction, operation, and maintenance. Each plan includes EPMs. Table 5-1 - Environmental Protection Plans and Documents describes the purpose of each plan and document. Table 5-2

– Mapping Requirements to be completed by the Construction Contractor describes EPP mapping requirements.

Section 6 – Literature Cited: Section 6 provides the literature cited in preparing the POD.

1.3.1.2 Appendices

Appendices A - Transmission Line and Substation Location Maps and B - Transmission Line and Substation Components include overview maps and a description of transmission line and substation components. Appendices C - Environmental Compliance Management Plan through S - Cultural Resources Protection Plan are the EPPs. Appendices T - Preconstruction Checklist, through Z - Environmental Protection Measures, include information that will guide construction, operations, and maintenance.

1.3.2 Volume II

Two map sets are included in Volume II. These maps contain regional to detailed information, including site-specific instructions to guide the construction of the transmission line and associated facilities as described below.

1.3.2.1 Map Set 1 – 1:36,000 Scale Project Maps

The maps (U.S. Geological Survey 7.5-minute topographic quadrangles, scale of 1:36,000 [1 inch = 3,000 feet]) in Map Set 1 include panels that illustrate the location of facilities at a large scale for the entire Project, including the location of tower sites, pulling and tensioning sites, multipurpose areas, and access routes (including all approved potential ingress and egress points to the ROW).

1.3.2.2 Map Set 2 – 1:4,800 Scale Project Maps

The maps (map, scale of 1:4,800 [1 inch = 400 feet]) in Map Set 2 include panels that show (1) the ROW in detail, including the specific location of facilities (e.g., structures, multipurpose areas, pulling and tensioning sites, and access roads) and environmentally sensitive areas in the immediate vicinity; and (2) seasonal constraints that could affect the timing of construction. Each of these detailed panel maps is numbered and shown on an Index Map.

1.4 Relationship to Other Environmental Documents

This POD includes measures for avoidance, minimization, and mitigation of environmental impacts resulting from the implementation of this Project as identified in the EIS and approved in the BLM, BOR, and USFS Records of Decision (RODs). This POD incorporates the various regulatory approvals, permits, and other authorizations that contain environmental requirements including those measures stipulated in Resource Management Plans for the BLM Field Offices and Forest Plans for the National Forests listed in Table 1-1 – BLM BLM and USFS Land Use Plan Status along the Project Route.

Table 1-1. BLM and USFS Land Use Plan Status along the Project Route

Segment	Administrative Unit	Applicable Plan Name	Plan Year
Wyoming			
1W(a), 1W(c)	Casper BLM Field Office	Casper RMP	2007
1W(a), 1W(c)	Medicine Bow-Routt National Forests	Medicine Bow National Forest Revised Forest Plan	2003
1W(a), 1W(c), 2	Rawlins BLM Field Office	Rawlins RMP	2008
3, 4	Rock Springs BLM Field Office	Green River RMP	1997
4	Kemmerer BLM Field Office	Kemmerer RMP	2010
Idaho			
4	Pocatello Field Office	Pocatello RMP	2012
4	Caribou-Targhee National Forest	Revised Forest Plan for the Caribou National Forest	2003

BLM – Bureau of Land Management; RMP – Resource Management Plan

The POD has been developed for the selected route and will be an enforceable stipulation of the ROD and the BLM ROW grant. The BOR and USFS may choose to make the POD or a similar document enforceable as part of the ROD, ROW grant or SUA.

In addition to including mitigation measures, stipulations, and procedural methods, the POD will identify and depict site-specific construction actions and Project facilities, including structure locations, access roads, temporary work areas, multipurpose areas, and batch plants.

Additions and/or amendments to the Volume 1- POD appendices and Volume II – POD Map Sets 1 and 2 are anticipated as a part of detailed design, preconstruction resource surveys, and/or construction. These additions or amendments will be initiated by the Construction Contractor and reviewed and approved by the Companies, as well as BLM, BOR, and USFS as applicable, prior to implementation. After commencement of construction, variances or deviations will be reviewed and approved pursuant to the procedures in Appendix C – Environmental Compliance Management Plan, of this POD.

1.5 Federal, State, and Local Permits

Table 1-2 – Major Permits, Approvals, and Consultations for the Project presents a list of the major federal, state, and local permits and approvals that could be required for the duration of the Project. Table 1-2 – Major Permits, Approvals, and Consultations for the Project is not intended to be an exhaustive permit list and additional permits could be required to support construction of the Project.

Table 1-2. Major Permits, Approvals, and Consultations for the Project

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
Federal		
Advisory Council on Historic Preservation (ACHP)	Section 106 Consultation, National Historic Preservation Act (NHPA)	Has the opportunity to comment if the Project may affect cultural resources that are either listed on or eligible for listing on the National Register of Historic Places (NRHP).
U.S. Department of Agriculture, Forest Service (USFS)	Temporary Use Permit	Consider issuance of a Temporary Use Permit for temporary activities in a construction right-of-way (ROW) on National Forest System (NFS) lands.
	Special Use Authorization (SUA)	Consider issuance of an SUA for use of NFS lands for construction and operation of electric transmission lines and associated facilities.
	Operation and Maintenance Plan	Consider approval of detailed Operations and Maintenance Plan.
	Notice to Proceed	Following issuance of the Special Use Authorization and approval of the Construction, Operations, and Maintenance Plan on NFS lands, consider issuance of a Notice to Proceed with Project development and mitigation activities.
U.S. Department of Defense, Army Corps of Engineers (USACE), Omaha District, Walla Walla District	Section 404, Clean Water Act Permit	Consider issuance of a Section 404 permit for the placement of dredge or fill material into all waters of the United States, including jurisdictional wetlands.
U.S. Department of the Interior, Bureau of Land Management (BLM)	Antiquities and Cultural Resource Use Permit	Consider issuance of antiquities and cultural resources use permit to conduct surveys and to excavate or remove cultural resources on federal lands.
	Various Resource Management Plans	Consider amending the plans.
	ROW Grant	Consider issuing long-term ROW grant for operations and maintenance of those portions of the Project that would encroach on the National System of Public Lands, including easements across federally owned waterways.
	Short-Term ROW Grant	Consider issuance of a short-term ROW grant for temporary activities in the construction ROW, on lands leading into the ROW, and associated areas such as multipurpose areas that are within the National System of Public Lands.
	Plan of Development (POD)	Consider approval of detailed POD.
	Notice to Proceed	Following issuance of a ROW grant and approval of a POD, consider issuance of a Notice to Proceed with Project development and mitigation activities.

Table 1-2. Major Permits, Approvals, and Consultations for the Project (continued)

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
U.S. Department of the Interior, Bureau of Reclamation (BOR)	ROW Grant	Consider issuing a ROW grant for lands withdrawn for the purposes of the Seedskadee Project.
U.S. Department of Transportation, Federal Highway Administration	Encroachment Permit	Consider issuance of permit for transmission line crossing of federally funded highways (typically delegated to the state department of transportation).
U.S. Environmental Protection Agency, Regions 8 and 10 (EPA)	Section 401, Clean Water Act (CWA) Water Quality Certification	In conjunction with states, consider issuance of water use and crossing permits.
	Section 402, CWA, National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity for Idaho	Review and issue NPDES permit for discharge of Stormwater in Idaho. In Wyoming, NPDES permitting is delegated to the Wyoming Department of Environmental Quality (see below).
	Section 404, CWA	Review CWA, Section 404 applications for dredge-and-fill applications for the USACE with 404(c) veto power for permits issued by the USACE.
U.S. Fish and Wildlife Service (USFWS), Regions 1 and 6	Section 7 Consultation, Biological Opinion (Endangered Species Act)	Consider lead agency finding of impact on federally listed or proposed species. Provide Biological Opinion if the Project is likely to adversely affect federally listed or candidate species or their habitats.
	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to wildlife resources.
	Migratory Bird Treaty Act	Provide comments for the protection of migratory birds.
	Bald and Golden Eagle Protection Act	Provide comments for the protection of eagles.
Federal Aviation Administration	Notice of Obstruction, Part 77 Objects Affecting Navigable Air Space	Comply with regulation covering navigable air space
Wyoming		
All state agencies	Compliance with Executive Order (EO) 2011-5	Requires that all agencies demonstrate that activity proposed for permitting be compliant with the requirements of the EO in sage-grouse core areas.
Wyoming Department of Environmental Quality (WDEQ) and the Wyoming Industrial Siting Council	Industrial Siting Permit Wyoming Industrial Information and Siting Act under Chapters 1 and 2, Rules and Regulations of the Industrial Siting Council	Consider approval of construction and siting of projects with construction cost of $176 million or more or 160 kV or greater.
WDEQ Air Quality Division	Construction Permit	Consider measures to control fugitive dust emissions during construction.

Table 1-2. Major Permits, Approvals, and Consultations for the Project (continued)

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
WDEQ Water Quality Division	Section 401, CWA, Water Quality Certification	Consider certification of a 404 permit issued by the USACE as consistent with state law and Section 401.
	Section 402, CWA, NPDES General Permit for Stormwater Discharges Associated with Construction Activity for Wyoming	Review and issue NPDES permit for discharge of stormwater.
Wyoming Game and Fish Department	Potential Project Impacts to Fish and Wildlife Species and Their Habitat	Coordinate with BLM, USFS, and USFWS on wildlife issues/impacts associated with the Project.
Wyoming State Historic Preservation Office	Section 106 Consultation, NHPA	Consult with the BLM, other land management agencies, and others regarding activities potentially affecting cultural resources.
Wyoming Office of State Lands and Investments	Easement across State Lands	Consider issuance of a ROW across state lands.
Wyoming Public Service Commission	Certificate of Public Convenience and Necessity	Consider issuance of a certificate to allow construction of a public utility, including transmission lines.
Wyoming Department of Transportation	Encroachment Permit	Consider issuance of permit to cross or bore under state highways or be within a state highway ROW.
Various (may also require federal and county approvals)	Explosives Permit	Consider issuance of a license to store and use explosives.
Idaho		
Idaho Department of Environmental Quality	Fugitive Dust Control Plan	Consider measures to control fugitive dust emissions at each construction site.
	Section 401, CWA, Water Quality Certification	Consider certification of a 404 permit issued by the USACE as consistent with state law and Section 401.
Idaho Department of Transportation	Encroachment Permit	Consider issuance of permit to cross or bore under state highways or be within a state highway ROW.
Idaho Public Utilities Commission	Certificate of Public Convenience and Necessity	Consider issuance of a certificate to allow construction of a public utility, including transmission lines.
Idaho State Historic Preservation Office	Section 106 Consultation, NHPA	Consult with the BLM, other land management agencies, and others regarding activities potentially affecting cultural resources.
Idaho Department of Lands	Lease on Endowment Trust Lands	Consider issuance of ROWs across state lands.
Idaho Department of Fish and Game	Potential Project Impacts to Fish and Wildlife Species and Their Habitat	Coordinate with BLM, USFS, and USFWS on wildlife issues/impacts associated with the Project.
Idaho Department of Water Resources	Stream Channel Alteration Permit and Wetland Removal Fill Permit (IC Title 42 Chapter 38)	Consider alteration of any stream channel or wetland.

Table 1-2. Major Permits, Approvals, and Consultations for the Project (continued)

Regulatory Agency	Required Permit, Approval, or Consultation	Agency Action
Various (may also require federal and local approvals)	Explosives Permit	Consider issuance of a license to store and use explosives.
Local and County (Idaho and Wyoming)		
County Commissioners	Conditional Use Permits	Consider issuance of conditional use permits for construction of the transmission line (varies by county).
Planning Department	Temporary Use Permit, Grading Permit	Consider issuance of Temporary Use Permit for material and contractor yards and a grading permit for noxious weed control coordination.
Public Works Department	Encroachment Permit	Consider issuance of an encroachment permit for new access roads where they intersect with existing county roads.
	Road Crossing Permit, Road Maintenance Agreement	Consider issuance of road crossing permit and road maintenance agreement for overhead transmission line.

2.0 PURPOSE AND NEED OF GATEWAY WEST

The Companies are electric utilities that transmit electricity via a grid of transmission lines located throughout a six-state region. As essential service providers, the Companies are required to operate under the oversight and regulatory controls of the Public Service Commission of Utah, the Wyoming Public Service Commission, and the Idaho Public Utilities Commission. Although the objectives of these multiple commissions vary somewhat, they do share a common goal of ensuring utilities such as the Companies provide safe, reliable, adequate, and efficient delivery of electricity.

The Companies are also public utilities under the jurisdiction of the Federal Energy Regulatory Commission. The Companies are obligated to expand their transmission system to provide requested firm transmission service and to construct and place in service sufficient capacity to reliably deliver resources to customers requesting service and existing customers as provided in their Open Access Transmission Tariff (OATT) (FERC 2008). The Companies' commitment under the OATT also requires planning for the expansion of the system to ensure that their transmission systems meet industry, regulatory, and reliability standards.

The proposed 10 transmission line segments and 12 substations that comprise Gateway West are needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 MW of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West is independent of, and will be built regardless of, any particular new generation project. The transmission grid of which it will become a part can be thought of in terms of hub and spokes, with a backbone connecting to the hubs. Each substation is a hub and receives or sends electricity along the spokes. For this system to work, a backbone of high-capacity transmission lines is needed to connect the hubs and transport the electricity from where it is or can be generated (in this case, mostly Wyoming but also Idaho), to where it is needed (in this case, mostly Idaho and Utah, though other markets may also be served).

Segment D will connect eight substations, which are essential control points for the route. Six of the substations are in service now and two are proposed as part of this Project. Segment D substation purposes are described in Table 2-1 – Segment D Substations. The purposes of the individual transmission line segments are described in Table 2-2 – Segment D Transmission Line Segments.

Table 2-1. Segment D Substations

Substation	Description	Purpose
Windstar	Existing: interconnection- and generation-driven	The purpose of this substation is to integrate future wind and thermal resources with the existing transmission system by adding one 230-kilovolt (kV) transmission line into the substation. The Project starts at this substation because of the recent large development of nearby energy sources needing transmission to points west, including 200 megawatts (MW) integrated at the Windstar 230-kV Substation, Glenrock 1 & III – 138.5 MW, Rolling Hills – 99 MW, Three Buttes – 99 MW, and Casper Wind – 17 MW.
Dave Johnston Power Plant	Existing: interconnection- and generation-driven	Work inside the existing 230-kV yard will consist of rebuilding bus breakers and switches to increase capacity to match the rebuilt Segment 1W(c). No ground-disturbing activity outside of the existing fence line will be necessary.
Heward	Existing: interconnection-driven	This new substation will be constructed immediately adjacent to the Difficulty Substation. Difficulty must be kept in service while Segment 1W(c) is reconstructed, requiring the additional bus construction to be conducted adjacent to the existing substation. Construction of Heward will allow the Companies to control the operation of the new buses, essential for reliability of the reconstruction.
Shirley Basin	Existing: interconnection-driven	Shirley Basin is an existing interconnection point for an existing wind energy facility. Segment 1W(c) must interconnect here during the reconstruction of the line and the communication system must be improved. However, there will be no ground disturbance anticipated outside of the fence line.
Aeolus	Proposed: part of the Project, generation-driven	This substation is intended to serve high wind areas identified in portions of Wyoming and will be the location for interconnecting new wind-driven sourced energy. The Aeolus 230-kV substation will be integrated into the Companies' transmission system by looping the Dave Johnston – Heward – Shirley Basin – Miners 230-kV line into Aeolus Substation. Aeolus will be used to interconnect future wind generation projects and be interconnected by a 500-kV connection to the proposed Anticline Substation.
Anticline	Proposed: part of the Project, generation-driven	New 500-kV transmission lines at the Aeolus and Populus Substations will interconnect to the existing transmission system in the vicinity of the Jim Bridger Power Plant by constructing a new substation nearby. The new station will also be connected to the power plant by a new 345-kV transmission line. The purpose of the proposed substation is to support the existing thermal generation hub as well as an expanded hub for new wind resources expected to be sited in the area.
Jim Bridger Power Plant 345-kV	Existing: interconnection- and generation-driven	This substation will be expanded to connect the Jim Bridger Power Plant with the new transmission line from the Anticline Substation. No new generation will be added at the Jim Bridger Power Plant as a result or as part of this Project.
Populus	Existing: interconnection- and generation-driven	This substation will interconnect with the proposed 500-kV transmission line from Aeolus Substation (Segment D) and Borah and Cedar Hill Substations (Segment E), the existing Jim Bridger West 345-kV system, and the 345-kV transmission lines running north-south. The north-south 345-kV transmission lines (not part of Gateway West) begin at the Populus Substation (near Downey, Idaho), run south to the Wasatch Front, and transport new resources south to the Wasatch Front demand centers.

Table 2-2. Segment D Transmission Line Segments

Transmission Line Segment	Purpose
Segment 1W—Windstar to Aeolus, single-circuit 230-kV and Dave Johnston to Aeolus, rebuilt 230-kV line	Transport existing and new resources to load centers farther west via interconnection at Aeolus Substation. This line also represents the Companies' portion of a future 230-kV network of lines that are required to integrate other projects in areas of high wind potential.
Segment 2—Aeolus to Creston[1/], single-circuit 500-kV line	Transport new resources to load centers farther west.
Segment 3—Creston[1/] to Anticline, single-circuit 500-kV line	Transport new resources to load demand centers farther west.
Segment 3A—Anticline to Jim Bridger 345-kV	Provide for bidirectional transfer of power and integration of Gateway West by providing an intermediate tie line with the existing high voltage (EHV) system at Jim Bridger Substation.
Segment 4—Anticline to Populus, single-circuit 500-kV line	Transport new resources to load demand centers farther west and interconnect with existing systems.

1/ Creston Substation has been deleted from the Project. The location of the Creston Substation is now used as the dividing point between Segments 2 and 3.

3.0 ROLES AND RESPONSIBILITIES

3.1 Roles and Responsibilities

The various parties involved with the construction, operation, and maintenance of the Project include the Companies, BLM, USFS, BOR, the third-party Compliance Inspection Contractor (CIC), and the Companies' Construction Contractor. Other subcontractors may be engaged, as needed.

3.1.1 Rocky Mountain Power and Idaho Power Company

The Companies are responsible for the administration of the ROW and coordination between the Project engineer and Construction Contractor. The Companies and their Construction Contractor will be responsible for all activities associated with the construction, operation, and maintenance of the transmission line and ancillary facilities in a manner that complies with the conditions outlined in the BLM and BOR ROW grants, the USFS SUA, and other required permits listed in Table 1-2 – Major Permits, Approvals, and Consultations for the Project. The Companies will be the ultimate authority for their contractors; however, for execution purposes of this document, it will refer specifically to the Construction Contractor when needed to define their activities.

To help ensure construction activities are conducted in a manner that complies with all federal, state, and local regulations, the Construction Contractor will contract a multi-disciplinary team of environmental specialists and inspectors to work jointly and cooperatively with the CIC (Section 3.1.3 – Compliance Inspection Contractor and Appendix C– Environmental Compliance Management Plan).

3.1.2 Federal Land Management Agencies

There are 203.9 miles of the transmission line route that cross federal land administered by the BLM (187 miles), BOR (3.2 miles), and the USFS (13.7 miles). Each agency has designated an Authorized Officer who will provide oversight for the Project on the lands they administer. Each Authorized Officer will be responsible for administering and enforcing ROW grant and/or SUA provisions for their respective agencies.

Each Authorized Officer also will be responsible to ensure stipulations and mitigation measures included in the POD are adhered to during Project construction, operation, and maintenance. The Authorized Officer also will be responsible for written stop- and resume-work orders, as applicable, and resolving any conflicts that arise relating to the Project on the lands they administer. Compliance will be monitored by the appropriate designees of the Authorized Officers and resource specialists (as needed), for their respective lands, in conjunction with the CIC. The process by which the BLM, BOR, USFS, and Companies' Construction Contractor conduct environmental monitoring, compliance, and reporting is outlined in Appendix C – Environmental Compliance Management Plan of this POD.

The BLM and BOR ROW grants will include NTPs, which represent the mechanism that will allow Gateway West the ability to proceed to the construction phase. However, the NTPs will typically contain stipulations that must be completed before construction activities are allowed to move forward. NTP stipulations will typically require approval

by the BLM or BOR Authorized Officer and this will be achieved by the issuance of a work authorization. A work authorization will be issued when any special stipulation(s) included in an NTP has been satisfied.

On USFS-administered land, the receipt of the USFS SUA will be permission for work to begin on NFS land.

3.1.3 Compliance Inspection Contractor

The CIC will represent the BLM, BOR, and USFS during the construction and reclamation phases of the Project to ensure (1) compliance with the BLM and BOR ROW grants and USFS SUA and (2) environmental impacts associated with the Project do not exceed estimates disclosed in the EIS and approved by the BLM, BOR, and USFS in their RODs.

The CIC shall work under the direct supervision and control of the BLM, the lead federal agency, specifically the BLM Authorized Officer or his/her designated representative. The BLM will coordinate with other agencies with jurisdiction, where appropriate. The CIC shall not take any direction with respect to the manner of conducting monitoring from the Companies or their Construction Contractor. The CIC's primary role is to observe work activities; verify, document, and monitor compliance; and bring non-compliant situations to the attention of the appropriate party and offer recommendations on how to prevent non-compliance prior to commencement of work. The responsibilities of the CIC are outlined in detail in Appendix C – Environmental Compliance Management Plan (Section 3.2.3 – Compliance Inspection Contractor).

3.1.4 Construction Contractor

The Companies will retain one or more Construction Contractors who will be responsible for the final engineering design, procurement, construction, testing, and reclamation of the transmission line and substations. The Construction Contractor will construct the transmission line and ancillary facilities, including construction of new or improved roads (as authorized), communication system, and temporary work areas associated with construction activities and communication facilities. The Construction Contractor also will be responsible for addressing reclamation activities, as well as addressing all environmental protection stipulations.

The Construction Contractor will be contractually bound to comply with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of Gateway West. The relationship of roles and responsibilities of the various parties involved in the construction, operation, and maintenance of the Project is summarized in Table 3-1 – Relationship of Roles and Responsibilities of Various Parties.

Table 3-1. Relationship of Roles and Responsibilities of Various Parties

Role	Responsibilities
BLM/BOR/USFS	Authorizing agencies: Compliance with the provisions of the ROW grants and SUA
CIC	On-site compliance inspection and monitoring for the authorizing agencies
Companies	The Companies through their contractor will uphold, document, and manage environmental compliance with the terms specified in the BLM and BOR ROW grants and USFS SUA; the POD; landowner agreements; and all federal, state, and local permits
Construction Contractor	Implementation and compliance of the POD

3.1.5 Communication Procedures and Notification Protocols

Timely, clear, and effective communication between all parties mentioned above is a critical component to the success of the Project. Communication protocols related to environmental compliance monitoring, reporting requirements, and Project variance requests are described further in Appendix C – Environmental Compliance Management Plan.

The CIC will develop a Project contact directory that will be updated by all parties regularly to provide a convenient reference. This contact list will include the name, agency, office phone number, cell phone number, and email address of those individuals working on the Project; the contact list will be provided to the BLM, BOR, and USFS and updated regularly.

The Construction Contractor will be responsible for maintaining a list of all emergency notification contacts and numbers (refer to Appendix Q – Framework Construction Emergency Preparedness and Response Plan). The Companies will be responsible for notifying private landowners and county and city officials of upcoming construction activities. After construction, the Companies will be responsible for maintaining the contact list and for all notifications required during the operation and maintenance of the Project in accordance with Appendix R – Operations, Maintenance, and Emergency Response Plan.

4.0 PROJECT DESCRIPTION

The Project starts in Wyoming at the Windstar Substation and Dave Johnston Power Plant. Segment 1W(a), for the most part, follows or parallels the West-wide Energy (WWE) corridor and an existing 230-kV line. This 230-kV line is the proposed route for reconstruction as Segment 1W(c). Both lines will terminate at the proposed Aeolus Substation. The Project then proceeds as one single-circuit 500-kV line from the Aeolus to the Populus Substation though Segments 2, 3, and 4. The interconnection from Anticline to its neighboring existing substation at the Jim Bridger Power Plant, Segment 3A, is 5.1 miles of 345-kV single-circuit line. The transmission line segments will cross federal, state, and private lands. Table 4-1 summarizes miles crossed by ownership for the Proposed Route. The total length of all 10 Gateway West segments requiring new transmission line construction is approximately 1,000 miles. The ROW width requested for the transmission line is 125 feet for single-circuit 230-kV segments, 150 feet for the 345-kV segment, and 250 feet for single-circuit 500-kV segments.

4.1 Project Overview

Segment D facilities are described in Sections 4.2 – Transmission Line and 4.3 – Substations and include:

- Four transmission line segments, including their associated access roads, multipurpose areas and helicopter fly yards, and other temporary construction ground disturbances;
- Other associated facilities including communication systems and optical fiber regeneration stations;
- Access roads and distribution supply lines where needed for proposed optical fiber regeneration stations;
- Two proposed substations and expansion or modifications at six existing substations; and
- Access roads and distribution supply lines where needed for proposed substations.

Construction and operations methods are summarized in Section 4.4 – Transmission Line and Substation Components and detailed in Appendix B – Transmission Line and Substation Components. EPPs are briefly summarized in Section 5.0 – Environmental Protection Plans and Documents and included as appendices. These plans are considered part of the Project description. Tables 4-2 – Summary of Project Transmission Facilities, and 4-3 – Summary of Substation Facilities, summarize features of the Project.

Due to the broad scope of construction, the varied nature of construction activities, and the geographic diversity of the Project area, the Companies intend to hire one or more contractors to complete transmission line and substation work within the projected timeframe and in accordance with industry performance standards. The Project may involve Engineering, Procurement, and Construction (EPC)[1] contracts with multiple

[1] EPC contract means that the final engineering, all or some of the procurement, and the construction are performed by one contractor.

segments under construction at the same time. Overall, Segment D construction is expected to occur between June 2015 and December 2018, with multiple contractors working concurrently on the separate line segments of the Project in order to meet the planned in-service dates.

Table 4-1. Segment D Summary of Miles and Percent Crossed by Ownership

	Length (Miles)						Percent of Total				
Segment	**BLM**	**NFS[1/]**	**State**	**Private**	**Other[2/]**	**Total**	**BLM**	**NFS**	**State**	**Private**	**Other**
Segment 1W(a) – Windstar to Aeolus	27	2.3	17.5	27	0.1	**73.8**	36.6	3.1	23.6	36.5	0.1
Segment 1W(c) – Dave Johnston to Aeolus	24.7	2.3	16.1	30.4	0.1	**73.6**	33.6	3.2	21.8	41.3	0.1
Segment 2 – Aeolus to Creston	37.6	–	4.7	49.5	0.1	**91.9**	41	–	5.1	53.9	0.1
Segment 3 – Creston to Anticline	22.5	–	1	22.5	–	**45.9**	48.9	–	2.2	48.9	–
Segment 3A – Anticline to Jim Bridger 345-kV	3.2	–	–	1.9	–	**5.1**	63	–	–	37	–
Segment 4 – Anticline to Populus	72	9.1	12.5	100.7	3.3	**197.6**	36.4	4.6	6.3	50.9	1.7
Total Project[3/]	**187**	**13.7**	**51.8**	**232**	**3.6**	**487.9**	**38.3**	**2.8**	**10.6**	**47.6**	**0.7**

1/ Totals reflect mileage crossed on NFS land.
2/ Other includes BOR, U.S. Fish and Wildlife Service, etc.
3/ Totals may not equal 100 percent due to rounding.

Table 4-2. Summary of Project Transmission Facilities

Project Facility	Description
Transmission Line Segments	
Transmission Line Features Common to All Proposed 500-kV Segments	• Three-phase 500-kV construction for all tower designs, conductor spacing and clearances[1/]. • Conductors: Bundled 1949.6 kcmil 42/7 aluminum conductor steel reinforced (ACSR)/TWD "Athabaska/TW", with three subconductors per phase. Non-specular (dull) finish rather than a shiny finish. • Estimated subconductor diameter: 1.504 inches. • Bundle spacing: Distance between subconductors is 18 inches and 25 inches. • Non-reflective, non-refractive insulators. • One optical ground wire (OPGW) containing 48 fibers and with diameter of 0.637 inch on one side of tower. • One extra high strength (EHS) steel overhead ground wire. • Steel overhead ground wire diameter: approximately 0.495 inch. • Minimum ground clearance: 35 feet. • Structure types: lattice steel single-circuit structures. Dulled galvanized steel finish. • Structure height: Single-circuit structure varies between 145 and 180 feet. Average height of 156 feet. • Approximate distance between structures: 1,200 to 1,300 feet. • ROW width for one single-circuit: 250 feet. • The exact quantity, distance between, and placement of the structures will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.
Transmission Line Features for Segment 3A (345-kV)	• Three-phase 345-kV construction for all structure designs, conductor spacing and clearances[1/]. • Conductors: Bundled 1272 kcmil 45/7 ACSR "Bittern" with three subconductors per phase. Non-specular finish. • Estimated subconductor diameter: 1.345 inches. • Bundle spacing: 18 inches and 25 inches. • Non-reflective, non-refractive insulators. • OPGW containing 48 wires and with diameter of 0.465 inch. • One EHS steel overhead ground wire. • Estimated shield wire diameter: approx. 0.495 inch. • Minimum ground clearance: 30 feet. • Structure types: single-circuit steel H-frame structures, dulled galvanized or self-weathering steel. • Above-ground structure height: varies between 80 and 110 feet. • Approximate distance between structures: 800 feet. • ROW width: 150 feet. • The exact quantity, distance between and placement of the structures will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.

Table 4-2. Summary of Project Transmission Facilities (continued)

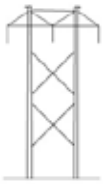
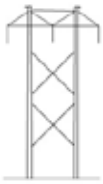
Project Facility	Description
Transmission Line Features Common to All Proposed 230-kV Segments	• Three-phase 230-kV construction for all structure designs, conductor spacing and clearances[1/]. • Non-specular finish applied to conductors. • Bundle spacing: 18 inches vertical with two subconductors per phase. • Non-reflective, non-refractive insulators. • OPGW containing 48 fibers and with diameter of 0.465 inch where communications is required. • Two EHS steel overhead ground wires where communication is not required. One EHS steel overhead ground wire where communication is required. • Estimated shield wire diameter: approx. 0.495 inch. • Minimum ground clearance: 28 feet. • Structure types: single-circuit steel H-frame structures, dull galvanized or self-weathering steel. • Above-ground structure height: varies between 60 and 90 feet. • Approximate distance between structures: 800 feet. • ROW width: 125 feet. • The exact quantity, distance between, and placement of the structures will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, environmental constraints, and economics. Alignment options may also slightly increase or decrease the quantity, location, and height of structures.
Segment 1W(a) – Windstar to Aeolus 	• Single-circuit 230-kV transmission line in one ROW. • Conductors: Bundled 1272 kcmil 45/7 ACSR “Bittern” with two subconductors per phase. • Approximate number of structures: 531. • Line length: Approximately 73.8 miles. • One optical signal regeneration site. • See Figure A-2.
Segment 1W(c) – Dave Johnston to Aeolus 	• Existing single-circuit 230-kV transmission line to be reconstructed. • Conductors: Bundled 1272 kcmil 45/7 ACSR “Bittern” with two subconductors per phase between Dave Johnston Substation and Shirley Basin Substation; approximately 58.8 miles. • Conductors: Bundled 1557 kcmil 45/7 ACSS/TW “Potomac” with two subconductors per phase between Shirley Basin Substation and the proposed Aeolus Substation; approximately 14.8 miles. • Approximate number of structures to be replaced: 547. • Line length: Approximately 73.6 miles. • No optical signal regeneration sites. • See Figure A-2.

Table 4-2. Summary of Project Transmission Facilities (continued)

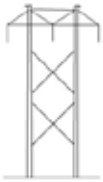
Project Facility	Description
Segment 2 – Aeolus to Creston	• One single-circuit 500-kV transmission line in one ROW. • Approximate number of structures: 390. • Line length: Approximately 91.9 miles. • Two optical signal regeneration sites. • See Figure A-3.
Segment 3 – Creston to Anticline	• Single-circuit 500-kV transmission line in one ROW. • Approximate number of structures: 194. • Line length: Approximately 45.9 miles. • No optical signal regeneration sites. • See Figure A-4.
Segment 3A – Anticline to Bridger 345-kV Yard 	• Single-circuit 345-kV transmission line in one ROW. • Approximate number of structures: 25. • Structure types: single-circuit steel H-frame structures, self-weathering steel. • Line length: Approximately 5.1 miles. • No optical signal regeneration sites. • See Figure A-4.
Segment 4 – Anticline to Populus	• Single-circuit 500-kV transmission line in one ROW. • Approximate number of structures: 856. • Line length: Approximately 197.6 miles. • Three optical signal regeneration sites. • See Figures A-5 and A-6.

Table 4-2. Summary of Project Transmission Facilities (continued)

Project Facility	Description
Communications and Control Facilities – Optical Signal Regeneration Sites	• Regeneration sites are required to amplify the system control and monitoring signals carried over the fiber optic cable attached to the transmission towers. • Up to six regeneration sites will be needed for the Project. Segments requiring regeneration sites are noted in the transmission line section of this summary table. The locations for the regeneration sites are determined after detailed design engineering is completed. • Regeneration sites will be located either within a substation or at another location along the route. • Regeneration sites are located within a 75- by-75-foot fenced area. • Typical building dimensions within the fenced area are 12 feet wide by 32 feet long by 9 feet tall. • The fiber within the OPGW cable supported on the transmission structures is routed in and out of the regeneration site building from the nearest transmission structure either underground or overhead along two independent diverse paths. • Electronic equipment required to support the fiber optic cable installation is located inside the building. • At sites not within a substation, a liquid propane fueled emergency generator will be installed to provide backup power during an outage of the local electric distribution system supply. • Maximum regeneration site spacing is 55 miles or less depending on access and proximity to local electric distribution lines. • The primary siting criteria for a regeneration site are: adjacent to the Project transmission line ROW, proximity to existing low-voltage electric distribution lines to provide power to the facility, and the ability to easily access the site by vehicle.
Distribution Supply Lines	• Distribution line extensions are required to provide operational power and station service power at up to six regeneration sites (locations to be determined during final design). • Typically provided from an existing distribution line located in proximity to the site.

1/ Project design follows the Avian Power Line Interaction Committee recommendations. Details for tower construction and components such as conductor spacing are provided in Appendix B.

Table 4-3. Summary of Substation Facilities

Project Facility	Description
Windstar Substation	• Modification of substation within existing fence line. • Existing access road is gravel and will not need extension for Gateway West. • 230-kV circuit breakers and related switching equipment, bus and support structures, potential and current transformers. • 230-kV line termination structures approximately 70 feet in height. • Control, protection, and communications equipment added to the existing control building. • See Figure A-7.
Dave Johnston Power Plant	• Modification of substation within existing fence line. • Existing access road is adequate. • All construction will be inside the existing fence line. No additional area is required. • 230-kV circuit breakers and related switching equipment, bus and support structures, potential and current transformers. • Existing line termination structures will be used. • Control, protection, and communications equipment added to the existing control building. • See Figure A-8.
Heward Substation	• New station adjacent to of existing Difficulty Substation. • Developed acreage: approximately 5 acres fenced and owned separately from the existing Difficulty substation. • 230-kV circuit breakers and related switching equipment, bus and support structures, potential and current transformers. • 230 kV line termination structures approximately 70 feet in height. • Control, protection, and communications equipment. • Addition of new control building within the substation fenced area. • See Figure A-9.
Shirley Basin Substation	• Modification of substation within existing fence line. • Existing access road is adequate. • All construction will be inside the existing fence line. No additional area is required. • Control, protection, and communications equipment added to the existing control building. • See Figure A-10.

Table 4-3. Summary of Substation Facilities (continued)

Project Facility	Description
Aeolus Substation	• Proposed substation. • Developed acreage: Approximately 100 acres fenced with an improved access road. • Upgrading County Route 121 is needed and will result in approximately 64 acres of construction disturbance and 33 acres of new permanent roadway, including replacement of an existing bridge. • 500-kV and 230-kV circuit breakers and related switching equipment, bus and support structures, 500/230-kV transformer banks, 500-kV shunt reactor banks, 500-kV series capacitor bank, 500-kV and 230-kV shunt capacitor banks, potential and current transformers. • Control, protection, and communications equipment. • 500-kV line termination structures approximately 135 feet in height. • 230-kV line termination structures approximately 70 feet in height. • Addition of new control buildings within the substation fenced area. • New Static Var Compensator occupying 10-15 acres within the substation fenced area, housed in a building that contains power electronic equipment and associated cooling equipment. • See Figure A-11.
Anticline Substation	• Proposed substation. • Developed acreage: Approximately 140 acres fenced with an improved access road. • To access the new 500-kV yard, an existing dirt road about a mile long will be improved with construction of an all-weather surface with improved access approaches, main highway entrance, and Union Pacific Railroad (UPRR) crossing arrangements. • 500-kV and 345-kV circuit breakers and related switching equipment, bus and support structures, 500/345-kV transformer bank, 345-kV phase shifting transformer, 500-kV shunt reactor banks, 500-kV series capacitor bank, and 500-kV shunt capacitor banks, potential and current transformers. • 500-kV line termination structures approximately 135 feet in height. • 345-kV line termination structures approximately 100 feet in height. • Control, protection, and communications equipment. • Addition of new control buildings within the substation fenced area. • See Figure A-12.
Jim Bridger 345-kV Substation	• Expansion of existing substation. • Existing access road is adequate. • Expansion of 345-kV yard by 10 acres. • Additions to Jim Bridger 345-kV yard, including 345-kV circuit breakers and related switching equipment, bus and support structures, potential and current transformers. • Development of a new 345-kV transmission line termination structure approximately 100 feet in height to connect with the proposed line to Anticline Substation. • Relocation of an existing 345-kV shunt capacitor bank within the substation fenced area. • Control, protection, and communications equipment added inside the existing control building. • See Figure A-13.

Table 4-3. Summary of Substation Facilities (continued)

Project Facility	Description
Populus Substation	• Expansion of existing substation. • Developed acreage: increase the fenced area by approximately 80 acres. • Existing access road is adequate. • 500-kV and 345-kV circuit breakers and related switching equipment, bus and support structures, 500/345-kV transformer bank, 500-kV shunt reactor banks, 500-kV series capacitor bank, 500-kV shunt capacitor banks, potential and current transformers. • 500-kV line termination structures approximately 135 feet in height. • Control, protection, and communications equipment. • Addition of new control building within the substation fenced area. • See Figure A-14.
Distribution Supply Lines	• Distribution line extensions are required to provide operational power and station service power at: o Aeolus 500-kV Substation (11 miles across BLM and private lands), needed for construction and possibly for operation. o Anticline 500-kV Substation (3.3 miles across private land). o Heward Substation (new distribution line but same configuration as existing Difficulty Substation distribution line). • Typically provided from an existing distribution line located in proximity to the site. • Not required for modifications at Dave Johnston and Shirley Basin or for expansions at Windstar, Jim Bridger, or Populus.

4.2 Transmission Line

The transmission line is described by segment and numbered sequentially between substations because it connects a series of two proposed and six existing substations. The exception is between Segments 2 and 3 where the formerly proposed Creston Substation was eliminated.

4.2.1 Segment 1W – Windstar/Dave Johnston to Aeolus

Segment 1W is composed of Segments 1W(a) and 1W(c). Both consist of single-circuit 230-kV transmission lines. Segment 1W(a) will be a new transmission line and 1W(c) involves reconstruction of a portion of the existing Dave Johnston – Rock Springs 230-kV transmission line. Reconstruction of the existing transmission line is necessary to increase the load-carrying capacity of this existing line. The existing single conductor per phase will be replaced with two larger conductors per phase, requiring the replacement of all of the existing wood structures with stronger steel-pole, H-frame structures, similar in height and appearance to the existing line. Each single-circuit line will be constructed in a separate ROW with a separation from other transmission lines of 1,500 feet or the matching span if longer to meet reliability criteria. The 230-kV lines will be carried on steel H-frame structures between 60 and 90 feet tall (Appendix B, Figure 2.1-1). Appendix A, Figure A-2 is a map of the Segment 1W routes. Detailed route maps are contained in Volume II. Segment 1W(a) will carry the fiber optic communication system for Segment 1. Because of its length, it needs an optical signal

regeneration site approximately midway along its route. Final locations for the regeneration station will be determined after detailed design engineering is completed.

4.2.2 Segment 2 – Aeolus to Creston

Segment 2 consists of one single-circuit 500-kV transmission line between the proposed Aeolus Substation and the location of the originally planned Creston Substation (hereafter abbreviated as Creston) near Wamsutter, Wyoming. This segment generally follows a combination of the WWE corridor and existing transmission lines. Appendix A, Figure A-3 is a map of Segment 2 between the Aeolus Substation and Creston. Detailed route maps are contained in Volume II.

Segment 2 as proposed will use 500-kV single-circuit lattice towers between 145 and 180 feet tall (Appendix B, Figure 2.1-3). Segment 2 is about 92.0 miles long and therefore will need two optical signal regeneration sites, one site in the area south of Rawlins and another in the general location of Creston. Final locations for regeneration stations will be determined after detailed design engineering is completed.

4.2.3 Segment 3 – Creston to Anticline

Segment 3 has two components: a short 5.1-mile 345-kV interconnection between the existing Jim Bridger 345-kV Substation and the proposed Anticline Substation (Segment 3A; see Section 4.2.4), and a 45.9-mile-long 500-kV line between the terminus of Segment 2 near Creston and the proposed Anticline Substation (called simply Segment 3).

Appendix A, Figure A-4 is a map for Segment 3. Detailed route maps are contained in Volume II. Segment 3 as proposed will use 500-kV single-circuit lattice towers between 145 and 180 feet tall (Appendix B, Figure 2.1-3). Segment 3 (in total) parallels existing transmission lines for 42.1 miles. No optical signal regeneration site is needed.

4.2.4 Segment 3A – Anticline to Bridger

Because Segment 3A is a different voltage from the rest of Segment 3, it is listed and treated separately for the purposes of a technical Project description. A 5.1-mile interconnecting 345-kV transmission line will be constructed between the proposed Anticline Substation and the existing Jim Bridger Substation 345-kV yard to electrically connect the two substations. About 0.5 mile east of the plant access road, this route angles to the northwest on the east side of Deadman Wash before turning west and then south into the existing substation. Appendix A, Figure A-4 is a map for Segment 3A. Detailed route maps are contained in Volume II. The structure type will be steel-pole H-frame (Figure 2.1-2, Appendix B). No optical signal regeneration site is needed.

4.2.5 Segment 4 – Anticline to Populus

One single-circuit 500-kV line is proposed between the proposed Anticline Substation and the existing Populus Substation near Downey in southern Bannock County, Idaho. This segment generally follows an existing transmission line corridor. Appendix A, Figures A-5 and A-6 show the Proposed Route for Segment 4 in Wyoming and Idaho, respectively. Detailed route maps are contained in Volume II.

Segment 4 as proposed will use 500-kV single-circuit lattice towers between 145 and 180 feet tall (Appendix B, Figure 2.1-3). Segment 4 is 197.6 miles long and will require three optical signal regeneration sites spaced approximately equidistant along its route. Final locations for regeneration stations will be determined after detailed design engineering is completed.

4.3 Substations

Segment D includes two proposed substations and expansions or modifications at six existing substations. All Segment D substation construction and operation will be on privately owned land that has been, or will be, acquired in fee by the Companies, except at the Heward Substation. The Heward Substation is located on BLM-administered land and will be covered through the Project's ROW grant from the BLM.

Segment D substation locations and general layouts are shown in Appendix A, Figures A-1 through A-14. Two map sets showing substation details, environmental features, and seasonal constraints are shown in Volume II – POD Map Sets 1 and 2. All construction and construction-related activities will be conducted inside the identified features located on the Volume II – POD Map Sets 1 and 2 mapping. If additional disturbance is necessary in addition to what is identified on the mapping, the Construction Contractor will be responsible to ensure all environmental and permitting approvals, including cultural and biological preconstruction clearance surveys, are obtained prior to any ground-disturbing activities.

4.3.1 Windstar Substation

The Windstar Substation is located on private lands approximately 3.5 miles east of Glenrock, Wyoming, and approximately 1 mile north of the Dave Johnston Power Plant (Appendix A, Figure A-7).

One expanded 230-kV line bay, including 230-kV circuit breakers and associated equipment, bus supports, high-voltage switches, and transmission line termination structure, will be added to the Windstar Substation to electrically terminate the new transmission line from the Aeolus Substation (Segment 1W[a]). Site development will be within the existing substation fence line. The existing access road will be used to reach the site.

4.3.2 Dave Johnston 230-kV Substation

The existing Dave Johnston Substation 230-kV yard (Segment 1W[c]) will be modified to match the proposed capacity of the transmission configuration. Replacement of existing 230-kV circuit breakers, high-voltage switches, tubular and wire bus, and bus supports is required. No expansion of the Dave Johnston Substation is proposed and all construction will take place within the existing substation fence line (Appendix A, Figure A-8).

4.3.3 Heward Substation

The Heward Substation will be developed on BLM-managed land immediately adjacent to the existing Difficulty Substation, which is located about 45 miles from Bessemer Bend and approximately 34 miles north of Medicine Bow, Wyoming. Although

operationally independent of the Difficulty Substation, it is in effect an expansion of an existing use. Heward comprises a new 230-kV yard to the west and immediately adjacent to the existing substation fenced area. The Heward 230-kV yard will be required because the existing 230-kV bus and other equipment within the Difficulty Substation is under-rated for accommodating the additional electrical capacity that will be added by rebuilding and reconductoring a portion of the existing Dave Johnston – Rock Springs 230-kV line between the Dave Johnston Power Plant and the planned Aeolus Substation (Segment 1W[c]). Adding the new 230-kV yard will increase the flow-through capacity of the 230-kV bus and also facilitate maintaining power to Difficulty Substation customers during construction. Site development will disturb approximately 7 acres, of which 5 acres will be required for operations.

The new 230-kV yard includes 230-kV circuit breakers, high-voltage switches, bus supports, and transmission line termination structures. The 230-kV transmission line termination structures will be approximately 70 feet tall. A new control house will be constructed within the fenced area to accommodate the necessary system communications and control equipment in the new 230-kV yard. The 230-kV bus will be extended to interconnect to the existing Difficulty Substation 230-kV bus. The existing Difficulty Substation access road will be utilized on the current alignment and state highway entrance. The rebuilt Dave Johnston – Heward and Heward – Aeolus 230-kV lines will enter and exit the new substation yard from the north and south as shown in Appendix A, Figure A-9.

4.3.4 Shirley Basin Substation

The existing Shirley Basin 230-kV Substation will require the addition of control, protection, and communications equipment to the existing control building. No expansion of Shirley Basin Substation is proposed and all construction will take place within the existing substation fence (Appendix A, Figure A-10).

4.3.5 Aeolus Substation

The Aeolus Substation site is located in Carbon County approximately 10 miles west of Medicine Bow, Wyoming, on private land as shown in Appendix A, Figure A-11. The Aeolus Substation is the southern terminus of Segment 1. The Aeolus Substation is proposed to electrically terminate the new 230-kV line 1W(a), the reconstructed portion of the Dave Johnston – Rock Springs 230-kV line 1W(c) looped in and out of the Aeolus Substation, and the new transmission lines that will extend west to the Anticline Substation (Segments 2 and 3).

Equipment installed will include 500-kV and 230-kV circuit breakers, high-voltage switches, bus supports, transmission line termination structures, and other equipment for each transmission line. The 500-kV transmission line termination structures will be approximately 125 to 135 feet tall. Additional equipment including 500/230-kV transformers, 500-kV capacitors, and 500-kV shunt reactors (which resemble a transformer in appearance) will be installed. In addition, a Static Var Compensator will be installed for system reliability. This equipment will occupy about 10 to 15 acres within the overall substation fenced area. New control houses will be permanently added to accommodate the necessary system communications and control equipment. Site development will

disturb approximately 120 acres and 100 acres will be required for operations. The Aeolus Substation 500-kV transformers weigh approximately 600,000 pounds during shipment. They will be transported to the Project vicinity, offloaded to a heavy haul transporter, and then transported over the highway to the Aeolus site. The heavy haul transporter is approximately 190 feet long, has 35 axles, and weighs 300,000 to 325,000 pounds. Due to the size of the vehicle, a route with minimal grade and large turning radii is necessary. County Route 121 will be upgraded to provide the required access.

The Aeolus Substation will require development of a distribution line to provide electrical power during construction and operation. The 11-mile distribution line will be located within or adjacent to the County Route 121 ROW between U.S. Highway (US) 30 and the site. Final location and routing will be determined by the Construction Contractor during the final design process. The Construction Contractor will be responsible to ensure all environmental and permitting approvals, including cultural and biological preconstruction clearance surveys, are obtained prior to any ground-disturbing activities. The Construction Contractor will also be responsible for any potential required permits/approvals and/or ROW grant amendment relating to tapping an existing distribution line. In addition, the Construction Contractor will be responsible to coordinate any necessary access to support the construction of a distribution line with applicable landowners or agencies.

Figures 4-1 - County Route 121 Access to Aeolus Substation and 4-2 - Looking Westerly toward the Existing County Route 121 Bridge show the location of County Route 121 and bridge to be replaced.

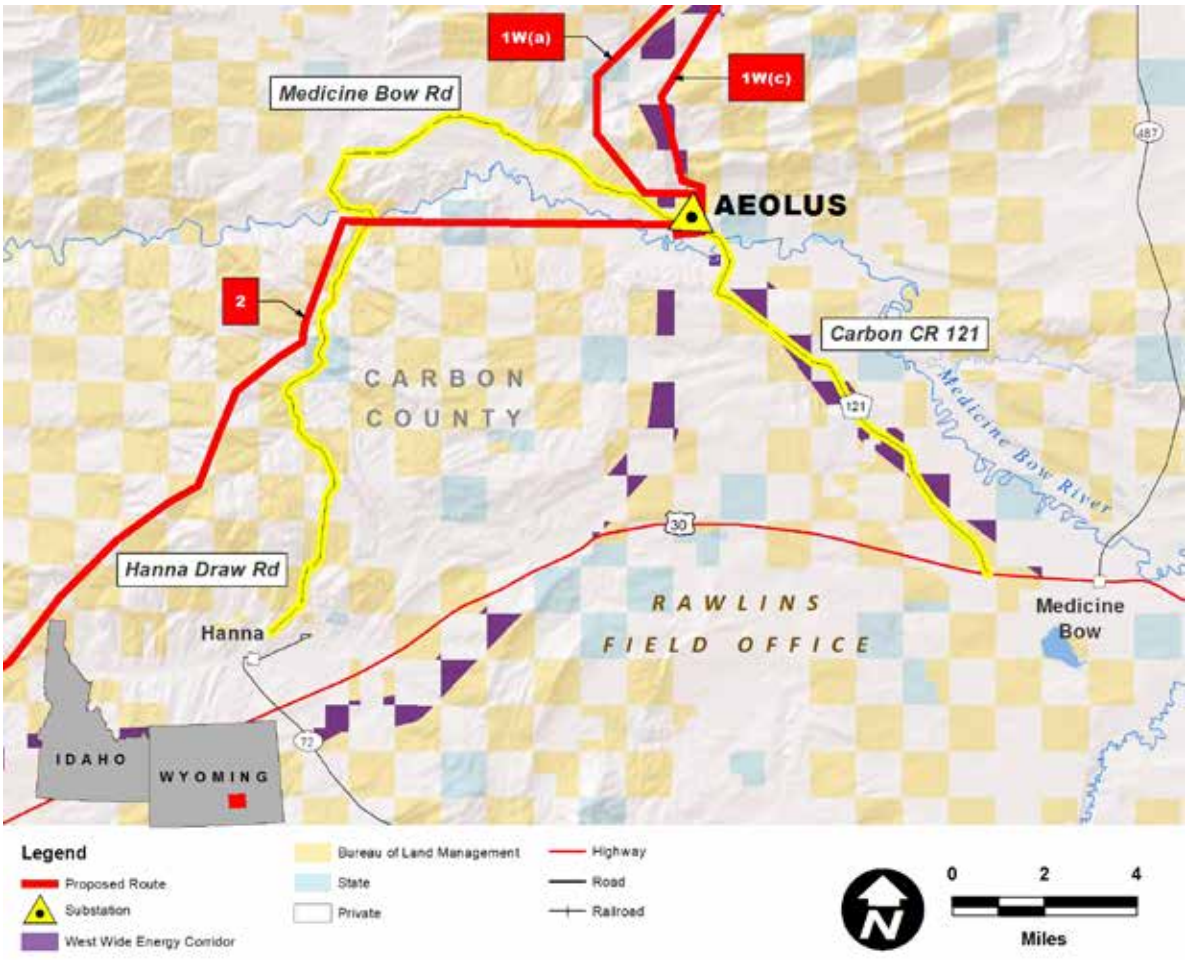


Figure 4-1. County Route 121 Access to Aeolus Substation

Figure 4-2. Looking Westerly toward the Existing County Route 121 Bridge

<u>County Route 121 Improvements</u>

Existing Conditions: County Route 121 is currently a single-lane road, about 20 feet wide and about 11 miles long, from US 30 to the Aeolus Substation. It is in poor

condition with a thin layer of gravel over a clay base and without turnouts. It includes a single-lane bridge over the Medicine Bow River built in 1914 and refurbished with a metal deck around 1972 (see Figure 4-2 – Looking Westerly toward the Existing County Route 121 Bridge). The bridge was recently inspected by the Wyoming Department of Transportation and found to be in poor structural condition. Its current weight limitations include a 10-ton weight limit for single axle trucks and 13-ton limit for multiple axle trucks, which will not accommodate the heavy haul transporters.

Needed Improvements: County Route 121 will be reconstructed from US 30 to the immediate vicinity of the Aeolus Substation. Reconstruction will result in approximately 64 acres of construction disturbance and 33 acres of new permanent roadway. Reconstruction will tentatively include the following:

- Realignment of the roadway to improve negotiability, visibility, and safety;
- Addition of turnouts, expanding the roadway to 30 feet wide for up to 100 feet along the roadway every mile or where existing terrain and alignment will not accommodate the heavy haul transporter or sight distances are inadequate;
- Improved roadway, likely to include subgrade improvement and application of a geotextile fabric covered by 6 to 8 inches of compacted aggregate base;
- Inspection of all culverts for adequacy and replacement of up to 16 culverts;
- Inspection of all cattle guards for adequacy and replacement of up to 6 cattle guards;
- Replacement of the bridge with one that meets Wyoming Department of Transportation standards for HS-20 loading[2]. Based on preliminary engineering, the new bridge requires an approximate span of 125 to 150 feet and a 24-foot travelway width. The new bridge will be installed just downstream (south) of the existing bridge; and
- After the new bridge is completed, removal of the old bridge and its approaches.

Cultural surveys of County Route 121 and evaluation of the existing bridge for eligibility to the National Register of Historic Places have been completed. Any cultural resource mitigation and preconstruction biological surveys will be the responsibility of the Construction Contractor. The Construction Contractor will be responsible for all County Route 121 reconstruction work, including coordinating with all applicable regulatory agencies to determine what standards the reconstruction work will be constructed to and to confirm specifically what reconstruction will entail.

4.3.6 Anticline Substation

The proposed Anticline Substation is located southeast of the Jim Bridger Power Plant, along the east side of Deadman Draw, approximately 30 miles east of Rock Springs, Wyoming. The proposed substation will consist of a new 500-kV yard constructed southeast of the power plant occupying a fenced area of about 140 acres on private land (Appendix A, Figure A-12). Equipment to be installed within the fenced area

[2] Loading is either H-20 or HS-20 based on an axle load of 32 kilo-pounds. This load is divided by the number of tires on each axle.

includes 500-kV and 345-kV circuit breaker bays and associated equipment, bus supports, high-voltage switches, transmission line termination structures, 500/345-kV transformers, 345-kV phase shifting transformer, 500-kV reactors, 500-kV capacitors, and a new control building to house communications and control equipment. Access to the new 500-kV yard requires improving about 0.5 mile of existing dirt road to a 20- to 24-foot all-weather surface road between the existing Jim Bridger Power Plant access road and proposed Anticline Substation fence line, improving highway access approaches, and improving a UPRR crossing. Within the substation site, some stream channel realignment may be required. Site development will disturb approximately 150 acres and 140 acres would be required for operations.

The new 500-kV line from the interconnection with Segment 2 (part of Segment 3), the new 500-kV line going to the Populus Substation (Segment 4), and the new 345-kV line going to the Jim Bridger 345-kV Substation (Segment 3A) will connect into the Anticline Substation yard.

4.3.7 Jim Bridger 345-kV Substation

The existing Jim Bridger Power Plant has a separate 345-kV substation yard located east of the plant (Appendix A, Figure A-13). A 5.1-mile interconnecting 345-kV transmission line between the new Anticline Substation 500-kV yard and the existing Jim Bridger Substation 345-kV yard (Segment 3A) will be required to electrically connect the two substations. The Jim Bridger 345-kV yard will be expanded by approximately 10 acres to accommodate the line termination position.

Equipment to be installed within the fenced area includes 345-kV circuit breaker bays and associated equipment, bus supports, high-voltage switches, transmission line termination structures, and relocated 345-kV capacitors.

4.3.8 Populus Substation

The existing Populus Substation, located near the town of Downey, Idaho, will be expanded to accommodate the addition of the Project 500-kV transmission lines. A new 500-kV yard will be constructed in the expansion area north of the existing 345-kV substation yard and interconnected to the existing 345-kV station equipment through a new 500/345-kV transformer bank. Site development will disturb approximately 90 acres, and 80 acres will be required for expansion of the existing fence line for operations (Appendix A, Figure A-14). There will be 500-kV transmission line bays installed for connection to the transformer bank and the termination of the three 500-kV line positions for lines to Anticline Substation (Segment 4), Borah Substation (Segment 5), and Cedar Hill Substation (Segment 7).

Each of the transformer and line bays contains high-voltage circuit breakers and switches, bus supports, and control equipment. A new 500/345-kV transformer bank, 500-kV reactors, and 500-kV capacitors will be installed within the fenced area. Transmission line termination structures, approximately 125 to 135 feet tall, will be installed to physically terminate the 500-kV conductors. A new control building will be constructed to house the 500-kV communications and control equipment. The existing access road will be used to reach the site.

4.4 Transmission Line and Substation Components

Regardless of the route or the structure type chosen, the construction, operation, maintenance, and decommissioning of the transmission line and substations will be conducted as specified in this section. This section provides a general outline of the construction, operations, maintenance, and decommissioning practices and references portions of Appendix B for details. . Both this section and Appendix B are organized into four parts. The first part describes the components of the transmission line system, including the transmission line itself and its supporting structures and the communication system. The second part describes the construction techniques and addresses both the permanent alterations and the temporary disturbances needed as well as providing a description of the construction workforce, equipment, and traffic. The third part describes the operations and maintenance of the new system, while the fourth part discusses decommissioning and reclamation of the ROW.

4.4.1 System Components

The new transmission system is composed of the transmission structures themselves, the conductors, other hardware, the communications system, and access roads. Each is summarized below and detailed in Appendix B.

4.4.1.1 Construction Disturbance and Land Requirements

Appendix B, Sections 3.2 and 3.6 detail the typical ROW land areas needed for the various components during construction and over the operational life of the Project.

4.4.1.2 Transmission Line System

Appendix B, Section 2.1 describes transmission structures, including their types and sizes, the clearances needed between phases of the system and between the lowest conductor and the ground surface, and their foundations. It goes on to describe the conductor types and the other hardware used. Both lattice steel towers and steel H-frames and are detailed in Appendix B.

4.4.1.3 Communication System

To control the transmission line and manage the flow of electricity, a sophisticated communication system is required. This communication system's backbone is a fiber optic system contained within one of the overhead ground wires carried along the length of the transmission system. The fiber optic signal needs to be "boosted" or regenerated about every 55 miles along the system, requiring optical signal regeneration stations. These stations consist of a 12- by 32- by 9-foot tall building, a fenced yard, access road, and distribution power supply from the local distribution system. They are typically built close to the transmission line as land use and physical features allow. Details are found in Appendix B, Section 2.4.

4.4.1.4 Access Roads

During construction vehicular access will be required to each structure. Appendix B, Section 2.5.1 specifies the typical access roads. New access roads will be constructed and existing roads widened as needed to provide a 14-foot-wide travel way. Roads not required for operations, such as to temporary multipurpose areas, will be reclaimed to their original condition or left as is, depending on landowner/land management agency

requirements. Exact locations for roads are currently being developed as part of the detailed design phase. Preliminary design has provided indicative locations for roads along the entire ROW. These indicative locations have been used in geographic information system (GIS) analysis to develop the "disturbance footprint" of the Project. While the vast majority of the access roads to be used by the Project will be within the ROW requested, some access roads will be outside the ROW.

Access roads are necessary for access to, and maintenance of, transmission lines, structures or ancillary facilities. Unless they are part of the public road system, the Companies consider them as closed to the public. Closed roads needed for access will be maintained by the Companies as described in Appendix B, Section 2.5.2. With few exceptions, construction access roads become roads needed for operations, although most will be used only infrequently to meet maintenance requirements. During construction, where roads need to be contoured, the design will take into account the drainage pattern, for instance, culvert installation. Following construction, culverts will be maintained or, if removed, the original drainage pattern will be restored. Access roads needed for operations and structure construction pads will be revegetated but not recontoured.

4.4.1.5 Multipurpose Areas and Fly Yards

Appendix B, Sections 3.4.3 and 3.4.4 provide a general description for multipurpose areas and fly yards. Exact locations are currently being developed as part of the detailed design phase, but preliminary design has provided indicative locations for multipurpose areas and fly yards along the entire ROW. These indicative locations have been used in GIS to develop the "disturbance footprint" of the Project. While the vast majority of the multipurpose areas to be used by the Project would be within the ROW requested, some multipurpose areas and most fly yards would be outside the ROW. Multipurpose areas and fly yards are temporary disturbances or temporary uses of areas already developed for storage or other industrial uses.

4.4.1.6 Substations

The description of substations includes their access roads, the types of buildings, transformers, and other infrastructure needed to convert incoming voltage to either another long-distance transmission voltage or to a lower voltage appropriate for distribution to load centers nearby. Details of substation components are found in Appendix B, Section 2.6.

4.4.2 Construction

4.4.2.1 Transmission Line Construction

The installation of transmission structures requires preparation of each site where a structure will be installed, including vegetation removal and grading to obtain a relatively flat surface for the operation of the large cranes used to install the structures. Then, either the directly embedded 230-kV and 345-kV H-frame structure holes need to be drilled or excavated to accept the two poles of each structure, drilled concrete piers are developed for each of three poles for angle structures for the 345-kV structures, or else foundations for each of the four legs of the lattice steel towers must be established. The 500-kV structures require foundations for each of the four legs of the lattice steel

towers. Appendix B, Table 2.1-2 describes in detail the ranges of foundation sizes, depths, and amounts of concrete needed for each. In addition to the general description of foundation installation, Section 3.7.1 of Appendix B discusses the procedures if rock is encountered and blasting is needed. After the holes are dug for H-frame installation or the foundations completed for the lattice steel towers, the structures are brought in either by truck or by helicopter. If ground transportation is used, cranes will be employed for lifting and installing the structures. Structures are assembled at fly yards if helicopters are used (see also Section 3.7.2 of Appendix B specifying helicopter use procedures).

After the structures are assembled and in place, the conductors and the overhead ground wires will be strung from tower to tower. This is generally accomplished using a helicopter but may be conducted from the ground if the access road travels directly between towers. Details are found in Section 3.4.8 of Appendix B.

4.4.2.2 Substation Construction

Appendix B, Section 3.6 provides details of substation construction, including development of all-weather access roads, multipurpose areas, clearing and grading of the site, establishment of grounding mats and systems, fencing, foundation excavation, structure and equipment installation, oil containment system installation, control building installation, and finally cleanup and landscaping.

4.4.2.3 Communication Systems

Construction of the fiber optic “backbone” of the communication system will be accomplished at the same time as the conductors are strung. Regeneration station construction is also detailed in Section 3.5.1 of Appendix B.

4.4.2.4 Construction Elements

Section 3.8 in Appendix B provides details of the construction workforce to be employed, the construction equipment and likely daily traffic patterns during the peak of construction, and the proposed construction schedule. Removal of temporary facilities and waste disposal are also discussed.

4.4.3 Operations and Maintenance

The Companies have prepared Project-specific operations and maintenance policies and procedures designed to meet the requirements of the North American Electrical Reliability Corporation (NERC), Western Electricity Coordinating Council (WECC), and the state public utility commissions, while remaining in compliance with the applicable codes and standards with respect to maintaining the reliability of the electrical system. Operations and maintenance activities include transmission line patrols, climbing inspections, tower and wire maintenance, insulator washing in selected areas as needed, and access road repairs. Periodic inspection and maintenance are also key parts of operating and maintaining the electrical system. These activities are described in greater detail in Appendix B, Section 4.0.

4.4.4 Decommissioning

The projected life of the Project is 50 years. Typically, transmission lines that have been maintained through that period will continue to provide service for a much longer lifetime. At the end of the service life of the Project, assuming that it is not upgraded or otherwise kept in service, the structures and conductors would be removed. The regeneration stations, if not needed for other existing transmission line projects, would also be removed. Appendix B, Section 5.0 provides information regarding the removal of materials and the reclamation of the sites.

5.0 ENVIRONMENTAL PROTECTION PLANS AND DOCUMENTS

This section describes the EPPs included as appendices to this POD that the Companies will use to ensure environmental protection during construction, operation, and maintenance. All EPPs are stand-alone documents that contain complete lists of all EPMs and other specific stipulations and methods for that environmental resource. The management plans and plan methodologies included as appendices have been developed jointly by the Companies and the BLM with input from the USFS and other cooperating agencies. The Companies will be responsible to ensure their contractors and employees implement these measures.

The EPPs fall into two categories: “final” plans that have been completed by the Companies and “framework” plans that will be completed the Construction Contractor. Table 5-1 – Environmental Protection Plans and Documents identifies final and framework plan status.

Table 5-1. Environmental Protection Plans and Documents

Description	Appendix Designation	Status
The **Environmental Compliance Management Plan** is the primary guidance document that states how the Companies uphold, document, and manage compliance with the ROW grant, the POD, landowner agreements, and all federal, state, and local permits. It is a centralized Project environmental compliance reference and is thereby intended to facilitate environmental compliance across the entire Project.	Appendix C	Final subject to Agency Review
The **Framework Reclamation Plan** includes construction mitigation, reclamation, and revegetation measures for each land management area crossed by the ROW within BLM-managed and National Forest lands. It will combine the Companies’ best management practices (BMPs) with site-specific mitigation developed in consultation with agencies. Some measures will apply Project-wide, while others will be designed for specific areas.	Appendix D	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Noxious Weed Plan** provides methods to control the potential occurrence/infestation of noxious and invasive weeds during and following construction of the Project. The purpose of the plan is to ensure noxious weeds are identified and controlled during the construction of Project facilities and all federal, state, county, and other local requirements are satisfied.	Appendix E	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Stormwater Pollution Prevention Plan** includes measures for temporary and permanent erosion and sediment control that will be used during construction, operation, and maintenance of the transmission line and ancillary facilities.	Appendix F	Construction Contractor to finalize followed by Company and Agency Review

Table 5-1. Environmental Protection Plans and Documents (continued)

Description	Appendix Designation	Status
The **Framework Spill Prevention, Containment, and Countermeasures Plan** includes measures for spill prevention practices, requirements for refueling and equipment operation near waterbodies, procedures for emergency response and incident reporting, and training requirements.	Appendix G	Construction Contractor to finalize followed by Company and Agency Review
The **Plant and Wildlife Conservation Measures Plan** presents the measures proposed by the Companies for avoidance and minimization of impacts to plant and wildlife species as related to construction activities for the Project and outlines specific conservation measures to be implemented in the event that state or federally listed species, BLM sensitive species, or USFS special status species or their habitats are identified within or adjacent to the Project ROW.	Appendix H	Final subject to Agency Review
The **Framework Stream, Wetland, Well, and Spring Protection Plan** provides measures to protect these resources from potential impacts during construction, operation, and maintenance activities. The goals of this plan are to control Project-related erosion and sedimentation into streams and wetlands, minimize disturbance and erosion of streambeds and banks, and protect springs and wells in the Project area from impacts due to blasting and hazardous materials contamination.	Appendix I	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Paleontological Resources Protection Plan** identifies the mitigation measures needed to avoid or reduce Project-related impacts to paleontological resources, wherever feasible. This plan provides important background and contextual information useful for the paleontological resources mitigation program.	Appendix J	Construction Contractor to finalize followed by Company and Agency Review
The **Agricultural Protection Plan** includes measures intended to mitigate or provide compensation for agricultural impacts that may occur due to construction of the Project. The measures are intended to be implemented on partially or wholly owned private agricultural land unless directed otherwise by the landowner.	Appendix K	Final subject to Agency Review
The **Framework Traffic and Transportation Management Plan** includes measures that require compliance with federal policies and standards relative to planning, siting, improvement, maintenance, and operation of roads for the Project.	Appendix L	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Blasting Plan** outlines methods to prevent adverse impacts to human health and safety, property, and the environment that could potentially result from the use of explosives during Project construction and mitigate risks and potential impacts associated with blasting procedures that may be required for construction.	Appendix M	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Erosion, Dust Control and Air Quality Plan** provides measures to ensure protection of the air quality that will be affected by the Project. This plan is to be implemented during the construction, operation, and maintenance phases of the Project. These measures are intended to minimize dust and emissions from construction-related activities.	Appendix N	Construction Contractor to finalize followed by Company and Agency Review

Table 5-1. Environmental Protection Plans and Documents (continued)

Description	Appendix Designation	Status
The **Framework Fire Prevention and Suppression Plan** includes measures to be taken by the Companies and their contractors to ensure that fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations. The plan addresses the specific requirements of the USFS and BLM and provides BMPs for fire management on privately owned lands.	Appendix O	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Hazardous Materials Management Plan** reduces the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes). This plan identifies Project-specific mitigation measures and other specific stipulations and methods to address spill prevention, response, and cleanup procedures for the Project.	Appendix P	Construction Contractor to finalize followed by Company and Agency Review
The **Framework Construction Emergency Preparedness and Response Plan** provides an overview of methods to be implemented if the need for emergency management is imminent. This document will describe the existing support structure, chain of command, and emergency communications protocols.	Appendix Q	Construction Contractor to finalize followed by Company and Agency Review
The **Operations, Maintenance, and Emergency Response Plan** includes measures to be employed while conducting routine, corrective, and emergency operations and maintenance activities. Measures identified are in compliance with applicable state and federal laws and policies; and will ensure consistency across and within federal jurisdictions; allowing for the Companies to access the transmission line and ancillary facilities in a timely, cost effective, and safe manner.	Appendix R	Final subject to Agency Review
The **Cultural Resources Protection Plan** identifies the mitigation measures needed to avoid or reduce Project-related impacts to cultural resources, wherever feasible. This plan provides important background and contextual information useful for the cultural resources protection program and appends the Programmatic Agreement (PA), Project-wide Historic Properties Treatment Plan (HPTP), Monitoring Plan, Inadvertent Discovery Plan, and Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action.	Appendix S	Final subject to Agency Review
The **Preconstruction Checklist** identifies when specific actions related to completion of plans are to take place as well as when Contractor-secured permits are to be applied for.	Appendix T	Final subject to Agency Review
The **Framework Flagging, Fencing, and Signage Plan** describes the methods that will be used in the field to delineate limits of disturbance and protect sensitive environmental and cultural resources during Project construction.	Appendix U	Construction Contractor to finalize followed by Company and Agency Review
PacifiCorp's Transmission Construction Standards provides standards for all aspects of transmission line construction.	Appendix V	Final

Table 5-1. Environmental Protection Plans and Documents (continued)

Description	Appendix Designation	Status
PacifiCorp's Transmission and Distribution Vegetation Management Program Specification Manual and Idaho Power Company's Transmission Clearing Specifications and Framework for Managing Noxious Weeds cover the vegetation management programs for both distribution and transmission. They include program descriptions, specifications, and protocols.	Appendix W	Final
The **Land Description of Project Components on Federally Managed Public Lands** provides an Aliquot part subdivision down to the quarter-quarter section for the transmission line ROW, regeneration stations, substations, permanent and temporary access roads, and temporary multipurpose areas and fly yards.	Appendix X	Final subject to Agency Review
Other Information includes Project documents such as the Biological Opinion and permits that have been issued.	Appendix Y	NA
The **Environmental Protection Measures** are a list of all EPMs to be implemented for the Project and are organized by resource to provide an easy reference document.	Appendix Z	Final subject to Agency Review

Table 5-2 – Mapping Requirements to be completed by the Construction Contractor identifies specific EPP mapping that is required to be completed by the Construction Contractor as part of preparing final plans. The specified information will be included as revisions or additions to the maps contained in Volume II – POD Map Sets 1 and 2. Table 5-2 – Mapping Requirements to be completed by the Construction Contractor is not intended to be an exhaustive list of mapping requirements and additional mapping requirements could be required to support the construction of Gateway West.

Table 5-2. Mapping Requirements to be completed by the Construction Contractor

POD Reference	Mapping Requirement
Appendix D – Framework Reclamation Plan	• Vegetation alliances resulting from field verification of proposed disturbance areas • Reclamation monitoring treatment and control sites, including photo point locations
Appendix E – Framework Noxious Weed Plan	• Locations of noxious weeds identified during preconstruction surveys • Areas subject to preconstruction weed treatment • Locations of wash stations
Appendix F – Framework SWPPP	• Mapping as required by stormwater permits (i.e., General Permit to Discharge Storm Water Associated with Large Construction Activity Under the Wyoming Pollutant Discharge Elimination System, Part 8.2.3 in Wyoming and NPDES Construction General Permit USEPA Region 10 for Idaho
Appendix G – Framework SPCC Plan	• Storage, refueling, and lubrication areas
Appendix H – Plant and Wildlife Conservation Measures Plan	• Environmentally sensitive areas identified during preconstruction surveys (e.g., locations of TES species) • Seasonal and spatial restrictions resulting from preconstruction survey data (e.g., raptor buffers) • Locations where perch deterrents are required

Table 5-2. Mapping Requirements to be completed by the Construction Contractor (continued)

POD Reference	Mapping Requirement
Appendix I – Framework Stream, Wetland, Well, and Spring Protection Plan	• Site-specific stream and wetland crossing plans • Wells within 600 feet of the Project • Wells and springs within areas that will be impacted by blasting
Appendix J – Paleontological Resources Protection Plan	• Environmentally sensitive areas identified during preconstruction surveys • Site-specific paleontological monitoring locations identified as a result of preconstruction surveys
Appendix K – Agricultural Protection Plan	• Locations of underground water lines • Fences, gates, cattle guards, corrals (to inform potential need for repair and/or grounding)
Appendix L – Framework Traffic and Transportation Management Plan	• Project roads • Site-specific transportation management plans (public roads)
Appendix M – Framework Blasting Plan	• Areas where blasting will occur, including: o Blasting within 0.25 mile of a known sensitive wildlife resource o Blasting in the vicinity of pipelines o Wells that may be impacted by blasting • Explosive storage locations
Appendix N – Erosion, Dust Control, and Air Quality Plan	• Locations of water sources to be used for construction (e.g., dust control) • Areas of expansive soils, landslide risk, or other geotechnical hazards
Appendix O – Framework Fire Prevention and Suppression Plan	• Safe locations/cleared areas to go to in the event of a fire that exceeds immediate control
Appendix P – Framework Hazardous Material Management Plan	• Site maps containing storage and safety precautions for each location containing hazardous materials and hazardous wastes (see Section 4.2.1 of Appendix P)
Appendix S – Cultural Resources Protection Plan	• Environmentally sensitive areas identified during denied access cultural resource surveys • Site-specific HPTPs

5.1 Framework Plans

Framework plans establish the approach and the protocols for developing more specific plans, some of which may need to be developed and approved prior to construction. In general, framework plans provide guidance at a Project level that need to be refined by development of “implementation” plans that are developed at a site-specific level. The Construction Contractor will be required to fully develop final plans based on the framework plans identified in Table 5-1 – Environmental Protection Plans and Documents. The advantage of having the framework plans finalized by the Construction Contractor is that the contractor who will be responsible for day-to-day construction will have been integrally involved in development of the final EPPs. This ensures that the planning and construction process are synchronized and incorporate feasible solutions.

Upon review and approval by the Companies, the Companies will submit the fully developed final plans to the CIC who will coordinate with the BLM, BOR, and USFS for final approval.

5.2 Plan Implementation

The Companies will ensure that their contractors and employees implement these measures following the procedures in Appendix C – Environmental Compliance Management Plan. The Companies and BLM have agreed on the use of a third-party CIC to act on the behalf of land-managing and other regulatory agencies and provide environmental compliance oversight during construction. The CIC will be selected by the BLM and other agencies but paid for by the Companies. The Companies anticipate that the CIC will be selected and hired prior to issuance of the NTPs and SUAs to allow adequate time for the CIC to review documents and develop on-the-ground familiarity with the Project.

5.3 Relationship to Segment E

As previously described in Section 1.0, Gateway West consists of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. Consistent with Section 2.1 – Overall Project, Table 2.1-3 – Proposed Action Construction Schedule of the Final EIS, construction of Segments 1-4 (Segment D) is planned to occur between 2015 and 2018 and Segments 5-10 (Segment E) between 2017 and 2021.

The EPPs for Gateway West have been developed to match the construction segments. The EPPs included in this POD have been tailored to provide the design, construction and reclamation guidelines and procedures during construction and operation of Segment D. The EPPs for Segment E will undergo a similar process to provide the same level of detail relative to the design, construction and reclamation guidelines and procedures for construction and operation of Segment E.

6.0 LITERATURE CITED

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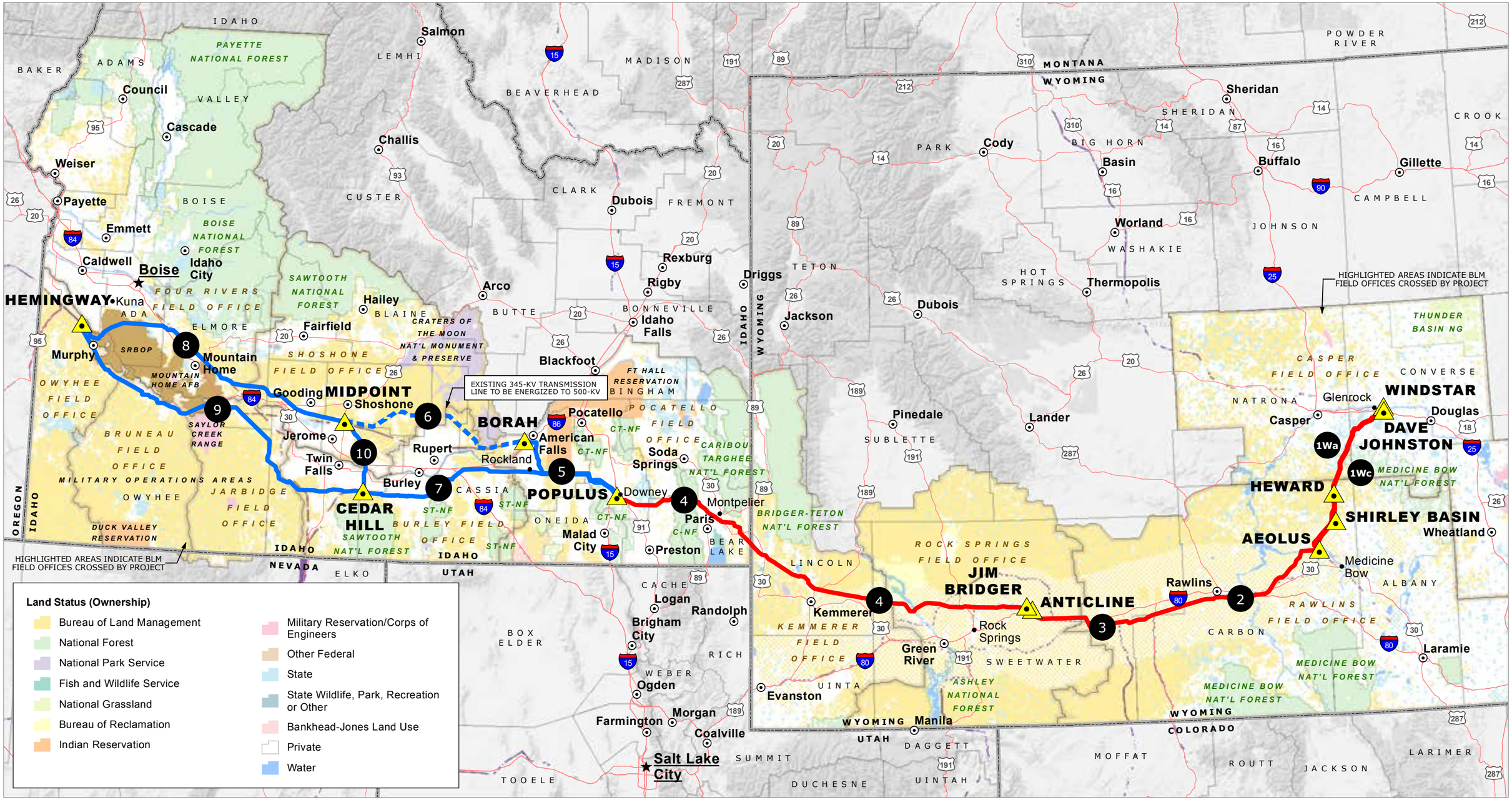
APPENDIX A
TRANSMISSION LINE AND SUBSTATION LOCATION MAPS



0 40
Miles
NAD 1983 UTM Zone 12N

Enlarged Area Above

Route Features
Proposed Route
Segment D
Segment E

Substation
Segment Number

Other Features
State Capital
County Seat
Other City/Town
Major Roads

County
BLM Field Office
National Forest
Morley Nelson Snake River Birds of Prey NCA

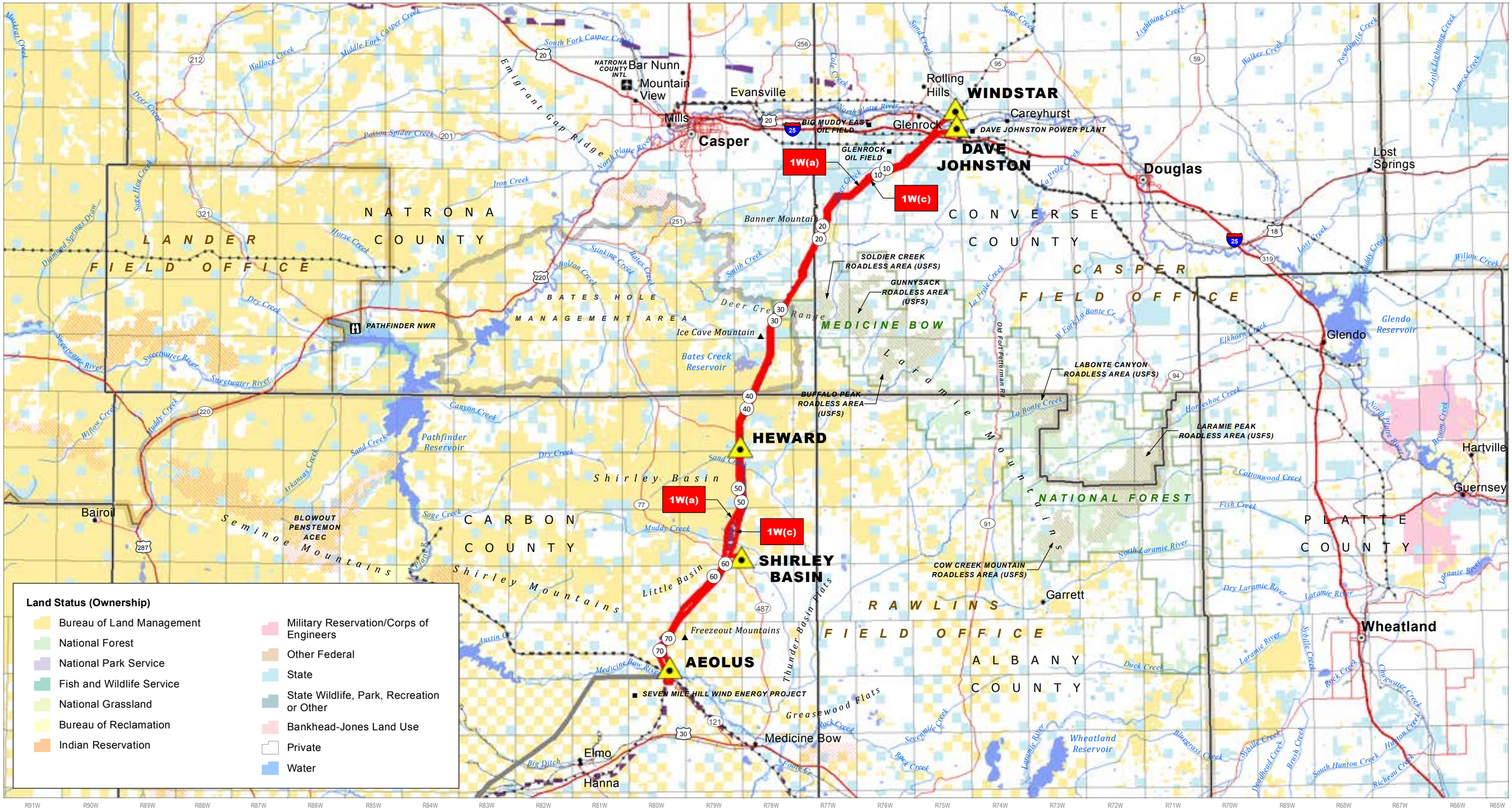
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

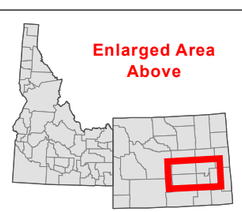
Project Overview
Figure A-1

Sources | BLM, USFS, USGS, ESRI, TANA

POD FIG A-1 Project Overview_20130816 scott.flinders 8/16/2013



0 10
Miles
NAD 1983 UTM Zone 12N



Route Features
- Proposed Route
- Other Route

- Mile
- Substation
- Existing Transmission Line (115kV greater)
- West Wide Energy Corridor (WWEC)

Other Features
- BLM Field Office
- National Forest
- County
- Restricted Access (ACEC, WSA, roadless, etc)
- Railroad
- Interstate
- US Highway
- Secondary State or County Road
- Airport/Landing Strip
- Park/Recreation Area
- Wildlife Area
- Stream/River
- Waterbody

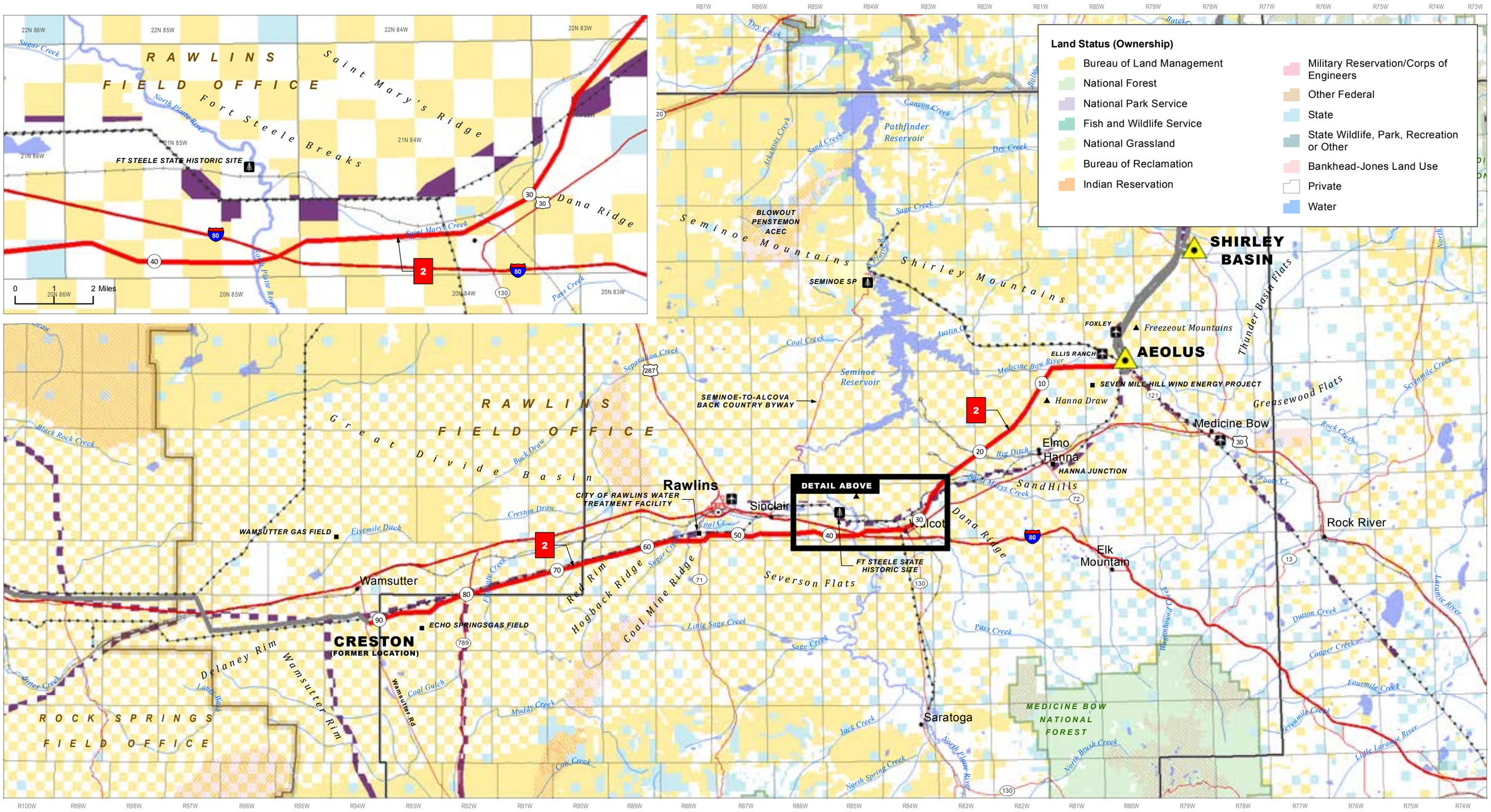
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Segment 1W(a) / 1W(c)
Windstar/Johnston to Aeolus
Figure A-2

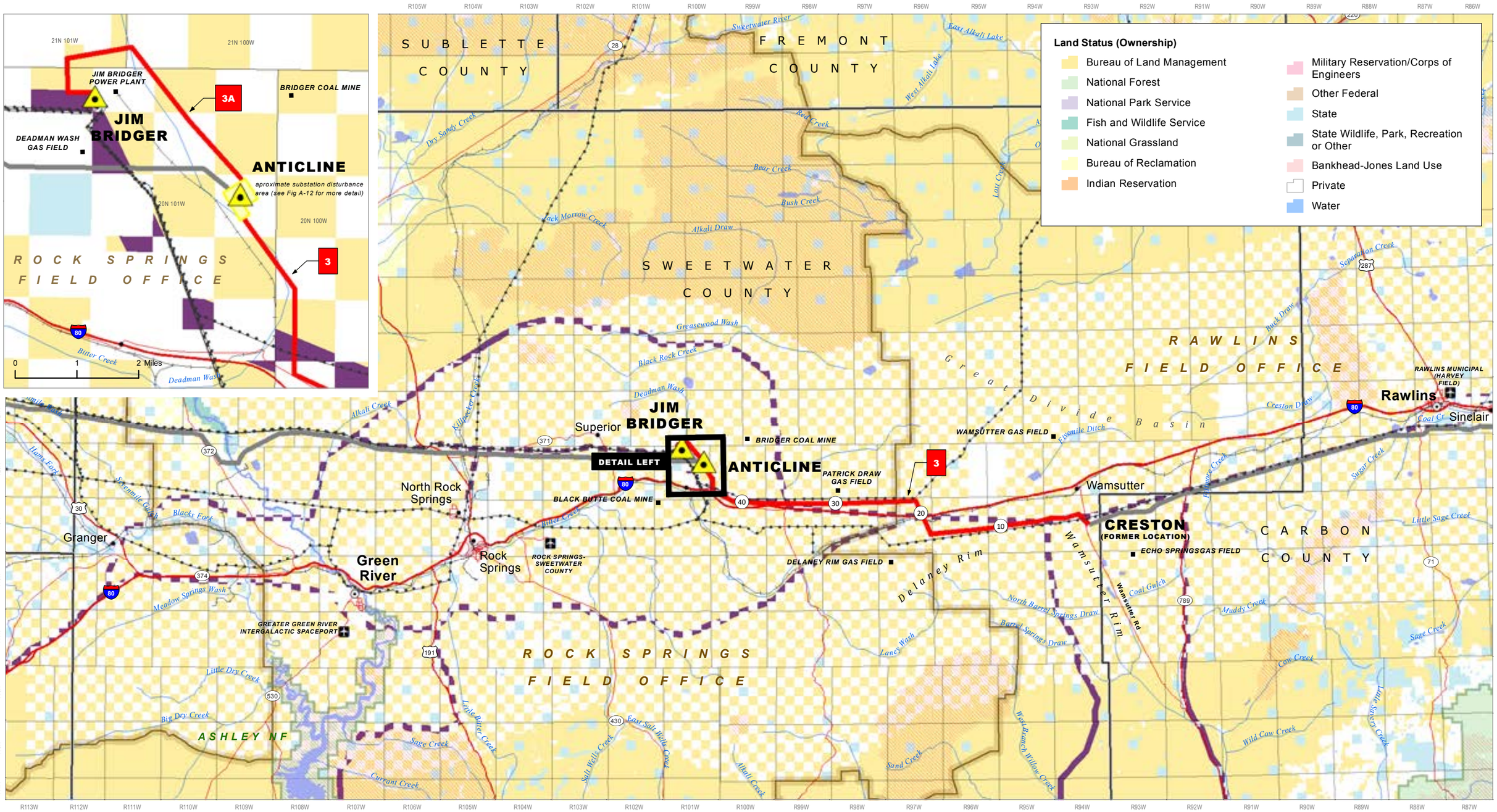
Sources | BLM; USFS; ESRI

POD FIG A-2 Segment 1W_20130325 scott.flinders 3/27/2013



Sources | BLM; USFS; ESRI

POD FIG A-3 Segment 2_20130325 scott.flinders 3/27/2013



Gateway West
Transmission Line Project

Segment 3
Creston to Anticline/Bridger
Figure A-4

Sources | BLM; USFS; ESRI

POD FIG A-4 Segment 3_20130325 scott.flinders 3/27/2013

0 10
Miles
NAD 1983 UTM Zone 12N

Enlarged Area Above

Route Features
- Proposed Route
- Other Route

- Mile
- Substation
- Existing Transmission Line (115kV greater)
- West Wide Energy Corridor (WWEC)

Other Features
- BLM Field Office
- National Forest
- County
- Restricted Access (ACEC, WSA, roadless, etc)
- Railroad
- Interstate
- US Highway
- Secondary State or County Road
- Airport/Landing Strip
- Park/Recreation Area
- Wildlife Area
- Stream/River
- Waterbody

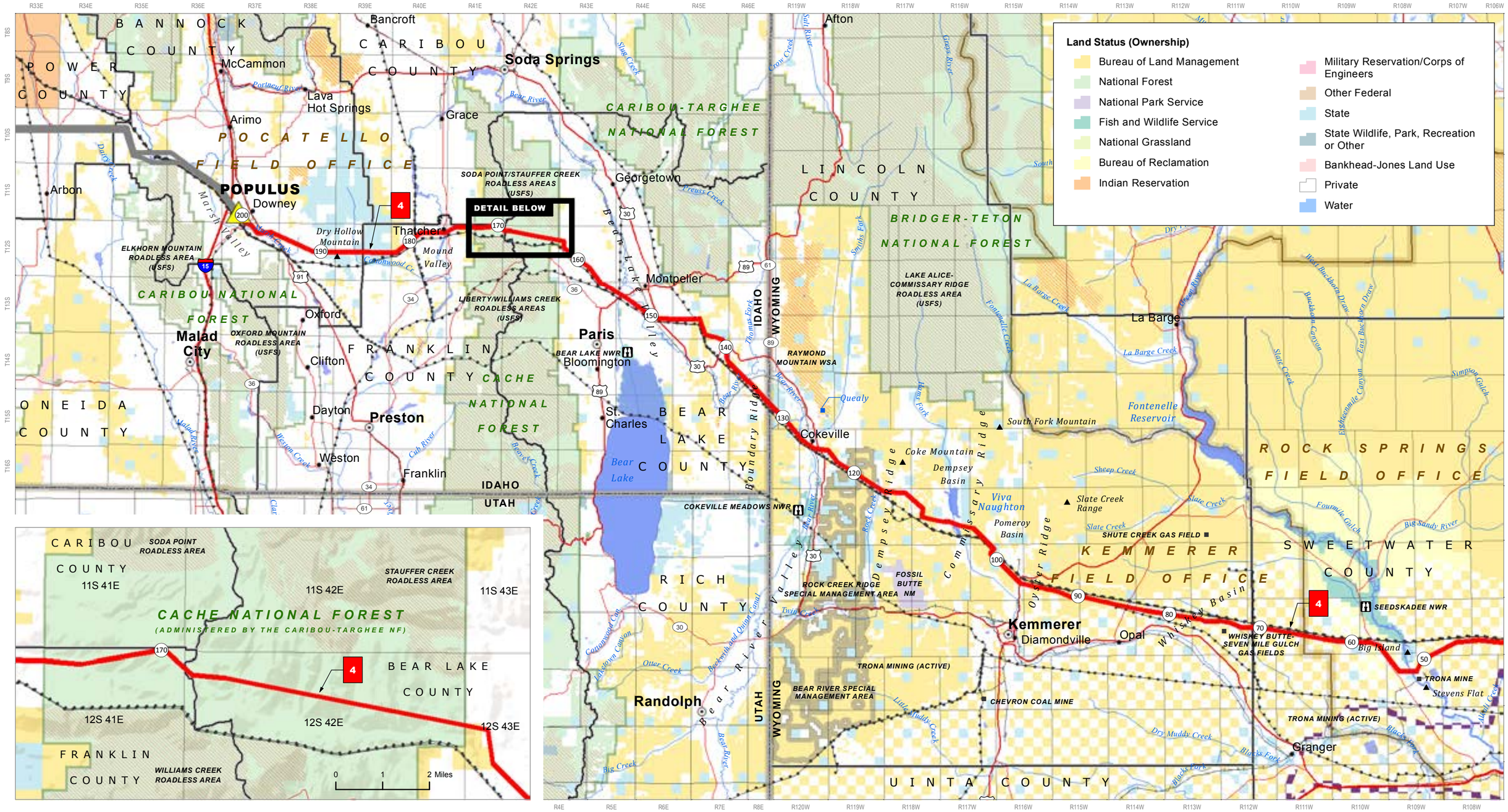
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

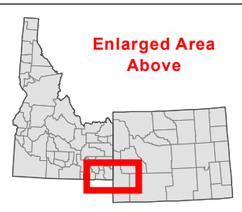
Segment 4-WY
Anticline to Wyoming/Idaho
Figure A-5

Sources | BLM; USFS; ESRI

POD FIG A-5 Segment 4-WY_20130325 scott.flinders 3/27/2013



0 10
Miles
NAD 1983 UTM Zone 12N



Route Features
- Proposed Route
- Other Route

- Mile
- Substation
- Existing Transmission Line (115kV greater)
- West Wide Energy Corridor (WWEC)

Other Features
- BLM Field Office
- National Forest
- County
- Restricted Access (ACEC, WSA, roadless, etc)
- Railroad
- Interstate
- US Highway
- Secondary State or County Road
- Airport/Landing Strip
- Park/Recreation Area
- Wildlife Area
- Stream/River
- Waterbody

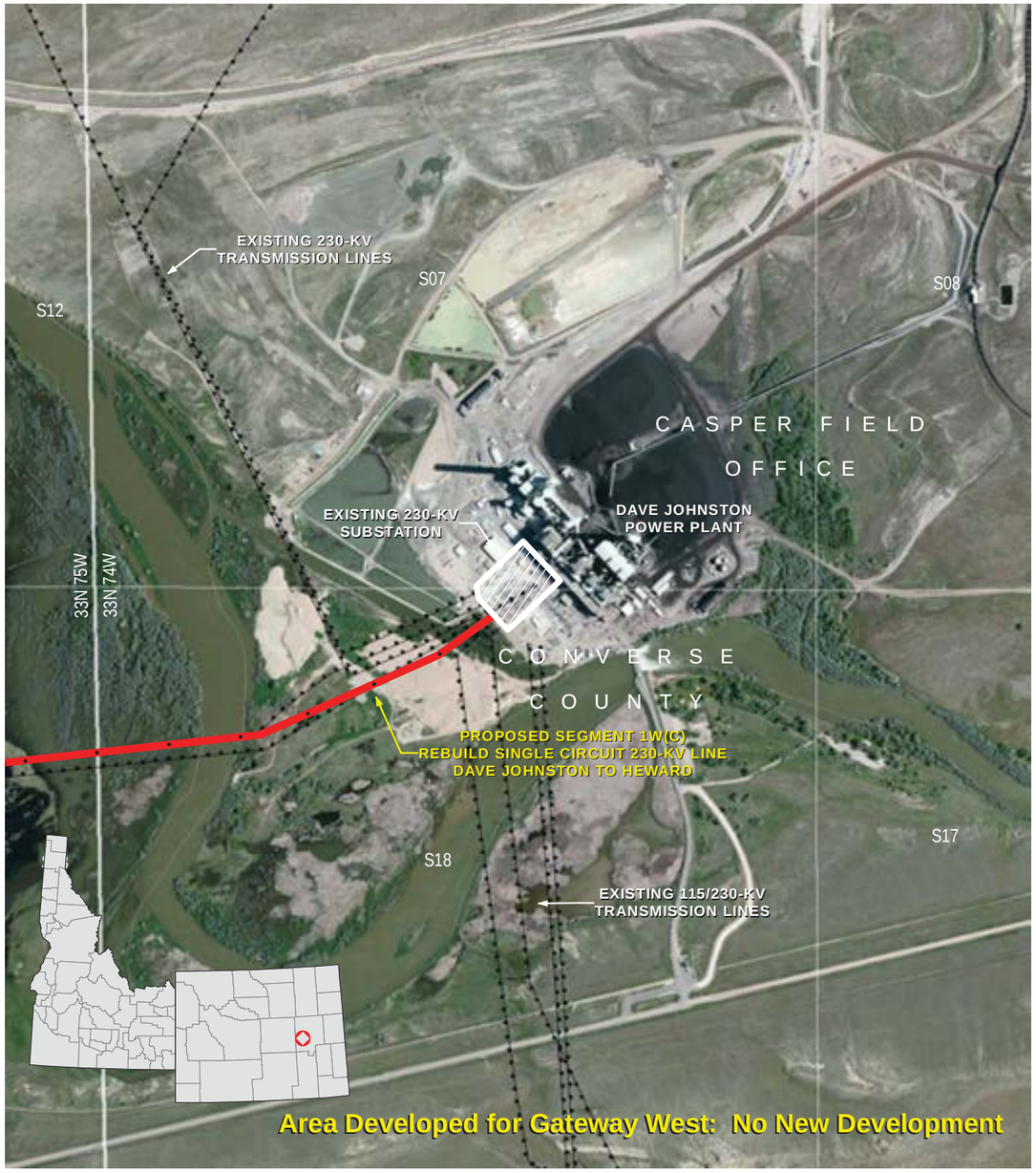
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Segment 4-ID
Wyoming/Idaho to Populus
Figure A-6

Sources | BLM; USFS; ESRI

POD FIG A-6 Segment 4-ID_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Existing Substation (No New Development)
- Milepost
- Tenth-Mile
- Existing Transmission Line

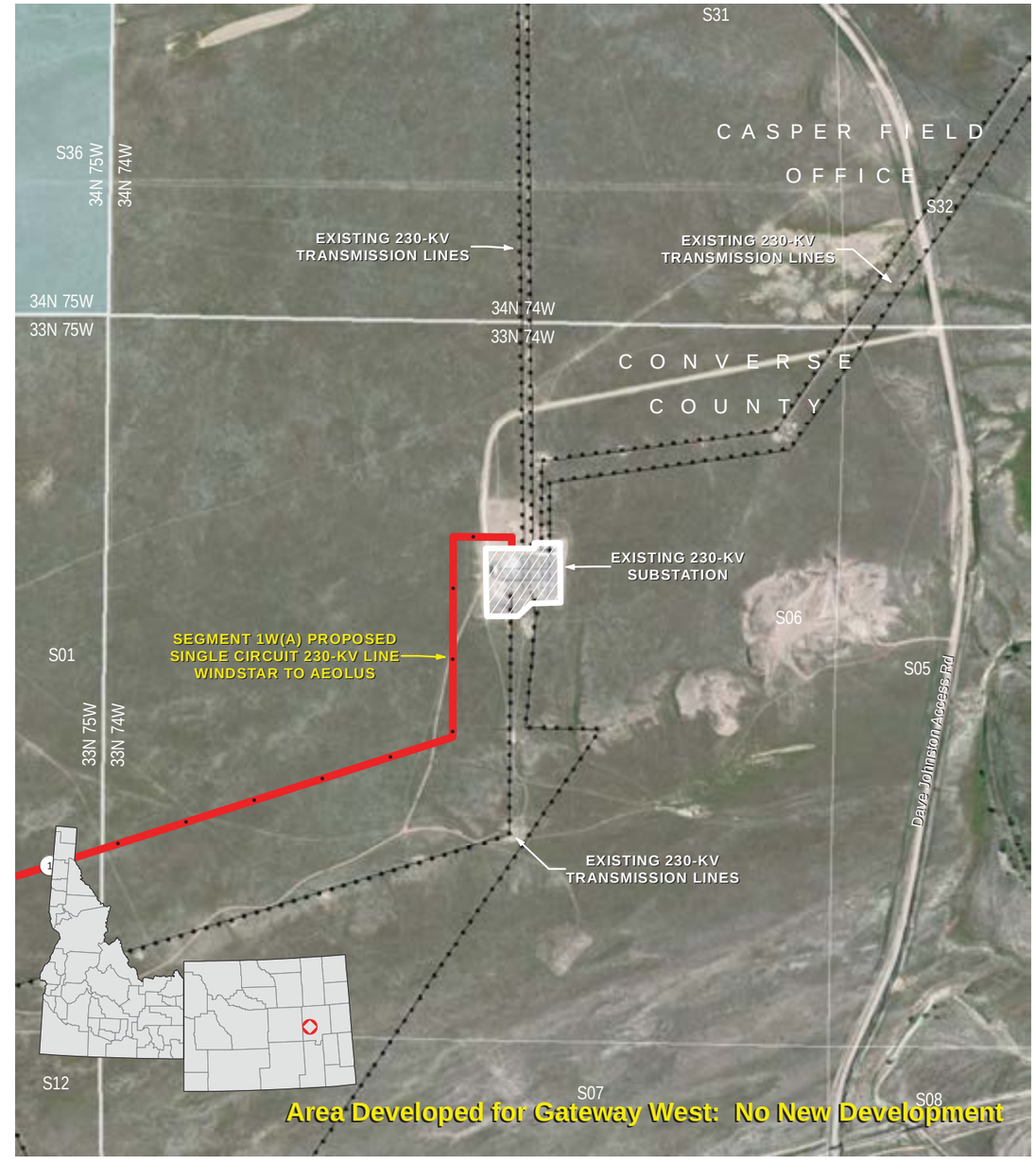
Land Status
- Private

Gateway West Transmission Line Project

Dave Johnston 230-kV Substation
Figure A-8

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Existing Substation (No New Development)
- Milepost
- Tenth-Mile
- Existing Transmission Line

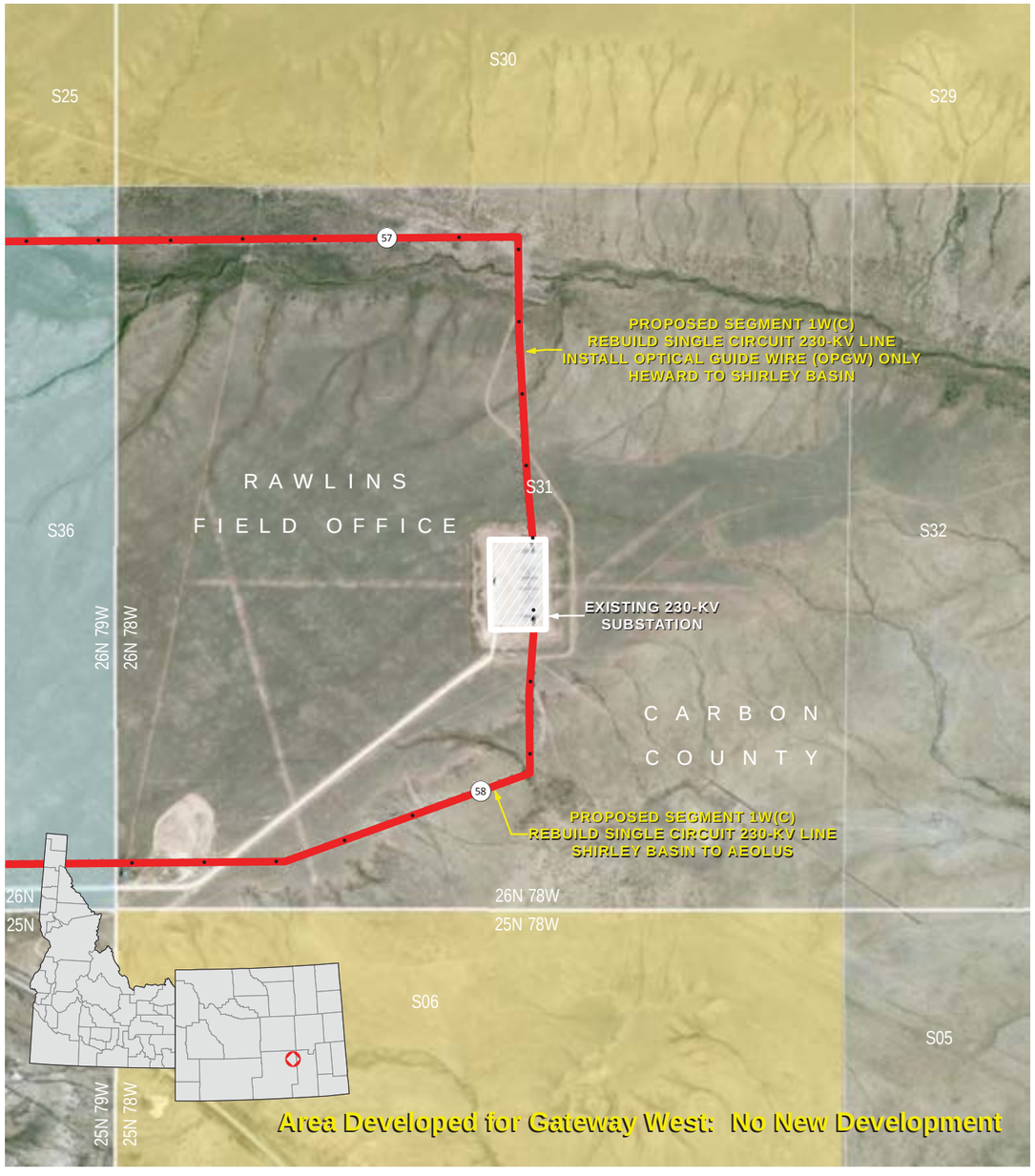
Land Status
- State
- Private

Gateway West Transmission Line Project

Windstar 230-kV Substation
Figure A-7

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Existing Substation (No New Development)
- (10) Milepost
- Tenth-Mile
- Existing Transmission Line

Land Status
- Bureau of Land Management
- State
- Private

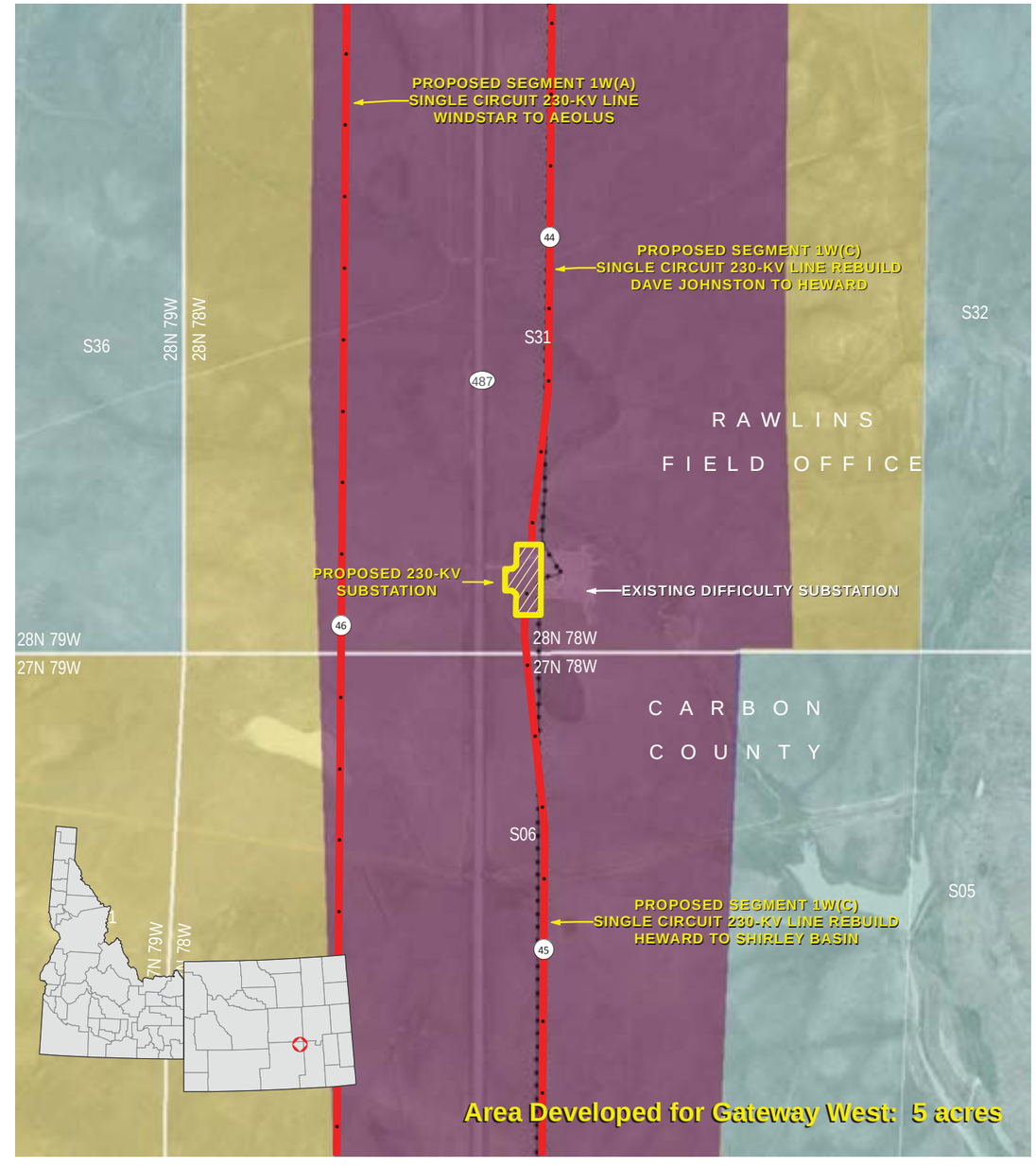
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Shirley Basin
230-kV Substation
Figure A-10

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Approximate Substation Development Area
- (10) Milepost
- Tenth-Mile
- Existing Transmission Line
- West-wide Energy Corridor (WWEC)

Land Status
- Bureau of Land Management
- State

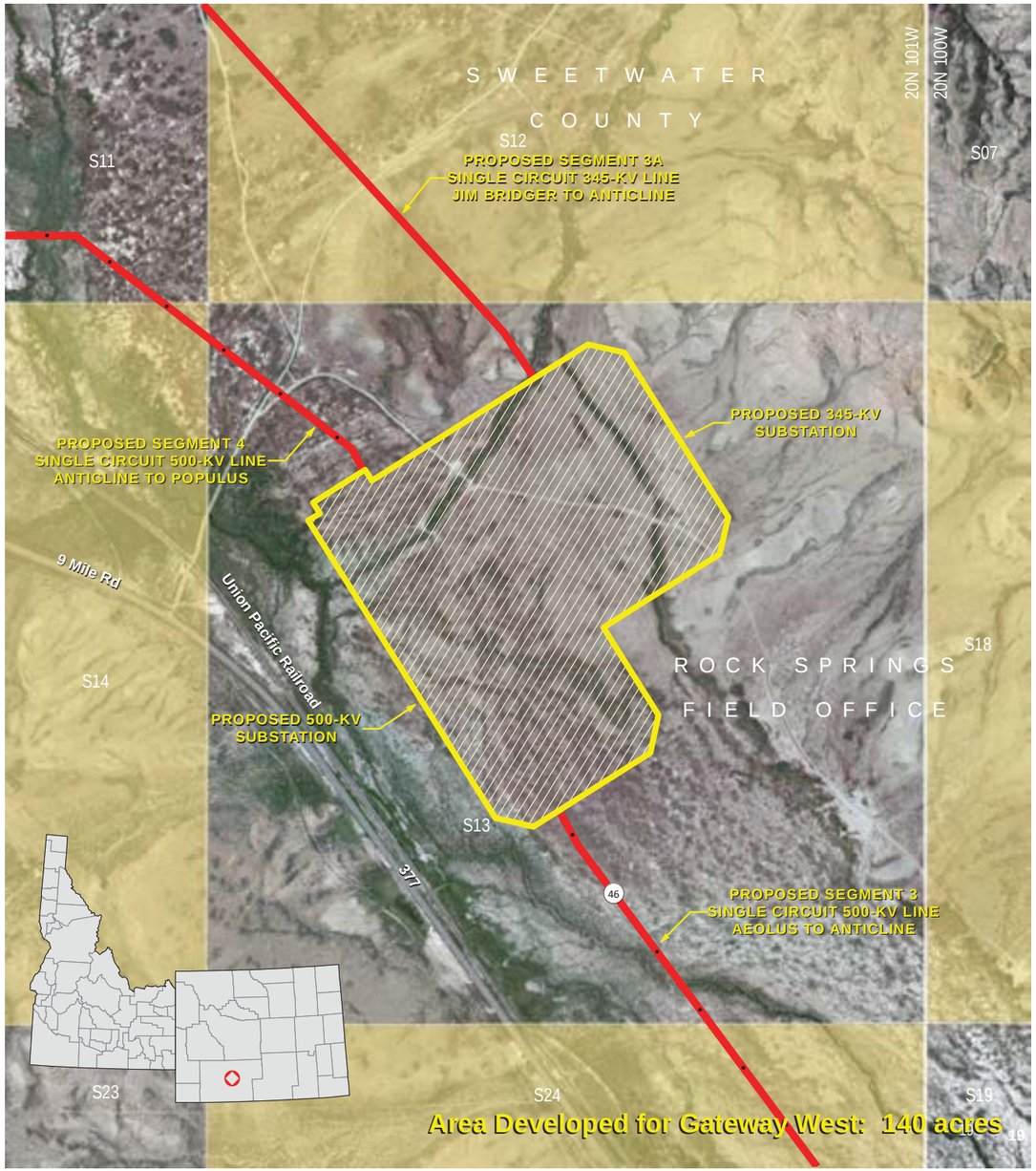
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Heward
230-kV Substation
Figure A-9

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Approximate Substation Development Area
- Milepost
- Tenth-Mile

Land Status
- Bureau of Land Management
- Private

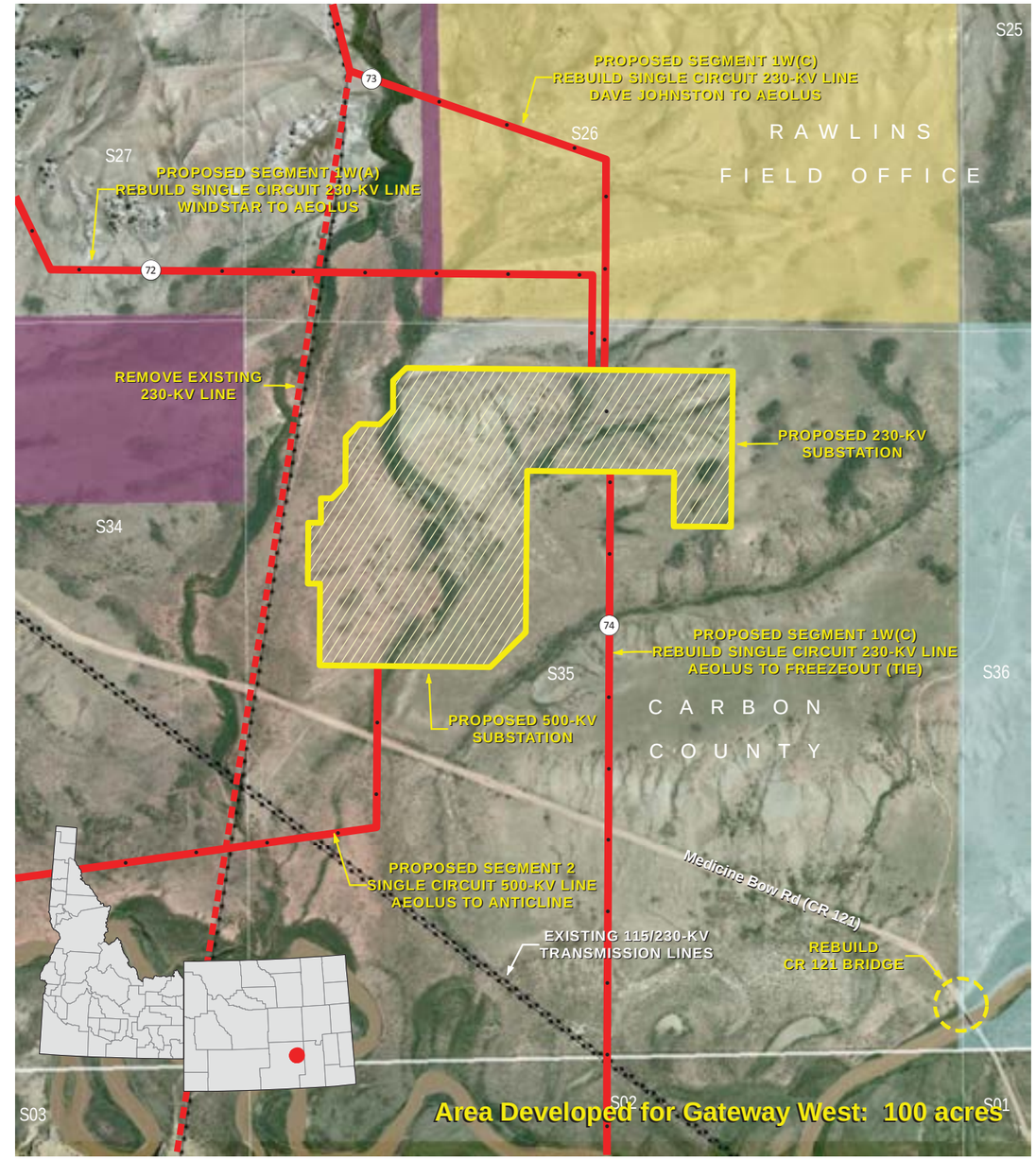
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Anticline
345/500-kV Substation
Figure A-12

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Remove Existing Line
- Approximate Substation Development Area
- Milepost
- Tenth-Mile
- Existing Transmission Line

Land Status
- Bureau of Land Management
- State
- Private
- West-wide Energy Corridor (WWEC)

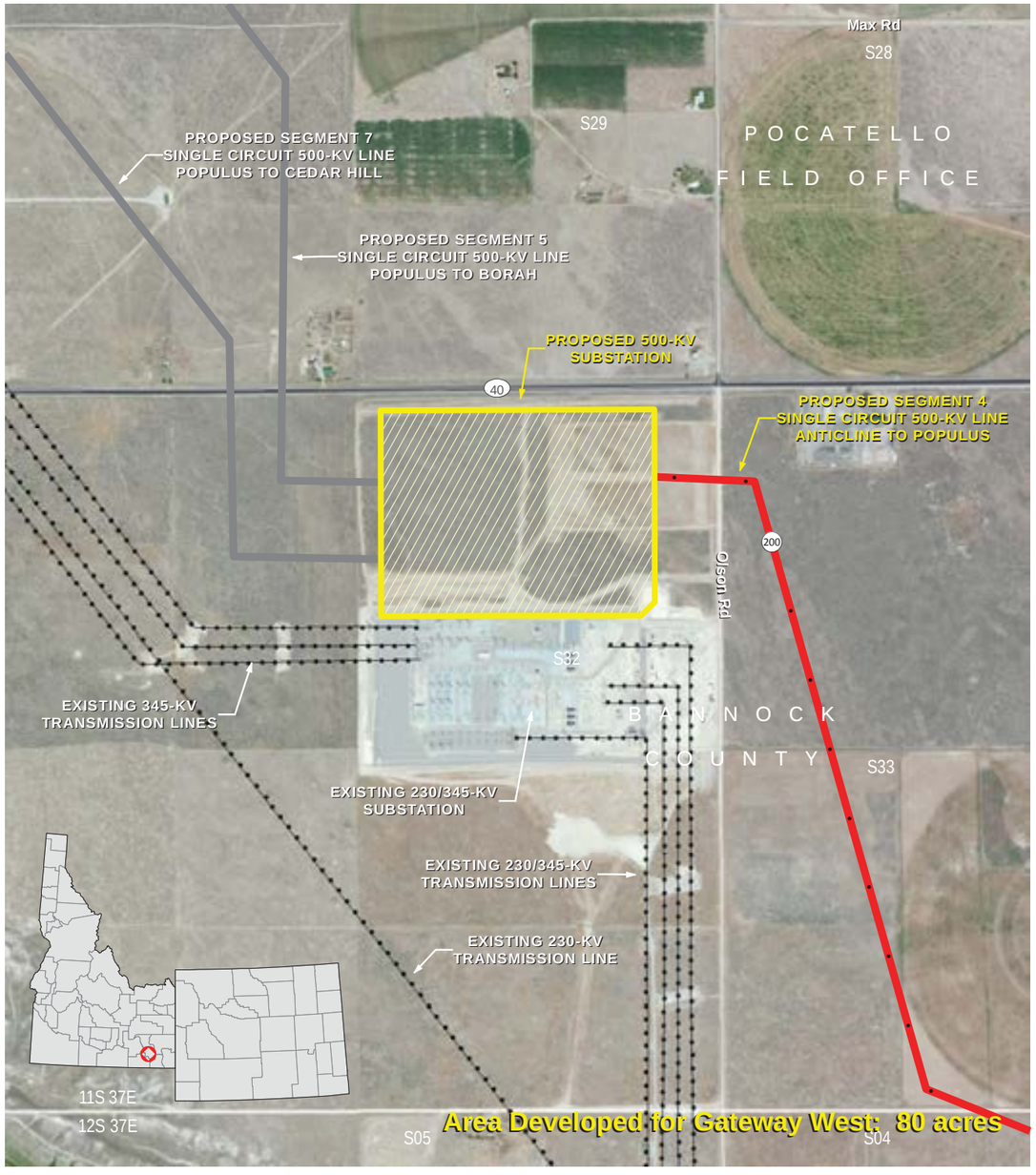
ROCKY MOUNTAIN POWER
IDAHO POWER

Gateway West
Transmission Line Project

Aeolus
230/500-kV Substation
Figure A-11

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Other Route
- Approximate Substation Development Area
- Milepost
- Tenth-Mile
- Existing Transmission Line

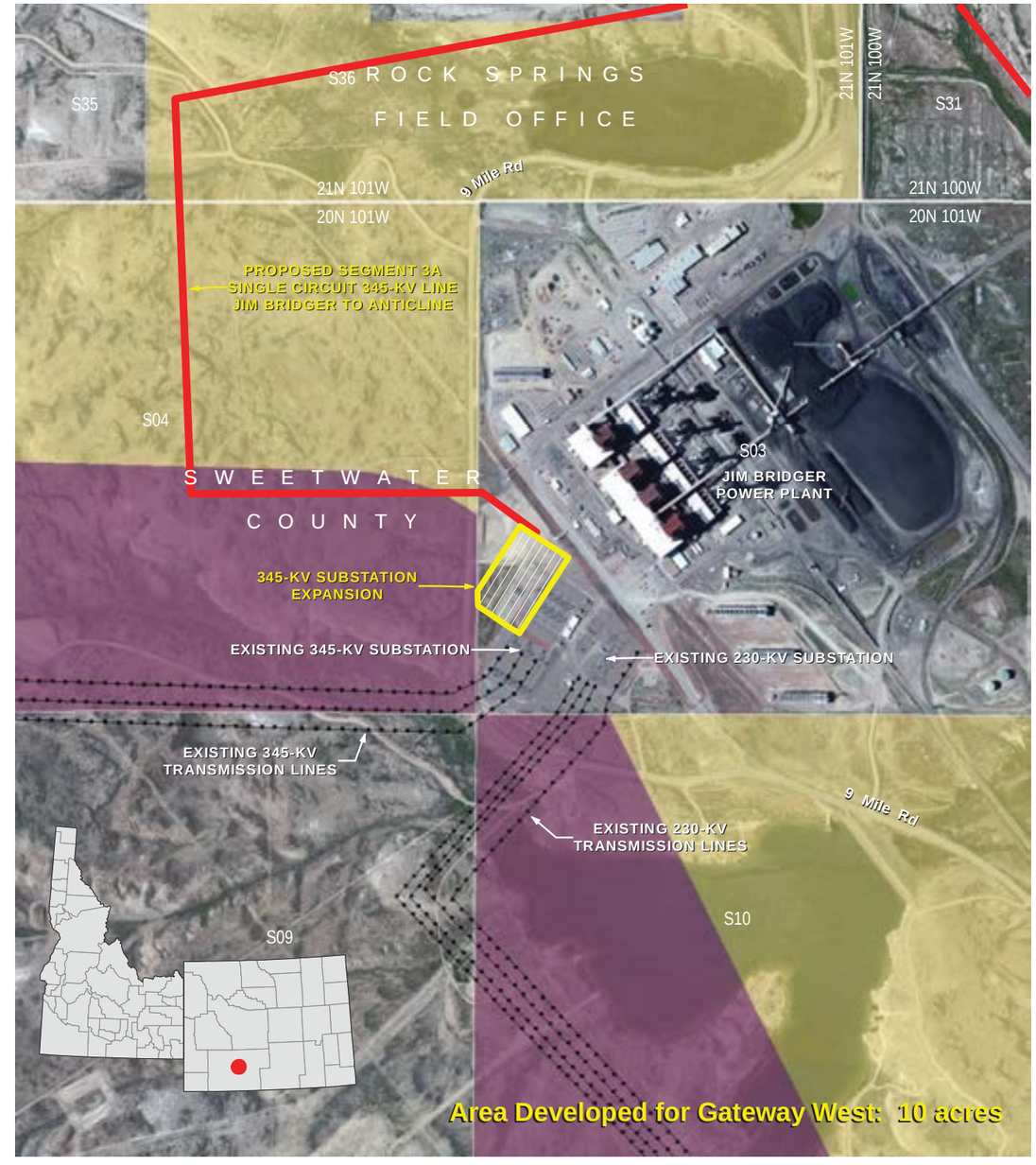
Land Status
- Private

Gateway West
Transmission Line Project

Populus
500-kV Substation
Figure A-14

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013



0 1,000
Feet
NAD 1983 UTM Zone 12N

Project Features
- Proposed Route
- Approximate Substation Development Area
- Milepost
- Tenth-Mile
- Existing Transmission Line

Land Status
- Bureau of Land Management
- Private
- West-wide Energy Corridor (WWEC)

Gateway West
Transmission Line Project

Jim Bridger
345-kV Substation
Figure A-13

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

POD Appendix A Substations_20130325 scott.flinders 3/27/2013

APPENDIX B
TRANSMISSION LINE AND SUBSTATION COMPONENTS

Appendix B

Transmission Line and Substation Components

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies) are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multipurpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Transmission Line and Substation Components document was prepared for Segment D because it will be constructed first; a revised document will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This appendix contains detailed information regarding the components of the transmission line and substation system evaluated in the Environmental Impact Statement (EIS). This appendix includes component descriptions (Section 2.0), provides details regarding construction of the system (Section 3.0), goes on to provide information regarding the operations and maintenance of the system (Section 4.0), and finally details the proposed abandonment and reclamation techniques (Section 5.0).

Detailed equipment specification and construction requirements contained elsewhere take precedence over the descriptions contained herein.

2.0 SYSTEM COMPONENTS

This section describes the various components of the transmission system for the Project, including the structures themselves, the conductors used, other hardware needed, the communication system, and access roads. Both the proposed and alternative special use structures are described herein.

2.1 Transmission Structures

2.1.1 Types of Transmission Line Support Structures

The proposed transmission line circuits typically will be supported by three types of structures: steel H-frame 230-kV and 345-kV structures and self-supporting single-circuit 500-kV lattice steel towers.[1] Figures 2.1-1 through 2.1-3 illustrate the typical tangent structure configurations, which will be the predominant types used for the Project. Tangent structures are designed to support the conductors where the line angle at the structure location is typically one degree or less, meaning the transmission line is essentially a straight line. Figures 2.1-4 and 2.1-5 illustrate the proposed and alternative right-of-way (ROW) design configurations.

In addition to the more typical tangent structure configurations, specialized structures are designed where the line must turn an angle. Each structure type is individually designed, depending on the line angle and the underlying soil and rock conditions, to withstand the pull of the wires in different directions. Dead-end and angle structures are heavier and have deeper foundations than tangent structures; 230-kV dead-end and angle structures are guyed.

<u>230-kV Steel H-Frame Structures</u>

The proposed 230-kV single-circuit line between the Windstar and Aeolus Substations (Segment 1W[a]) uses steel H-frame structures (Figure 2.1-1). The structures that will be replaced when reconstructing the existing 230-kV line between the Dave Johnston and Aeolus Substations (Segment 1W[c]) will also use steel H-frame structures.

The 230-kV steel H-frames use either dulled galvanized or self-weathering steel. Weathering steel is manufactured from a group of steel alloys that were developed to eliminate the need for painting or other protective finish. This type of steel alloy forms a stable rust-like appearance if exposed to the weather for several years. The average distance between H-frame structures is approximately 800 feet. Structure heights vary depending on terrain and the requirement to maintain minimum conductor clearances from ground. Typically, the 230-kV single-circuit H-frame structures have pole lengths ranging between 70 and 100 feet. Embedment depths are typically 10 percent of the pole length plus 2 feet, which in the case of this Project is expected to range between 9 and 12 feet. The typical structure heights above ground vary from 60 to 90 feet.

[1] A 5.1-mile interconnecting 345-kV transmission line (Segment 3A) will be constructed between the proposed Anticline Substation yard and the existing Jim Bridger Substation 345-kV yard to electrically connect the two substations.

345-kV Steel H-Frame Structures

The proposed 345-kV single-circuit line between the Anticline and Jim Bridger 345-kV Substations (Segment 3A) uses steel H-frame structures (Figure 2.1-2). The 345-kV steel H-frames use either dulled galvanized or self-weathering steel, similar to the 230-kV structures. The average distance between H-frame structures is approximately 800 feet. Structure heights vary depending on terrain and the requirement to maintain minimum conductor clearances from ground. Typically, the 345-kV single-circuit H-frame structures have pole lengths ranging between 95 and 125 feet. Embedment depths are typically 10 percent of the pole length plus 5 feet, which for 345-kV structures will range between 14 and 18 feet. The structure heights above ground vary from 80 to 110 feet. Depending on underlying soil and rock conditions, the 345-kV H-frames may be supported by steel-reinforced concrete drilled piers.

500-kV Galvanized Lattice Steel Structures

Lattice steel towers are fabricated with galvanized steel members treated to produce a dulled galvanized finish. The average distance between 500-kV towers is 1,200 to 1,300 feet. Structure heights vary depending on terrain and the requirement to maintain minimum conductor clearances from ground. The 500-kV single-circuit towers vary in height from 145 to 180 feet. Table 2.1-1 describes the approximate number and type of structures by segments, typical height, typical distances between structures, and temporary and permanent disturbance areas by structure.

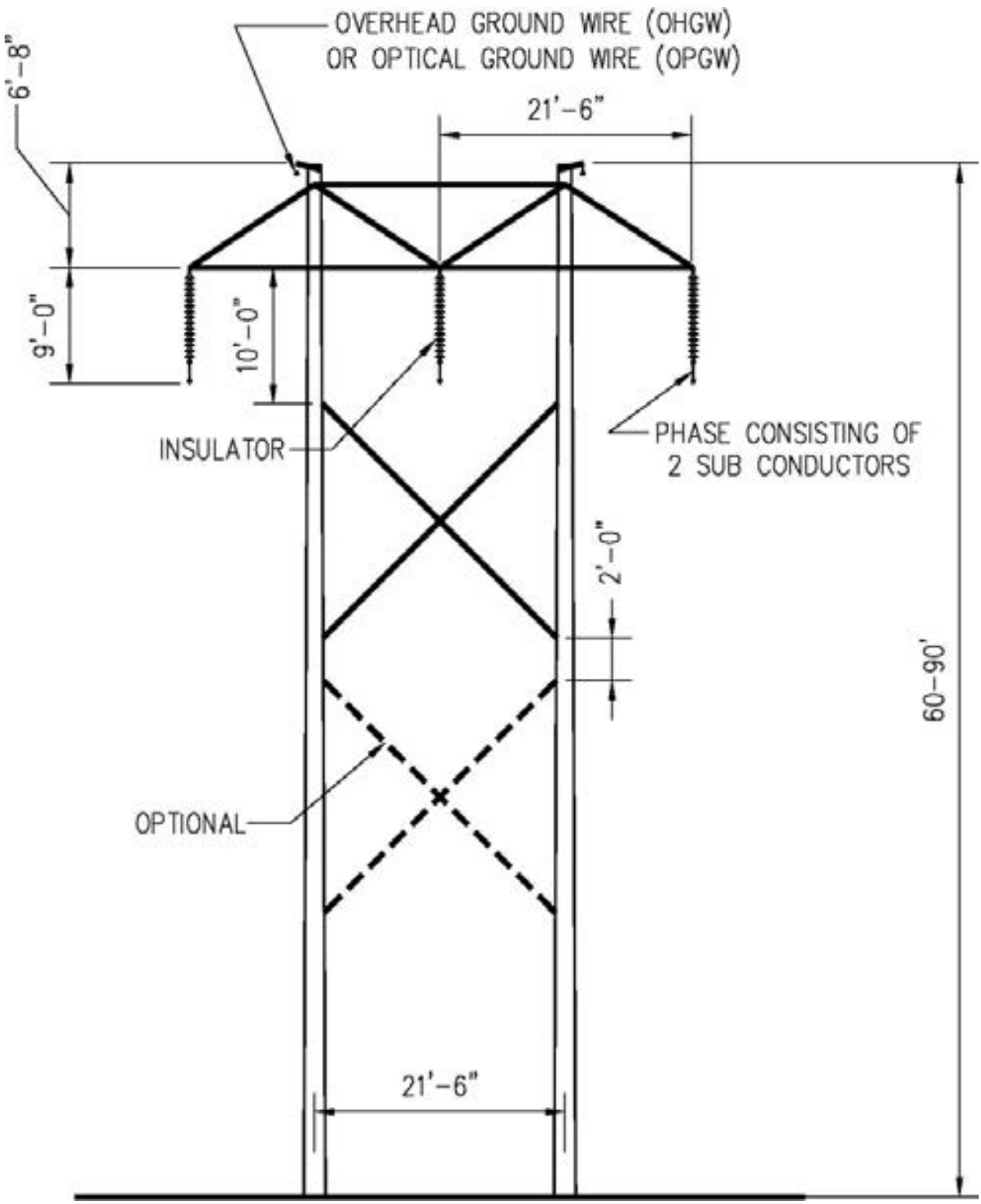


Figure 2.1-1. Proposed Tangent Single-Circuit 230-kV H-Frame Structure

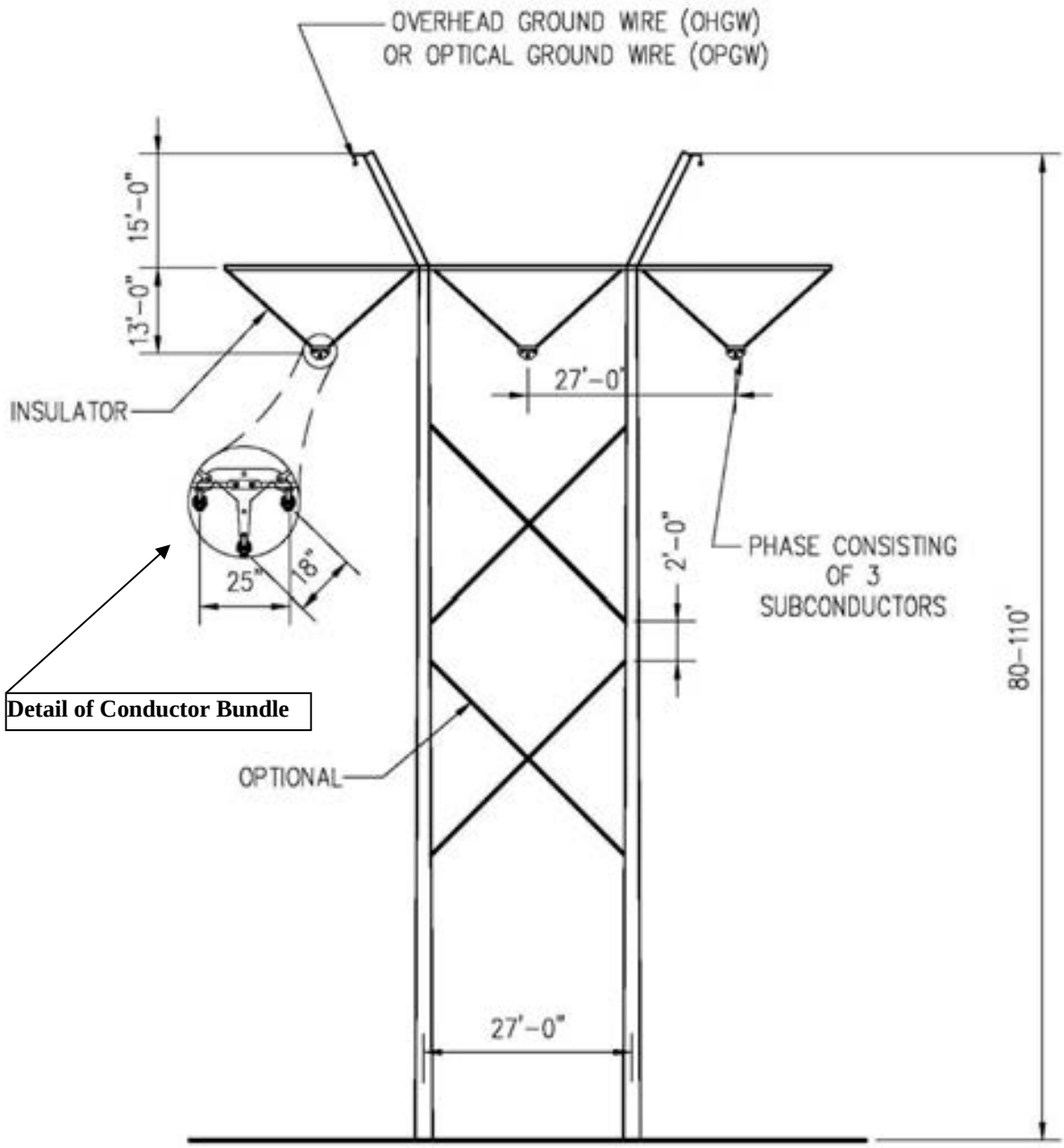


Figure 2.1-2. Proposed Tangent Single-Circuit 345-kV H-Frame Structure

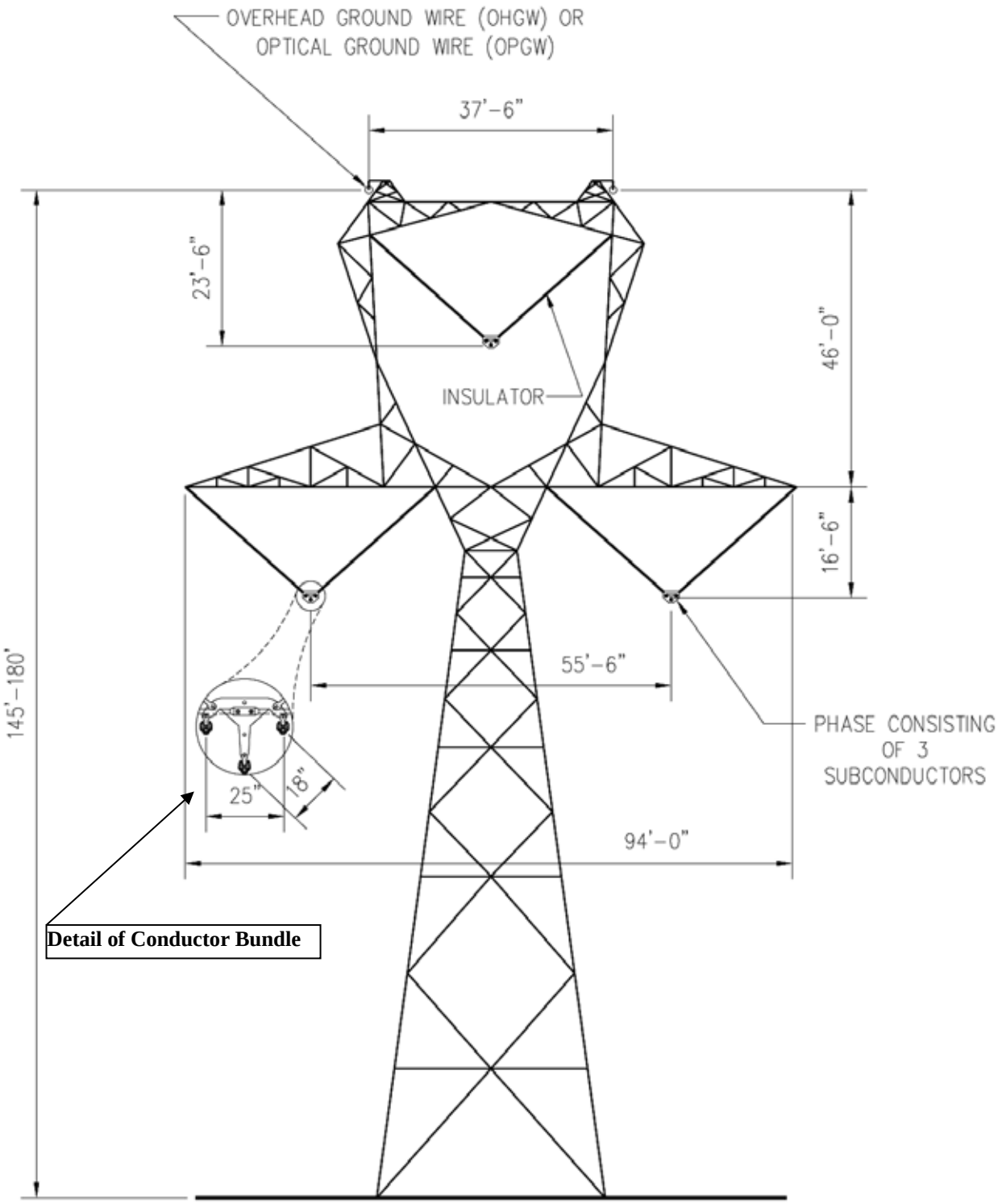
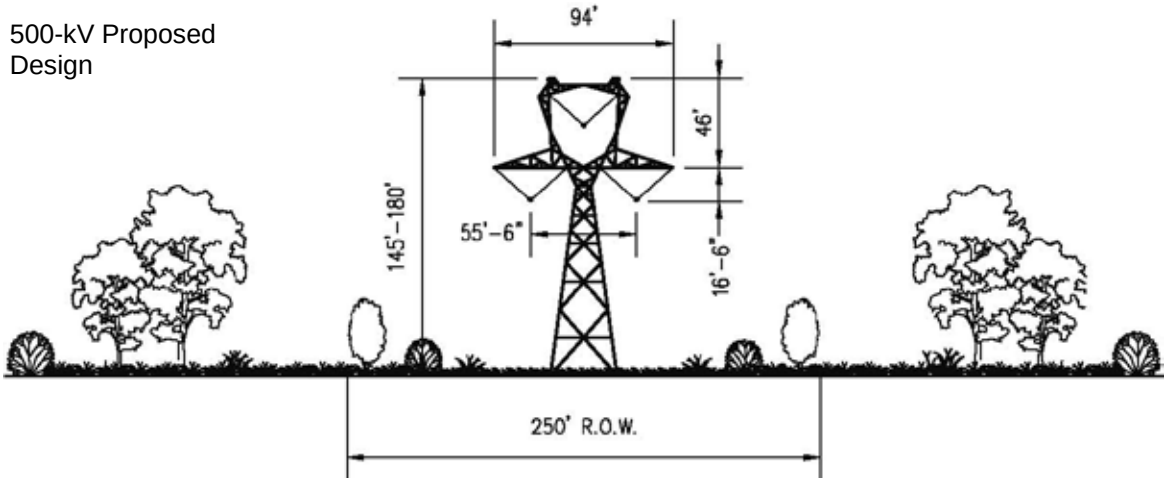
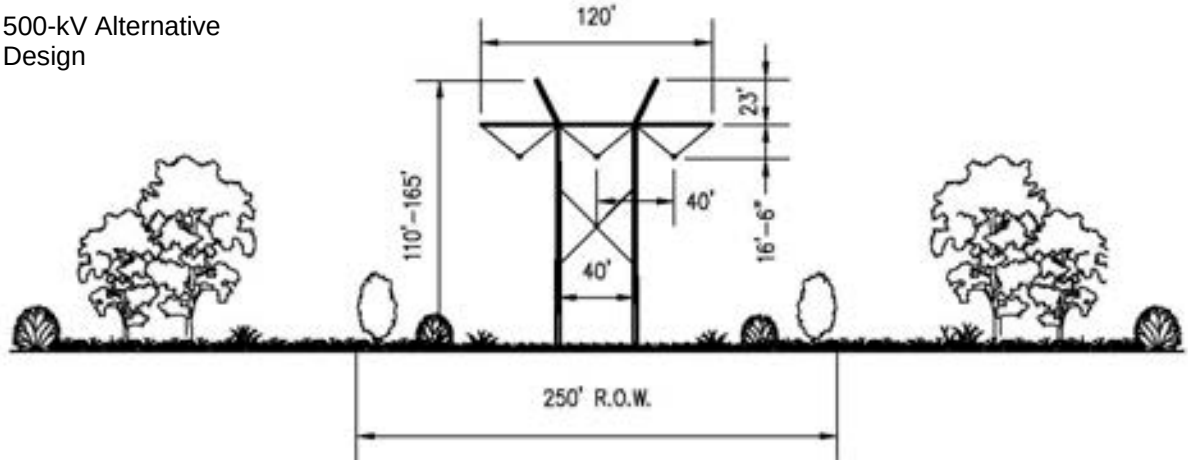


Figure 2.1-3. Proposed Tangent Single-Circuit 500-kV Lattice Steel Structure

500-kV Proposed Design



500-kV Alternative Design



345-kV Proposed Design

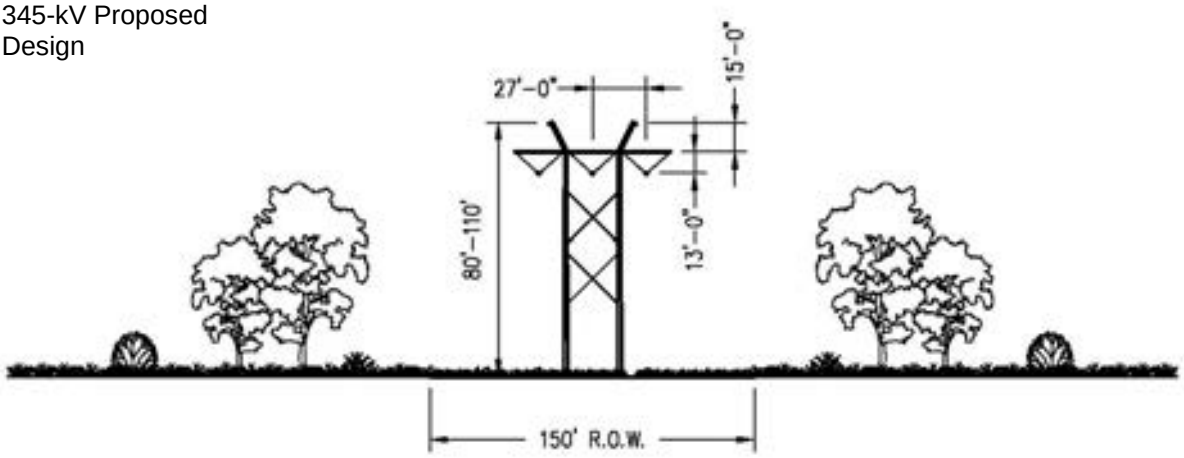


Figure 2.1-4. Proposed 500-kV and 345-kV Single-Circuit ROW Configurations

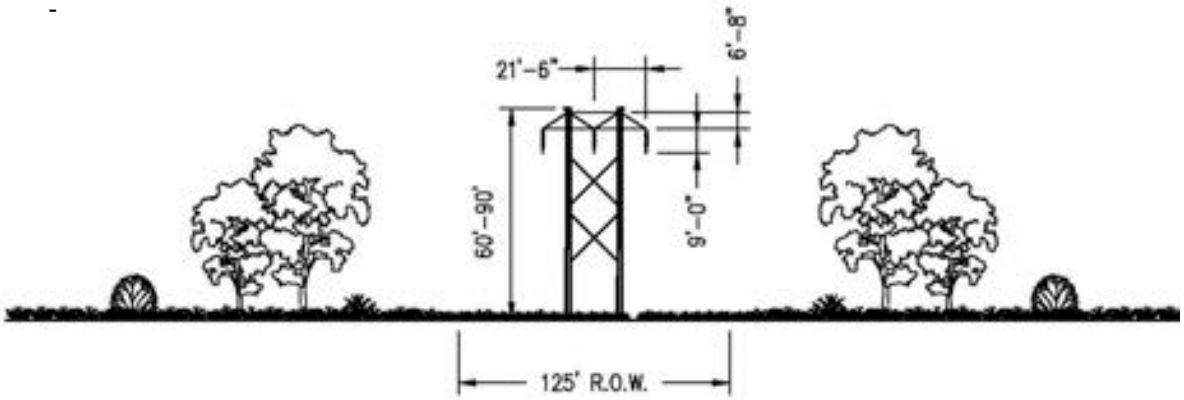


Figure 2.1-5. Proposed 230-kV Single-Circuit ROW Configuration

2.1.2 Structure and Conductor Clearances

Conductor phase-to-phase and phase-to-ground clearance parameters are determined in accordance with the National Electric Safety Code (NESC), ANSI C2, produced by the American National Standards Institute (ANSI). This code provides for minimum distances between the conductors and ground, crossing points of other lines and the transmission support structure, and other conductors, and minimum working clearances for personnel during energized operation and maintenance (O&M) activities.[2] Typically, the clearance of conductors above ground is 35 feet for 500 kV, 30 feet for 345 kV, and 28 feet for 230 kV. During detailed design, clearances may be increased to account for localized conditions.

[2] IEEE. (Institute of Electrical and Electronics Engineers) 2007. National Electrical Safety Code. New York, NY.

Table 2.1-1. Proposed Structure Configuration

Segment	Transmission Line Length (miles)	Structure Type	Typical Height (feet)	No. of Structures[1/]	Average Distance Between Structures[1/] (feet)	Temporary Disturbance Area per structure (sq. feet.)	Permanent Disturbance Area per structure (sq. feet.[2/])
1W(a)	73.8	230-kV Steel H-Frame Structure	60–90	531	800	ROW Width 125 feet x 150 feet = 0.43 acre	10 feet x 40 feet = 0.01 acre
1W(c)	73.6	230-kV Steel H-Frame Structure	60–90	547	Existing span lengths assumed to be 800	ROW Width 125 feet x 150 feet = 0.43 acre	10 feet x 40 feet = 0.01 acre
2	91.9	500-kV Single-Circuit Lattice Tower	145–180	390	1,200–1,300	ROW Width 250 feet x 250 feet = 1.43 acres	50 feet x 50 feet = 0.06 acre
3	45.9	500-kV Single-Circuit Lattice Tower	145–180	194	1,200–1,300	ROW Width 250 feet x 250 feet = 1.43 acres	50 feet x 50 feet = 0.06 acre
3A	5.1	345-kV Single-Circuit Tubular Steel H-Frame	80-110	25	800	ROW Width 150 feet x 150 feet = 0.52 acres	15 feet x 40 feet = 0.01 acre
4	197.6	500-kV Single-Circuit Lattice Tower	145–180	856	1,200–1,300	ROW Width 250 feet x 250 feet = 1.43 acres	50 feet x 50 feet = 0.06 acre

1/ Reasonable estimate from preliminary engineering. In infrequent locations where spans between structures exceed typical span lengths anticipated (up to approximately 1,200 feet to 1,800 feet depending on voltage and ROW width), the ROW may need to be increased to provide clearance from conductors blown toward the ROW edge.

2/ Permanent disturbance estimated based on size of structures and a reasonable distance around each to allow for annual ground inspection and the vegetation control needed to allow for safety and inspection.

2.1.3 Structure Foundations

The 500-kV single-circuit lattice steel structures each require four foundations with one on each of the four corners of the lattice towers. The foundation diameter and depth will be determined during final design and are dependent on the structure type and type of soil or rock present at each specific site. Typically, the foundations for the single-circuit tangent lattice towers are composed of steel-reinforced concrete drilled piers with a typical diameter of 4 feet and a depth of approximately 22 feet. Typical foundation diameters and depths for the single-circuit structure families are shown in Table 2.1-2.

Table 2.1-2. Foundation Excavation Dimensions

Structure	No. of Holes	Depth (feet)	Diameter (feet)	Concrete (cubic yards)
500-kV Single Circuit - Tangent Lattice Tower	4	22.0	4	41
500-kV Single Circuit - Small Angle Lattice Tower	4	24.5	4	46
500-kV Single Circuit - Medium Angle Lattice Tower	4	27.0	4	50
500-kV Single Circuit - Medium Dead-End Lattice Tower[1/]	4	29.5	5	86
500-kV Single Circuit - Heavy Dead-End Lattice Tower	4	32.0	5	93

1/ "Dead-end structure" typically refers to a structure that is placed at a point where the transmission line requires extra support due to a sharp change in vertical or horizontal direction.

The 230-kV and 345-kV single-circuit H-frame structures are directly embedded into the ground and do not require concrete foundations. The embedment depth is typically 10 percent of the pole length plus 2 feet for 230-kV and 10 percent of the pole length plus 5 feet for 345-kV, which for the Project is expected to be between 9 and 12 feet (230-kV) and between 14 and 18 feet (345-kV) based on the structure heights proposed for the Project. The diameter of the hole excavated for embedment is typically the pole diameter plus 18 inches. When a pole is placed in a hole, native or select backfill will be used to fill the voids around the perimeter of the hole.

Depending on underlying soil and rock conditions, the 345-kV H-frames may be supported by steel-reinforced concrete drilled piers. Additionally, all 345-kV angle structures will be self-supporting (i.e. no guys) such that they will require concrete drilled pier foundations. The foundation diameter and depth will be determined during final design and are dependent on the structure type and type of soil or rock present at each specific site. If required, each steel pole of a 345-kV structure will have its own drilled pier foundation.

2.2 Conductors

The proposed conductor for the 500-kV lines is 1,949.6 kcmil[3] 42/7 ACSR/TWD, "Athabaska/TW."[4] Each phase of a 500-kV three-phase circuit[5] is composed of three subconductors in a triple bundle configuration. The individual 1,949.6 kcmil conductors are bundled in a triangular configuration with spacing of 18 and 25 inches between subconductors (see Figure 2.1-2). The triple-bundled configuration is proposed to provide adequate current carrying capacity and to provide for a reduction in audible noise and radio interference as compared to a single large-diameter conductor. Each 500-kV subconductor has a 42/7 aluminum/steel stranding, with an overall conductor diameter of 1.504 inches and a weight of 2.199 pounds per foot and a non-specular finish[6].

For the 5.1 miles of Segment 3A, the proposed conductor for the 345-kV lines is 1,272 kcmil 45/7 ACSR "Bittern." Each phase of the 345-kV three-phase circuit is composed of three subconductors in a triple-bundle configuration. The individual 1,272 kcmil conductors are bundled in a triangular configuration with spacing of 18 and 25 inches between subconductors (see Figure 2.1-3). The triple-bundle configuration is proposed to provide adequate current carrying capacity and to provide for a reduction in audible noise and radio interference when compared to a single large-diameter conductor. Each 345-kV conductor has a 45/7 aluminum/steel stranding, with an overall conductor diameter of 1.345 inches and a weight of 1.432 pounds per foot and a non-specular finish.

[3] Kcmil (1000 cmils) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of circular mils. A circular mil (cmil) is the area of a circle with a diameter of one thousandth (0.001) of an inch.

[4] Aluminum/steel refers to the conductor material composition. The preceding numbers indicate the number of strands of each material type present in the conductor (i.e., 42/7 aluminum/steel stranding has 42 aluminum strands wound around 7 steel strands).

[5] For transmission lines, a circuit consists of three phases. A phase may consist of one conductor or multiple conductors (i.e., subconductors) bundled together.

[6] Non-specular finish refers to a "dull" finish rather than a "shiny" finish.

At 500 kV and 345 kV, where multiple conductors are utilized in a bundle for each phase, the bundle spacing is maintained through the use of conductor spacers at intermediate points along the conductor bundle between each structure. The spacers serve a dual purpose: in addition to maintaining the correct bundle configuration and spacing, the spacers are also designed to damp out wind-induced vibration in the conductors. The number of spacers required in each span between towers is determined during the final design of the transmission line.

The proposed conductor for the new 230-kV line and for reconstructing of the portion of the existing Dave Johnston – Rock Springs 230-kV line between the Dave Johnston Power Plant and existing Shirley Basin Substation is 1,272 kcmil 45/7 ACSR "Bittern." Each phase of a 230-kV three-phase circuit is composed of two subconductors in a double-bundle configuration. The individual 1,272 kcmil conductors are bundled in a vertical configuration with spacing of 18 inches. The double-bundle configuration is proposed to provide adequate current carrying capacity and to provide for a reduction in audible noise and radio interference when compared to a single large-diameter conductor. Each 230-kV conductor has a 45/7 aluminum/steel stranding, with an overall conductor diameter of 1.345 inches and a weight of 1.432 pounds per foot and a non-specular finish.

The proposed conductor for reconstructing the portion of the existing Dave Johnston – Rock Springs 230-kV line between the existing Shirley Basin Substation and the proposed Aeolus Substation is 1,557.4 kcmil 36/7 ACSS/TW "Potomac." Each phase of a 230-kV three-phase circuit is composed of two subconductors in a double-bundle configuration. The individual 1,557.4 kcmil conductors are bundled in a vertical configuration with spacing of 18 inches. The double-bundle configuration is proposed to provide adequate current carrying capacity and to provide for a reduction in audible noise and radio interference when compared to a single large-diameter conductor. Each 230-kV conductor has a 36/7 aluminum/steel stranding, with an overall conductor diameter of 1.345 inches and a weight of 1.755 pounds per foot and a non-specular finish.

Vertical double bundle configuration does not use spacers. Spacers are required only in the last span into a substation where the bundle rolls from vertical to horizontal.

2.3 Other Hardware

2.3.1 Insulators

As shown in Figure 2.1-1, insulator assemblies for 230-kV H-frame tangent structures will consist of one insulator string hung vertically from the cross arm in the form of an "I." As shown in Figures 2.1-2 and 2.1-3, insulator assemblies for 345-kV and 500-kV tangent structures will consist of two strings of insulators normally in the form of a "V." These strings are used to suspend each conductor bundle (phase) from the structure, maintaining the appropriate electrical clearance between the conductors, the ground, and the structure. The V-shaped configuration of the 345-kV and 500-kV insulators also restrains the conductor so that it will not swing into the structure in high winds. Dead-end insulator assemblies for 230-kV, 345-kV, and 500-kV lines will use an I-shaped configuration, which consists of insulators connected horizontally from either a tower dead-end arm or a dead-end pole in the form of an "I." Insulators are composed of grey

porcelain or green-tinted toughened glass or single unit polymer (non-ceramic insulators). Insulators will be made of materials that have reduced potential to reflect and refract light.

2.3.2 Grounding Systems

AC transmission lines such as the Gateway West transmission lines have the potential to induce currents on adjacent metallic structures such as transmission lines, railroads, pipelines, fences, or structures that are parallel to, cross, or are adjacent to the transmission line. Induced currents on these facilities occur to some degree during steady-state operating conditions and during a fault condition on the powerline. For example, during a lightning strike on the line, the insulators may flash over, causing a fault condition on the line and current flows down the structure through the grounding system (i.e., ground rod or counterpoise) and into the ground. The magnitude of the effects of the AC induced currents on adjacent facilities is highly dependent on the magnitude of the current flows in the transmission line, the proximity of the adjacent facility to the line, and the distance (length) for which the two facilities parallel one another in proximity.

The methods and equipment needed to mitigate these conditions will be determined through electrical studies of the specific situation. All fences, metal gates, pipelines, metal buildings, and other metal structures adjacent to the ROW that cross or are within the transmission line ROW will be grounded. If applicable, grounding of metallic objects outside of the ROW may also occur, depending on the distance from the transmission line as determined through the electrical studies. These actions take care of the majority of induced current effects on metallic facilities adjacent to the line by shunting the induced currents to ground through ground rods, ground mats, and other grounding systems, thus reducing the effect that a person may experience when touching a metallic object near the line (i.e., reduce electric shock potential). In the case of a longer parallel facility, such as a pipeline parallel to the Project over many miles, additional electrical studies are undertaken to identify any additional mitigation measures (more than the standard grounding practices) that need to be implemented to prevent damaging currents from flowing onto the parallel facility, and to prevent electrical shock to a person that may come in contact with the parallel facility. Some of the typical measures that could be considered for implementation, depending on the degree of mitigation needed, could include:[7]

- **Fault Shields –** shallow grounding conductors connected to the affected structure adjacent to overhead electrical transmission towers, poles, etc. They are intended to provide localized protection to the structure and pipeline coating during a fault event from a nearby electric transmission power system.
- **Lumped Grounding –** localized conductor or conductors connected to the affected structure at strategic locations (e.g., at discontinuities). They are intended to protect the structure from both steady-state and fault AC conditions.
- **Gradient Control Wires –** a continuous and long grounding conductor or conductors installed horizontally and parallel to a structure (e.g., pipeline section)

[7] NACE International. 2003. Mitigation of Alternating Current and Lightning Effects on Metallic Structures and Corrosion Control Systems.

at strategic lengths and connected at regular intervals. These are intended to provide protection to the structure and pipeline coating during steady-state and fault AC conditions from nearby electric transmission power systems.

- **Gradient Control Mats –** typically used for aboveground components of a pipeline system, these are buried ground mats bonded to the structure, and are used to reduce electrical step and touch voltages in areas where people may come in contact with a structure subject to hazardous potentials. Permanent mats bonded to the structure may be used at valves, metallic vents, cathodic protection test stations, and other aboveground metallic and nonmetallic appurtenances where electrical contact with the affected structure is possible. In these cases there is no "standard" solution that would solve these issues every time. Instead, each case must be studied to determine the magnitude of the induced currents and the most appropriate mitigation given the ground resistivity, distance paralleled, steady-state and fault currents, fault clearing times expected on the transmission line, and distance between the line and the pipeline, to name a few of the parameters. If the electrical studies indicate a need to install cathodic protection devices on a parallel pipeline facility, a distribution supply line interconnection may be needed to provide power to the cathodic protection equipment.

During final design of the transmission line segments, appropriate electrical studies will be conducted to identify the issues associated with paralleling other facilities and the types of equipment needed to be installed (if any) to mitigate the effects of the induced currents.

2.3.3 Minor Additional Hardware

In addition to the conductors, insulators, and overhead shield wires, other associated hardware will be installed on the tower as part of the insulator assembly to support the conductors and shield wires. This hardware includes clamps, shackles, links, plates, and various other pieces composed of galvanized steel and aluminum.

A grounding system will be installed at the base of each transmission structure that consists of copper ground rods embedded into the ground in immediate proximity to the structure foundation and connected to the structure by a buried copper lead. When the resistance to ground for each transmission structure is greater than 25 ohms with the use of ground rods, counterpoise is installed to lower the resistance with the intent to achieve 25 ohms or less. Counterpoise consists of a bare copper-clad or galvanized-steel cable buried a minimum of 12 inches deep, extending from structures (from one or more legs of structure) for approximately 200 feet within the ROW.

Other hardware that is not associated with the transmission of electricity may be installed as part of the Project. This hardware may include aerial marker spheres or aircraft warning lighting as required for the conductors or structures per Federal Aviation Administration (FAA) regulations.[8] Structure proximity to airports and structure height are the determinants of whether FAA regulations would apply based on an assessment of wire/tower strike risk. Structure lighting will typically not be required because

[8] U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular AC 70/7460-1K Obstruction Marking and Lighting, August 1, 2000; and Advisory Circular AC 70/7460-2K Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace, March 1, 2000.

proposed structures will typically be less than 200 feet tall and will not be near airports that require structure lighting. Site-specific exceptions may be made to comply with U.S. Air Force requirements in restricted air space near the Jarbidge Military Operations Area and the Saylor Creek Air Force Range, or to comply with FAA requirements where structure height adjustments are not feasible or where structures are near regulated airports.

2.4 Communication Systems

2.4.1 Optical Ground Wire

Reliable and secure communications for system control and monitoring of the Project is very important to maintain the operational integrity of the Project and of the overall interconnected system. Primary communications for relaying and control are provided via the optical ground wire (OPGW) that will be installed on the transmission lines. For the 500-kV transmission lines, a secondary communications path is provided by the Companies' existing microwave system, which is currently installed from the Central Wyoming area near the Windstar Substation west to existing substations near Boise, Idaho. A secondary communication path may also be developed using a powerline carrier. No new microwave sites are anticipated for the Project. Updated microwave equipment may be installed at existing sites and at the substations.

Each structure has two lightning protection shield wires installed. For the 500-kV single-circuit lattice steel structures, shield wires are installed on the peaks of each of the structures (see Figure 2.1-2). On the 230-kV and 345-kV H-frame structures (see Figure 2.1-1) these lightning protection shield wires are installed near the top of each pole. On 500-kV, 345-kV, and 230-kV lines where communication is required, one of the shield wires is composed of extra high strength steel wire with a diameter of 0.495 inch and a weight of 0.517 pound per foot. The second shield wire is an OPGW constructed of aluminum and steel, which carries 48 glass fibers within its core. On the 500-kV lines, the OPGW has a diameter of 0.637 inch and a weight of 0.375 pound per foot. On the 345-kV and 230-kV lines, the OPGW has a diameter of 0.465 inch and a weight of 0.270 pound per foot. The glass fibers inside the OPGW shield wire will provide optical data transfer capability among the Companies' facilities along the fiber path. The data transferred are required for system control and monitoring. On lines where communication is not required, both of the shield wires are composed of extra high strength steel wires with a diameter of 0.495 inch and a weight of 0.517 pound per foot.

For Gateway West, all 500-kV line segments are designed to carry an OPGW. For the 230-kV lines, Segment 1W(a) and a portion of 1W(c) are designed to carry an OPGW. Between the new Anticline Substation and the existing Jim Bridger Substation, two communication paths (underground or aerial) are required for redundancy. One path is carried by the 345-kV line (Segment 3A). The second path is carried on Segment 4 for a couple of miles from Anticline to a point where the segment crosses existing 230-kV lines. At this point, the OPGW is routed along the existing 230-kV lines either overhead on the existing structures by replacing an existing shield wire with an OPGW, or installing the communication wire underground within the existing 230-kV ROW to Jim Bridger Substation.

2.4.2 Regeneration Stations

As the data signal is passed through the optical fiber cable, the signal degrades with distance. Consequently, signal regeneration stations are required to amplify the signals if the distance between substations or regeneration stations exceeds 55 miles. As summarized in Table 2.4-1, a total of six regeneration stations are required.

Table 2.4-1. Proposed Regeneration Station Locations

Segment	Number	Total Construction (Acres)	Total Operations (Acres)
Segment 1W(a) – Windstar to Aeolus	1	1	0.5
Segment 2 – Aeolus to Creston	1	1	0.5
Segment 3 – Creston to Anticline	1	1	0.5*
Segment 4 – Anticline to Populus	3	3	1.5

* This regeneration station will be located in the vicinity of the Creston site.

A regeneration station may be housed within a substation control house in those cases where a substation is located along or near the final transmission route at an appropriate milepost; otherwise, land must be obtained or additional area requested. Where a new site is required, the typical site is 100 feet by 100 feet, with a fenced area of 75 feet by 75 feet. A 12-foot- by 32-foot- by 9-foot-tall building or equipment shelter (metal or concrete) is placed on the site, and access roads to the site and power from the local electric distribution circuits are required. An emergency generator with a liquid petroleum gas fuel tank is installed at the site inside the fenced area. Two diverse cable routes (aerial and/or buried) from the transmission ROW to the equipment shelter are required. Figure 2.4-1 illustrates the plan arrangement of a typical regeneration station.

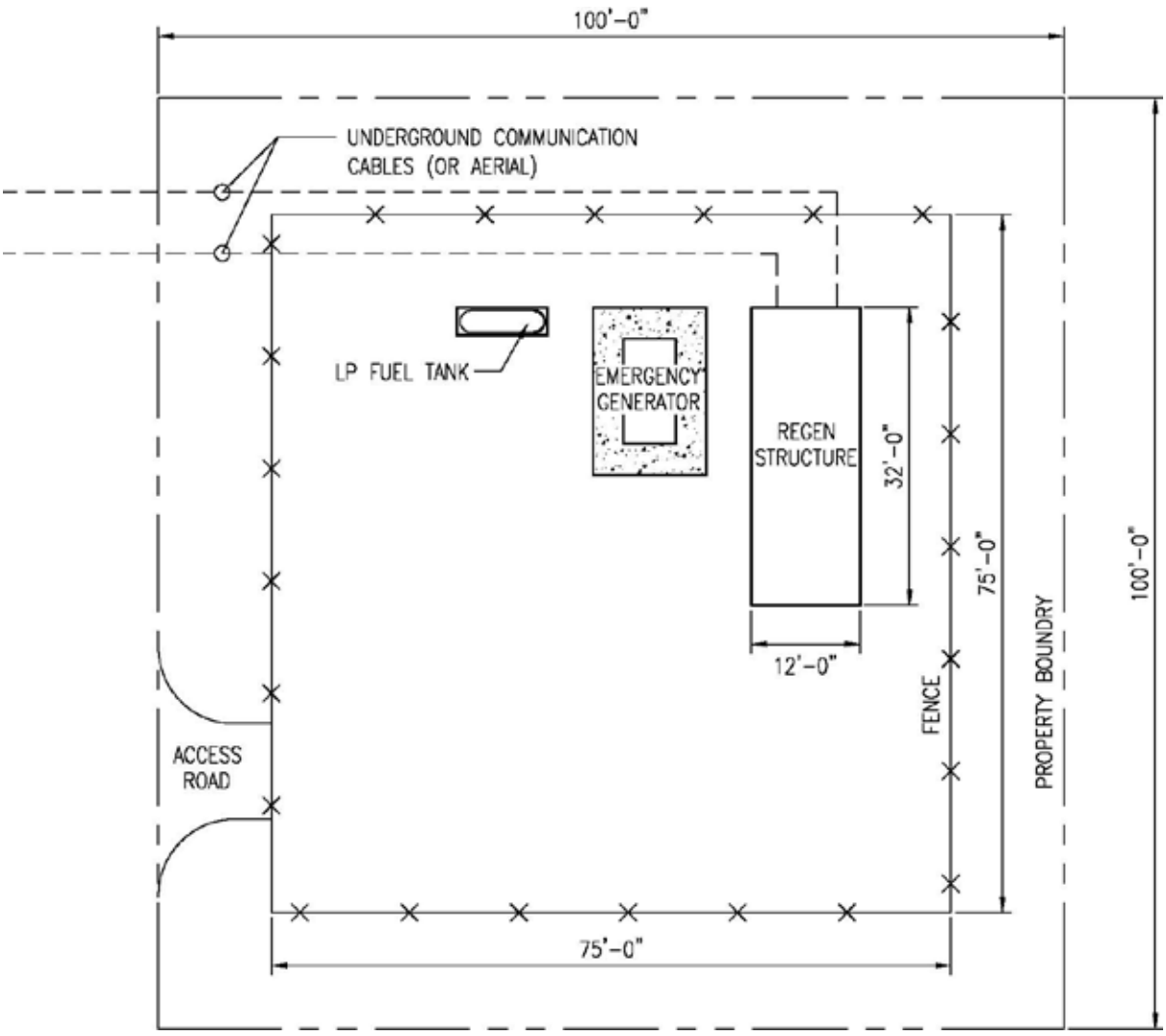


Figure 2.4-1. Typical Regeneration Station Site

2.5 Roads Used During Construction and Operation

Access roads are an essential part of the construction and operation of the Gateway West transmission line. Roads used for operation will be the same roads used during construction, thereby minimizing the extent of new road construction. Large foundation auger equipment, heavily loaded trucks, cranes, and specialized line construction equipment will be required for construction, maintenance, and emergency reclamation activities. Annual ground based inspections require vehicular access using 4x4 trucks or 4x4 all-terrain vehicles (ATVs) to each structure site. Table 2.5-1 summarizes the four types of roads needed for accessing the transmission line structures for the Project.

The only temporary roads are those that are constructed to access temporary use areas, where needed, including multipurpose areas and fly yards.

Table 2.5-1. Typical Road Requirements for the Transmission Line System

Road Type	Access Roads for Construction	Access Roads for Routine Operations	Access Roads for Non-Routine Operations
Existing roads requiring no improvement	No change	No change	No change
Existing roads requiring improvement	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	For routine activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation ("two-track").	For non-routine maintenance requiring access by larger vehicles, the full width of the access road may be used. Roads will be repaired, as necessary, but will not be routinely graded. In order to preserve the ability to enter rapidly, the road structure (cuts and fills) will be left in place.
New roads	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	For routine activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation ("two-track").	
Temporary roads	Unsurfaced 14-foot-wide straight sections of road and 16- to 20-foot-wide sections at corners	None; contours will be restored, and the road will be ripped and seeded.	None

2.5.1 Construction Access Roads

During construction, vehicular access will be required to each structure. New access roads will be constructed and existing roads widened as needed to provide a 14-foot-wide travel way. Roads not required for operations will be restored to their original condition or left as is, depending on landowner/land management agency requirements.

The largest of the heavy equipment needed, which dictates the minimum needed road dimensions, is a truck-mounted aerial lift crane, 100,000 pounds gross vehicle weight, 8x8 drive, 210-foot telescoped boom. Vehicle width is 8'6" (102 inches) or less and the wheelbase is approximately 25 feet. To accommodate this equipment, the road specifications require a 14-foot-wide road top (travel way) and 16- to 20-foot-wide road width in turns. The required road disturbance area and travel way in areas of rolling to hilly terrain will require a wider disturbance to account for cuts and fills, turning radii, and/or where vehicles are required to pass one another while traveling in opposite directions.

Access road construction employs heavy equipment including bulldozers, front-end loaders, dump trucks, backhoes, excavators, both tracked and rubber-tired, and graders. Other specialized equipment, including boom trucks to install culverts in some areas, will be used where needed. Roads will be built to provide a stable, permanent 14-foot-wide travel surface at straight sections and 16- to 20-foot wide travel surface at turns. Depending on the side slope, this can include cuts and fills, crowning and ditching, at-grade water bars, and various kinds of waterbody crossings. Figures 2.5-1 and 2.5-2 show the typical cross-sections created during construction of access roads.

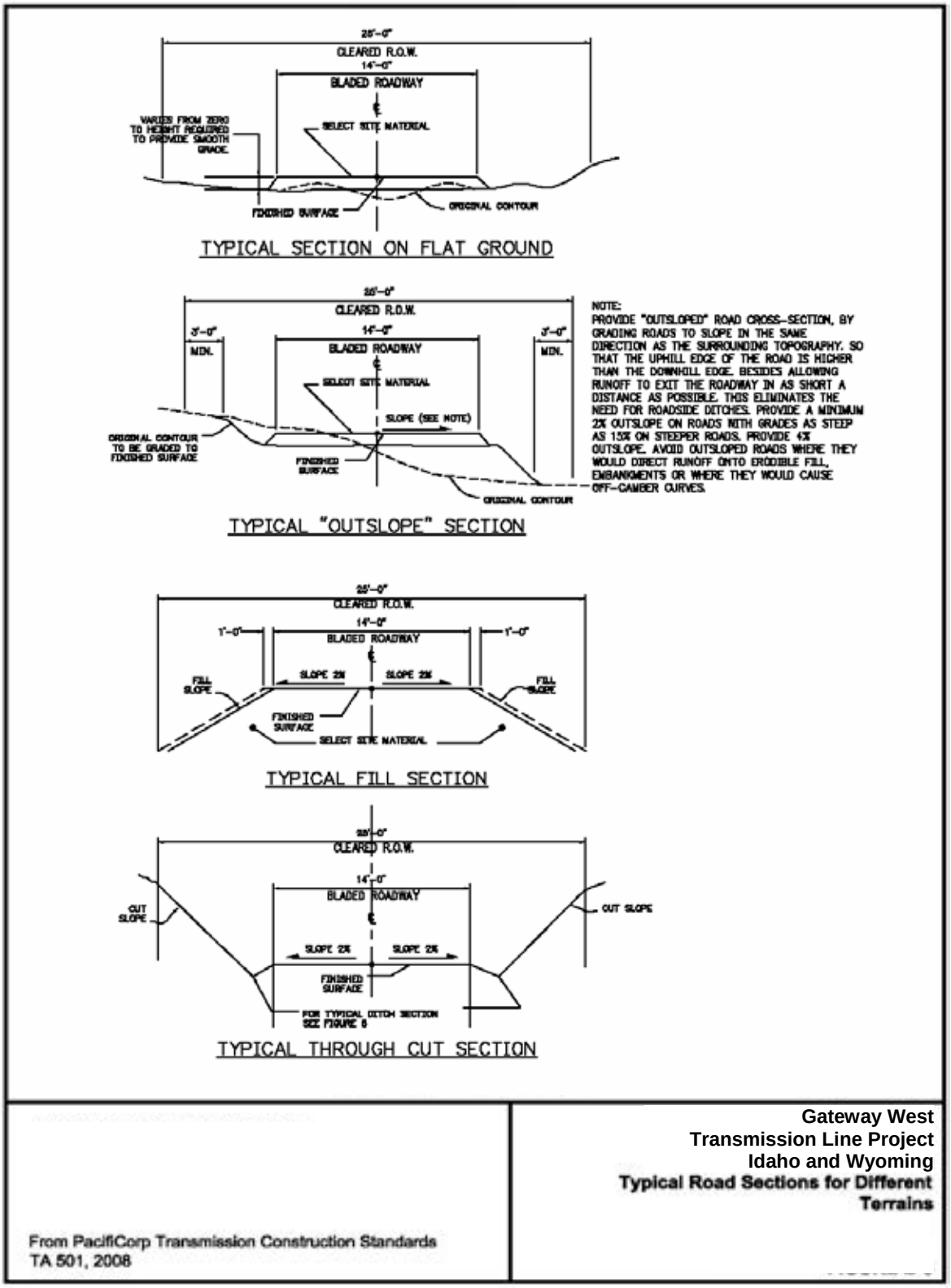


Figure 2.5-1. Typical Road Section for Different Terrains

TA 503

Roads—Water Bars and Water Dips

A. Scope

This standard describes drainage methods, including water bars, water dips, ditches, and outsloping, which can be used where intermittent or permanent streams cross roadways. Depending on the method used, drainage structures should be installed during or after basic road construction (see TA 501, *Roads—Construction*). For information on ditches and culverts see TA 504, *Roads—Culvert Installation*.

On level terrain, road construction may only require back-dragging a blade to remove brush to facilitate construction. Water bars and dips may not be necessary.

In undulating or mountainous terrain, water bars or water dips shall be used to control erosion.

The BLM or US Forest Service may require special designs for road design.

On privately owned land, both PacifiCorp and the property owner shall approve a plan to best control erosion on rights-of-way roads.

Figure 1—A water bar effectively intercepts the surface water and diverts it from the road

B. Water Bars

Water bars are narrow structures which can be constructed at various depths. Deep bars are generally used on roads closed to vehicle traffic. Figure 1 shows a typical shallow water bar constructed across a road.

Water bars can be constructed with hand tools, but bulldozers are most commonly used. It is best to start at the end of the road and work outward so the bars are not damaged with frequent crossing by heavy machinery.

Table 1—Distance Required Between Water Bars

Road grade (%)	Distance (feet)
2	250
5	135
10	80
15	60
20	45
25	40
30	35

Source: Kochenderfer 1970, p. 28

Water bars should be installed at an approximate 30° angle downslope. Figure 2 shows dimensions for construction of water bars and water dips with and without drainage

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Figure 2.5-2. Water Bars and Dips (TA 503, 1 of 4 pages)

TA 503

ditches to be used on access and right-of-way roads. The outflow end of the water bar should prevent water from accumulating and should not flow directly into a stream. This will allow sediment to settle out of the water, preventing erosion. As a supplement to water bars on closed roads, logging slash can be lopped and scattered, grass can be planted, or both. Table 1 shows recommended spacing between water bars for various road grades.

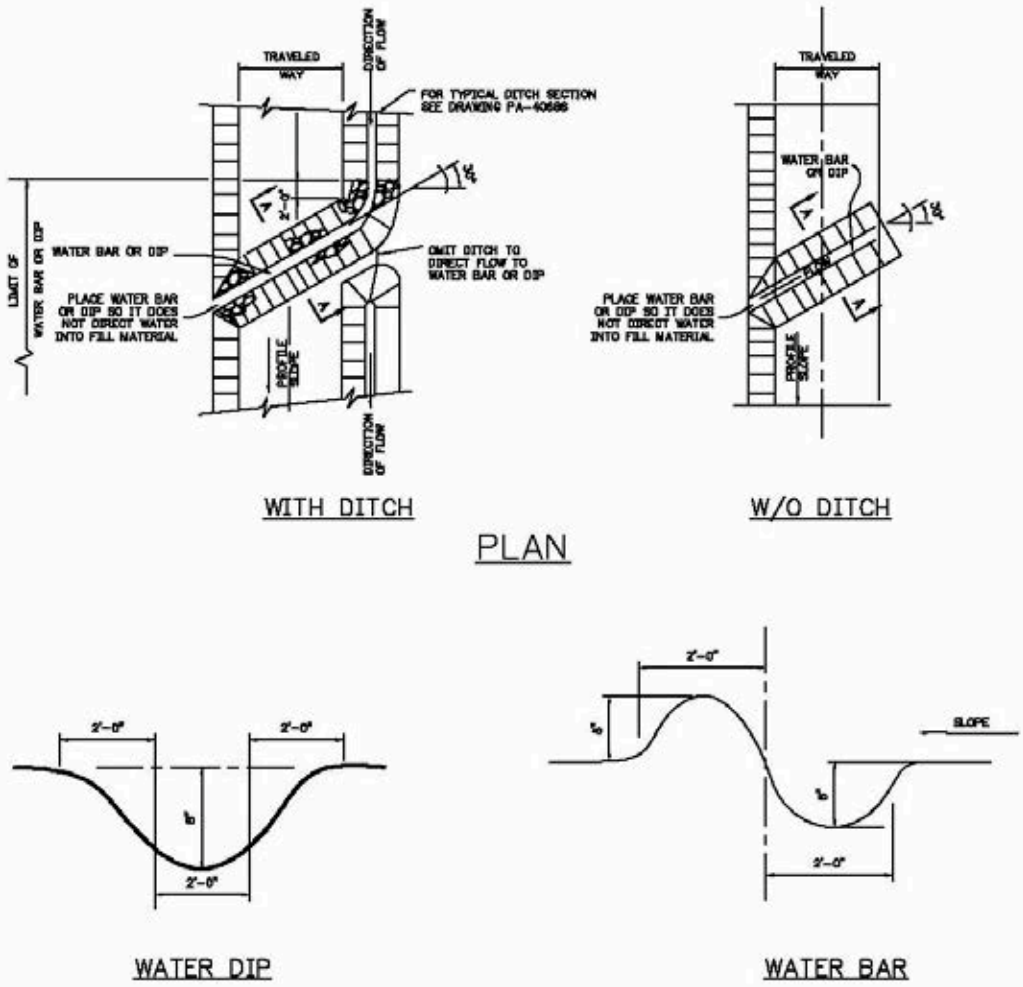

Figure 2—Water Bar and Dip Construction Plan and Profile

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Figure 2.5-2. Water Bars and Dips (TA 503, 2 of 4 pages)

TA 503

C. Broad-Based Drainage Dips

Broad-based drainage dips are easily maintained and do not increase wear on vehicles or reduce hauling speed when properly installed. These dips shall not be used on roads graded in excess of 10 percent (see Figure 3).

Table 2 lists the spacing distances of broad-based dips, as computed with the formula shown in Figure 3.

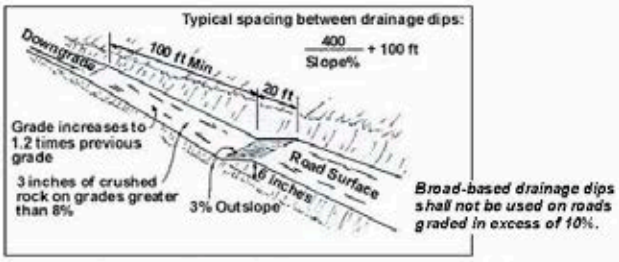

Figure 3—Typical Spacing Between Drainage Dips

Table 2—Minimum Distance Needed Between Drainage Dips

Road grade (%)	Distance (feet)
2 - 4	300 - 200
5 - 7	180 - 160
8 - 10	150 - 140

Source: Kochenderfer 1970, pg.19, 25

As with a water bar, care shall be taken to ensure adequate drainage at the outflow of a dip. Broad-based drainage dips shall never be designed to discharge directly into a stream. The discharge area shall be protected with stone, grass, sod, heavy litter cover, brush, logs, or other natural material which will reduce the velocity of the water. Natural litter may be adequate in many cases if the terrain is not too steep.

Close attention shall be paid to construction of broad-based drainage dips, as they are often made too small. Figure 3 shows minimum dimensions. Dips shall be armored with crushed rock or gravel.

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Deviation from this standard requires advanced approval. Contact the standards engineering manager for approval process and forms.

Figure 2.5-2. Water Bars and Dips (TA 503, 3 of 4 pages)

TA 503

Figure 4 shows a practical example of how a broad-based drainage dip can be used. A drainage dip is effective in controlling water on the road and does not significantly slow the speed of vehicles. The local drainage shall dictate how often these dips shall be used.

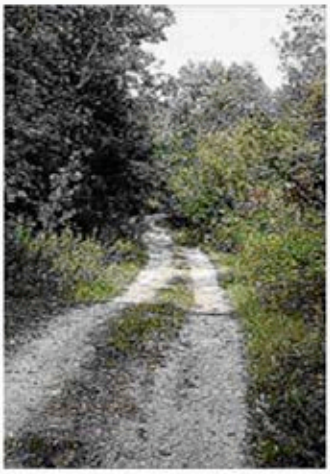

Figure 4—Broad-Based Drainage Dip

PACIFICORP A MIDAMERICAN ENERGY HOLDINGS COMPANY	Roads—Water Bars and Water Dips	Transmission Construction Standard
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Figure 2.5-2. Water Bars and Dips (TA 503, 4 of 4 pages)

Construction of new access roads begins with vegetation removal. Merchantable timber is cut and yarded to landings where the logs can be loaded on to trucks and hauled to market. Non-merchantable logs are stored along the edge of the ROW for later use in site reclamation. Smaller vegetation will be lopped and scattered outside the road prism. Topsoil will be stripped from the road prism as required by federal land management agencies or landowners. Topsoil will be stored adjacent to the road or in a nearby workspace. Appropriate erosion control devices will be installed to reduce erosion or loss of the topsoil, including but not limited to, tackifiers to prevent wind erosion and fugitive dust and silt fencing to prevent sediment runoff. Road surfaces will be stabilized if needed with road base but will not be routinely paved with asphalt or concrete. Access roads will have either dirt surfaces or have road base as surfacing where needed. As needed, the construction pad and access road will be graded to allow for safe access and construction. The grading may include cut and fill as needed to achieve a workable safe surface.

"New Roads" will receive one of the following treatments:

- In areas of rolling to hilly terrain, roads may require blading as shown on Figure 2.5-1 for ditches, realignment, widening, cut and fill, graveling, or installation of culverts.
- In flatter areas overland travel may be used. Overland travel means following a staked road alignment, either cutting the vegetation and leaving the root crowns and then driving over it (clear-and-cut), or just driving over the vegetation if it is low enough (drive-and-crush). In either case, a blade may be used if needed to remove obstructions in limited places.

"Existing Roads Needing Improvement" will have varied conditions across the Project. These roads were classified as such to recognize that the Contractor may need to perform some level of improvement to provide the safe travel way required for construction. Based on the Contractor's construction plan and the construction techniques employed, it is anticipated that sections of the access roads classified as "Existing Roads Needing Improvement" will receive one of the following treatments.

- The existing road will be sufficient and provide a safe travel way throughout the duration of line construction.
- The existing road will be sufficient and provide a safe travel way during a portion of the line construction period. Weather events, progressive damage due to heavy use and larger heavier equipment needed are examples of reasons that an existing road would need some level of construction at one or more intermediate points during line construction.
- The existing road at Project initiation needs more extensive construction, including blading, prior to the start of line construction.
- Portions of these roads will involve clear-and-cut, or just drive-and-crush.

Section 8.0 of Appendix L – Framework Traffic and Transportation Management Plan describes road treatments in greater detail.

The selection of access road locations and treatment is determined through a design and construction review process that is currently underway involving several steps:

- A system of primary and secondary roads was identified;
- The system is reviewed by the agencies and large landowners;
- Revisions are made to the system and the remaining primary and secondary roads are included in the ROW grants and special use authorization (SUA). It is the intent of the BLM to authorize a ROW grant width of 50 feet within which disturbance may occur as described above;
- The selected Construction Contractor reviews the road layout. Review will include designation of the type of disturbance and identification of any changes to the primary road system;
- The agencies will review the final plan. Only final primary roads will be authorized for use during construction. Additional changes to the road system will occur through the variance process described in Appendix C – Environmental Compliance Management Plan;
- The Companies will be obligated to pay rental on all primary and secondary roads included in the final plan; and
- At the end of construction, BLM and the Companies will modify the ROW grant to relinquish the roads not required for operation.

2.5.2 Operations Access Roads

Transmission line access roads are necessary for access to, and maintenance of, transmission lines, structures, or ancillary facilities.

During routine operations, vehicular access will be needed to reach each structure for periodic inspections and maintenance and to areas of forest or tall shrubs to control vegetation in the ROW for safe operation. The Companies plan to employ live-line maintenance techniques on the transmission line (see Section 4.1.3 of this appendix). Live-line maintenance and repair techniques require the utilization of high-reach bucket trucks and other trucks and equipment. Roads required as routine access roads for the operational life of the Project will be revegetated following construction but will not be recontoured; they will be maintained free of trees and shrubs for a minimum 8-foot width.

For non-routine maintenance requiring access by larger vehicles, the full width of the access road may be used. Roads will be repaired, as necessary, but will not be routinely graded. In order to preserve the ability to enter rapidly, the road structure (cuts and fills) will be left in place. In an emergency (i.e., in the event of a tower or conductor failure) full emergency access, including cranes and other heavy equipment, will be needed. Based on historical reliability of H-frame and lattice structures, it is anticipated that only a small fraction of the tower sites will require emergency access over the life of the Project.

Other roads may be travelled over by the Companies during operations. However, roads not classified as access roads will not be maintained by the Companies except as noted.

Roads not classified as access roads include:

- Public roads, including state highways and county roads: These roads are for public use, and the appropriate state or county entity maintains them.
- Open roads on federal land: The appropriate federal agency (typically BLM or USFS) maintains these roads, which are open to the public. These roads, including drainage features, cuts, and fill slopes, will be repaired by the Companies if damaged during O&M activities but not maintained on a routine basis.
- Closed federal land roads: The land-managing agency makes decisions to close roads built for the Project. Each Field Office will determine which Project roads on BLM-managed land are to be open based on Resource Management Plan and Travel Management Plan direction. The USFS has determined that all roads built for the Project on National Forest System (NFS) lands will be closed to public use. The Companies will assume maintenance responsibilities on closed roads proportionate to their use for O&M purposes.

2.5.3 Waterbody Crossings with Access Roads

Access roads will be constructed to minimize disruption of natural drainage patterns. Estimates of relative frequencies of crossing types and disturbance estimates for each are based on local engineering experience in Wyoming and Idaho. Each crossing will be designed with the roads as advanced engineering is completed, and crossing disturbance will vary. However, these estimates are conservative and consistent across all alternatives. On all federally managed lands, the Companies will consult with the managing agency regarding relevant standards and guidelines pertaining to road crossing methods at waterbodies. Consultation includes site assessment, design, installation, maintenance, and decommissioning. Section 4.4.1 of Appendix I – Framework Stream, Wetland, Well, and Spring Protection Plan, describes waterbody crossing types that will be used as part of the construction specifications. For EIS analysis purposes, three types of waterbody crossings as well as avoidance are considered as part of the Project (see Figures 2.5-3 – Access Road Dry Crossings, and 2.5-4 – Access Road Wet Crossings). They are:

- **Type 1—Drive through:** Crossing of a channel with only minimal vegetation removal and no cut or fill needed. This is typical for much of the low-precipitation sagebrush country with rolling topography and ephemeral streams that rarely flow with water.
- **Type 2—Ford:** Crossing of a channel that includes grading and stabilization. Stream banks and approaches will be graded to allow vehicle passage and stabilized with rock or other erosion control devices. The stream bed will in some areas be reinforced with coarse rock material, where approved by the land management agency, to support vehicle loads, reduce erosion and minimize sedimentation into the waterway. The rock will be installed in the stream bed such that it would not raise the level of the streambed, thus allowing continued movement of water, fish, and debris. A ford crossing results in an average disturbance profile of 25 feet wide (along the waterbody) and 50 feet long (along

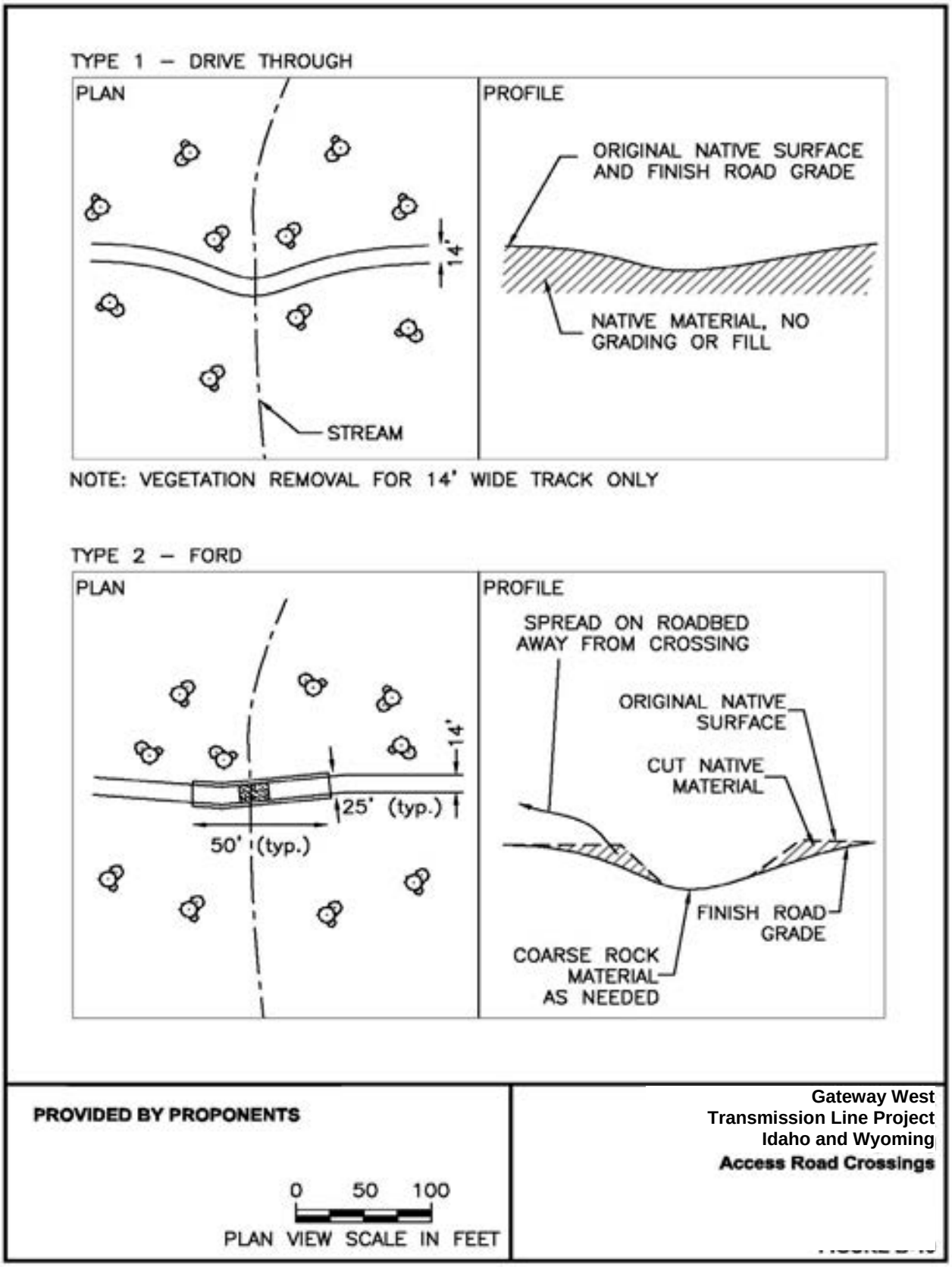


Figure 2.5-3. Access Road Dry Crossings

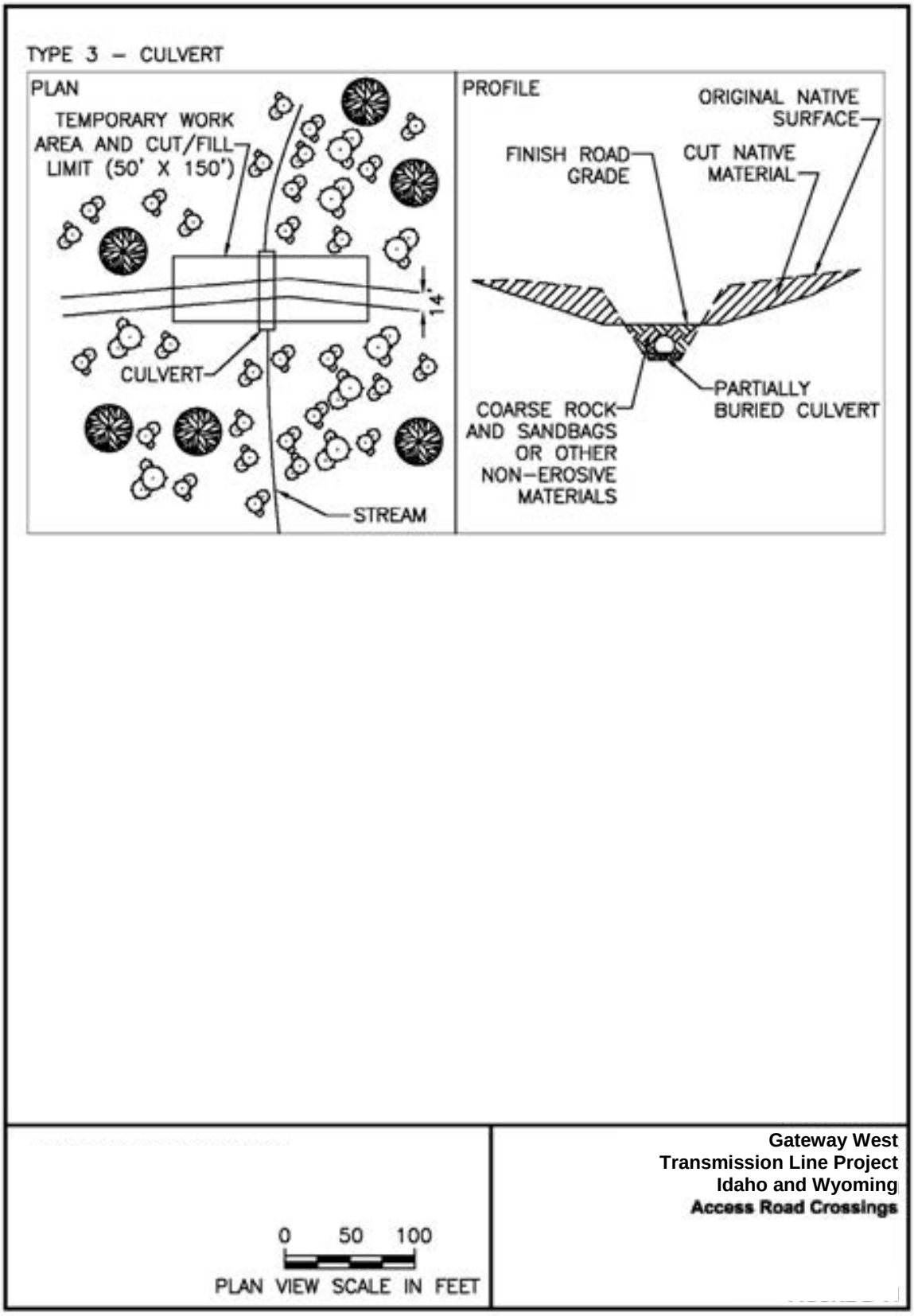


Figure 2.5-4. Access Road Wet Crossings

the roadway) for 1,250 square feet or 0.03 acre at each crossing. Disturbance amount is estimated based on need to get equipment into the riparian area to build the 14-foot-wide travel way and protect it from erosion by adding armoring.

- **Type 3—Culvert:** Crossing of a waterbody that includes installation of a culvert and a stable road surface established over the culvert for vehicle passage. Culverts are designed and installed under the guidance of a qualified engineer who, in collaboration with a hydrologist and aquatic biologist where required by the land management agency, recommends placement locations; culvert gradient, height, and sizing; and proper construction methods. Culvert design considers bedload and debris size and volume. On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines will be followed. The disturbance footprint for culvert installation is estimated to be 50 feet wide (along the waterbody) and 150 feet long (along the road) for 7,500 square feet or 0.17 acre at each crossing. Ground-disturbing activities will comply with Agency-approved best management practices (BMPs). Construction will occur during periods of low water or normal flow. The use of equipment in streams will be minimized. All culverts will be designed and installed to meet desired riparian conditions, as identified in applicable unit management plans. Culvert slope will not exceed stream gradient. Typically, culverts are partially buried in the streambed to maintain streambed material in the culvert. Sandbags or other non-erosive material are placed around the culverts to prevent scour or water flow around the culvert. Adjacent sediment control structures such as silt fences, check dams, rock armoring, or riprap may be necessary to reduce erosion or sedimentation. Stream banks and approaches may be stabilized with native vegetation, rock or other erosion control devices. Culverts will be inspected and maintained annually for the life of the Project (estimated at 50 years or longer) for proper operation and to protect water quality.
- **Avoid Crossing:** Where constructing a new waterbody crossing is impractical or would require a bridge or a very large (>48-inch-diameter) culvert, existing waterbody crossings will be used and access redesigned to avoid a new crossing. All canals and ditches will be avoided by using existing crossings, as would all large perennial bodies like rivers.

The performance of low water stream crossings will be monitored for the life of the access road, and maintained or repaired as necessary to protect water quality.

2.5.4 Wetlands Crossings with Access Roads

During construction and for routine and emergency operations, access across wetlands to each structure location is necessary. Two methods of minimizing impact to wetlands were evaluated but are not proposed:

- Constructing at-grade roads with geotextiles and road materials which allow for water through-flow. This type of road would be below water during certain times of the year which would make locating the roads difficult, and the depth of the water over the drivable surface may make travel over the submerged road surface impractical or not feasible.

- Constructing using helicopters in wetlands. The single-circuit 500kV towers will be designed such that they can be erected by helicopter if needed. In each case, the use of ground based vehicles is still required, thus not eliminating the need for an access road to each structure to complete construction or during inspections and live-line maintenance activities.

A combination of methods for road construction in wetlands is proposed:

- Construction of permanent above-grade roads that will be utilized during construction, operation, and maintenance. This will typically entail placement of permanent fill in wetlands such that the travel surface would be higher in elevation than the ordinary high water level. The construction of above-grade access roads allows for the use of the types of equipment needed for construction, operation, maintenance; and for expedited access for emergency restoration throughout the year.
- Construction or use of temporary roads during construction, followed by reclamation of the disturbance after construction. The Companies only propose this approach in the area of extensive wetlands in the Bear River Plain, in part because it is feasible to store the amount of matting needed for emergency access in the immediate vicinity. Smaller wetland and riparian area crossings will be constructed using permanent crossing methods because it would not be feasible to provide for temporary crossing materials for scattered crossings along a thousand miles of the Project. Where feasible in areas where temporary roads will be used, construction equipment may travel overland if the area is dry. If construction occurs when the ground is solidly frozen, ice roads could be constructed if approved by the land-managing agency.

If construction must occur when the ground is wet, temporary matting materials will be installed to allow access for heavy vehicles and equipment. The mats typically come in the form of heavy timbers bolted together. They are often used over a geotextile that is applied directly over the wet soil surface. When construction use is complete, the mats are removed and the geotextile taken up. This approach will be used where feasible, since it further reduces vegetation damage and compaction and reduces the time for full reclamation. Mats spread the concentrated axle loads from equipment over a much larger surface area than the tires alone, thereby reducing the bearing pressure on fragile soils. Matting has a limited service life before replacement is required and must be stored for maintenance and emergency restoration activities. Table 2.5-2 shows an estimate of miles of temporary roads for construction access in the three largest wetland areas crossed by the Proposed Route. Though exact locations may change during final design, the Companies are committed to using temporary crossings wherever feasible in these three important wetland areas.

Where temporary road access is utilized, road areas will be rehabilitated after construction. Any geotextiles and matting used will be removed and wetland vegetation allowed to return. Since permanent roads will not be available for routine operations inspections or repairs in the Bear River Plain, these activities will be scheduled for times when the ground is dry or frozen and access will be overland along the road alignment by all-terrain vehicle (ATV). Emergency repairs requiring heavy equipment will access

the damaged area using matting if necessary. After emergency repairs are completed, matting will be removed and the wetland areas allowed to revegetate naturally.

Table 2.5-2. Access Road Wetland Crossings in the Bear River Plain

Location	Segment 4 Mileposts	Approximate Miles			
		Total New or Improved Access Roads	New or Improved Access Road in Uplands	Proposed for Permanent Fill in Wetlands	Proposed for Temporary Access in Wetlands
Cokeville	123.0-126.8	2.2	1.3	0.0	0.9
Bear River	133.5-134.5	1.8	0.0	0.0	1.8
Montpelier	148.0-153.6	7.9	5.1	0.0	2.8

Waterbody and wetland disturbances will be conducted under the terms of a U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 permit, the National Pollutant Discharge Elimination System Construction Stormwater Permit (CWA 402), and State 401 water quality certification requirements governing activities within waters of the United States. In Idaho, there is an additional requirement for a stream channel alteration permit for activities in stream beds.

2.6 Substations

The Project includes two proposed substations and expansion and/or modifications at six existing substations. The following sections describe key components of substations.

2.6.1 Bay

A substation “bay” is the physical location within a substation fenced area where the high-voltage circuit breakers and associated steel transmission line termination structures, high-voltage switches, bus supports, controls, and other equipment are installed. For each transmission line, 500-kV, 345-kV, and 230-kV circuit breakers, high-voltage switches, bus supports, and transmission line termination structures are typically installed. The 500-kV transmission line termination structures are approximately 125 to 135 feet tall. Additional equipment including 500/230-kV or 500/345-kV transformers, 500-kV shunt reactors (which resemble a transformer in appearance), and 230-kV shunt capacitor banks will be installed.

The appearance of the new and expanded substations is similar to the appearance of the existing substations. The tallest structures in the substations are the 500-kV, 345-kV, and 230-kV dead-end structures, which vary in height from approximately 70 feet (230 kV) to 125 to 135 feet (500 kV), and/or a microwave antenna tower, which would be in the range of 100 feet or more, depending on the height needed to maintain line of sight to the nearest microwave relay site. Figure 2.6-1 includes a perspective sketch and an elevation view illustrating the appearance of a typical 500-kV substation with multiple line connections; 345-kV and 230-kV substations would have a similar appearance but be smaller in scale.

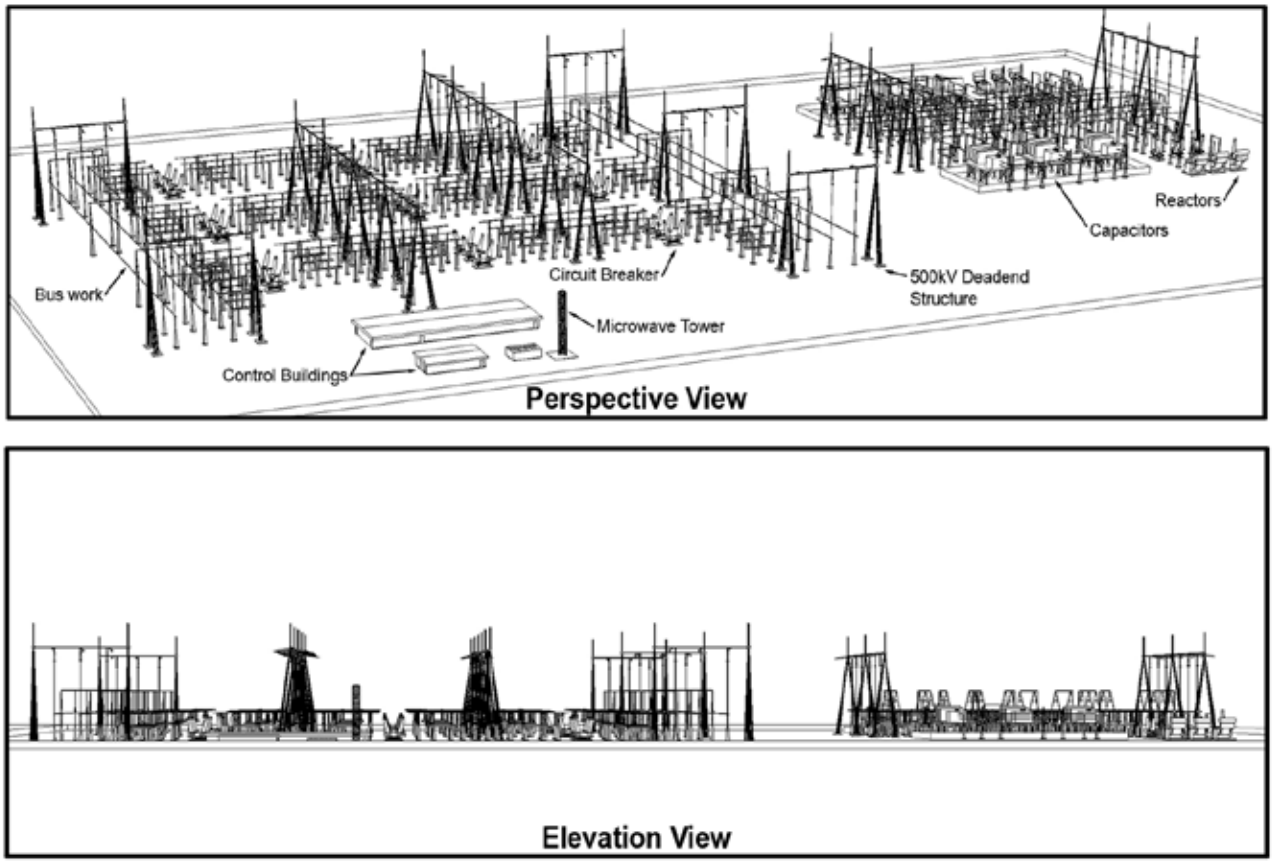


Figure 2.6-1. Typical 500-kV Substation Perspective and Elevation Views

2.6.2 Access Road

Permanent all-weather access roads are required at substation sites to provide access for personnel, material deliveries, vehicles, trucks, heavy equipment, low-boy tractor trailer rigs (used for moving large transformers), and ongoing maintenance activities at each site. Substation access roads are normally well-compacted, graded gravel roads approximately 20 feet in width with a minimum 110-foot turning radius to accommodate the delivery of large transformers to the site. A new access road of less than 1 mile will be developed from the public road to the Anticline Substation. Access to the Aeolus Substation requires an upgrade of a portion of County Route 121. Access roads are in place for all other substation locations.

2.6.3 Control Building

One or more control buildings are required at each substation to house protective relays, control devices, battery banks for primary control power, and remote monitoring equipment. The size and construction of the building depends on individual substation requirements. Typically, the control building is constructed of concrete block, pre-engineered metal sheathed, or composite surfaced materials. Special control buildings may be developed within the substation developments to house other control and protection equipment.

2.6.4 Fencing and Landscaping

Security fencing will be installed around the entire perimeter of each new or expanded substation to protect sensitive equipment and prevent accidental contact with energized conductors by third parties. This 7-foot-high fence is constructed of chain link with steel posts, with one foot of barbed wire above the chain link, and with locked gates. If required by the landowner or permitting agency, landscaping will be established using drought-resistant vegetation where allowed.

2.6.5 Distribution Supply Lines

Station service power is required at each substation. Typically, station service power is provided from a local electric distribution line, located in proximity to the substation or regeneration station. The voltage of the distribution supply line is typically 34.5 kV or lower and carried on wood poles. For new sites, it will be necessary to extend the electric distribution line from a suitable take-off point on an existing distribution line to the new substation site. The location and routing of the existing distribution lines to the new substation sites is determined during the final design process. For Gateway West, new distribution line extensions to provide station service power are anticipated for the Anticline and Aeolus Substations. The distance between existing distribution supply and the substations ranges from several hundred feet to 11 miles. The remaining substation locations are at existing station sites and new distribution line extensions to provide station service power will not be required. However, modifications to the existing distribution facilities may be necessary to provide increased capacity to support the expansions at the existing substation sites.

The location and routing of the existing distribution lines to the new substation sites will be determined by the Construction Contractor during the final design process. The Construction Contractor will be responsible to ensure all environmental and permitting approvals, including cultural and biological preconstruction clearance surveys, are obtained prior to any ground disturbing activities. The Construction Contractor will also be responsible for any potential ROW grant amendments relating to tapping existing distribution lines, as these existing distribution lines could potentially have a separate ROW grant, if on federal lands for any distance. In addition, the Construction Contractor will be responsible to coordinate any necessary access to support the construction of a distribution line with applicable landowners or agencies.

3.0 SYSTEM CONSTRUCTION

The following section and subsections detail construction activities for the Project, including transmission line, substation, communication, and associated ancillary features.

3.1 Preconstruction Activities

3.1.1 Engineering Surveys

Construction survey work would include establishing and defining boundaries and existing site topography.

3.1.2 Cultural Resource Surveys

All areas proposed for new surface disturbance have been inventoried for cultural resource sites except in areas where access was denied. Cultural properties that would have been directly impacted have been identified on the maps in Volume II as "Environmentally Sensitive Areas" and are to be avoided. No known cultural properties would be directly or indirectly impacted at new or expanded substation sites. Cultural surveys along the County Route 121 access road to the Aeolus Substation and evaluation of the existing bridge for eligibility to the National Register of Historic Places have been completed. The Construction Contractor will be responsible for cultural resource surveys on areas where access was previously denied and any additional ground-disturbing activities outside of the culturally surveyed areas depicted on maps in Volume II.

In the event of an unanticipated discovery the direction included in the Unanticipated Discovery Plan contained in Appendix S – Cultural Resources Protection Plan will be followed. Appendix S contains additional direction and guidance, applicable to each transmission line segment.

3.1.3 Biological Surveys

Preconstruction surveys will be conducted by the Construction Contractor, as needed in appropriate habitats and land jurisdictions, for TES[9] species in order to determine activity levels prior to construction and identify potential seasonal and spatial restrictions that may apply to construction. Appendix H describes those preconstruction surveys that will apply for the transmission line segments.

3.1.4 Plans

The Construction Contractor will be responsible to finalize all framework Environmental Protection Plans, as specified in Section 5.0 – Environmental Protection Plans and Documents, Table 5-1 of the POD.

[9] ESA listed Threatened and Endangered Species, BLM or USFS Sensitive Species, or USFS Management Indicator Species (TES)

3.2 Transmission Line Land Requirements and Disturbance

3.2.1 Right-of-Way Width

The Companies propose to acquire a permanent 250-foot-wide ROW for the 500-kV single-circuit sections of the Project, a 150-foot-wide ROW for 345-kV single-circuit sections of the Project, and a 125-foot-wide ROW for the 230-kV single-circuit sections of the Project. However, in the isolated situation where spans between structures significantly exceed the typical span lengths anticipated (up to 1,200 feet or 1,800 feet depending on voltage and standard ROW width), the ROW width may need to be increased to provide appropriate clearance from conductors blown toward the ROW edge. Figures 2.1-4 and 2.1-5 illustrate the ROW width requirements. The determination of these widths is based on two criteria:

- Sufficient clearance must be maintained during a high wind event when the conductors are blown towards the ROW edge.
- Sufficient room must be provided within the ROW to perform transmission line maintenance. See Section 4.1 – Routine System Operation and Maintenance of this appendix for details of maintenance requirements.

During construction, temporary permission will be required from landowners and/or authorized in a ROW grant or SUA from land management agencies for off-ROW access, multipurpose areas, helicopter fly yards, and material storage. During operation, Project land requirements will be restricted to the ROW, including access roads, and communication facilities. Access to the ROW (including off-ROW access roads) will be in accordance with the land rights obtained as part of the easement acquisition process. Off-ROW access roads will be used where permitted for operations as well as construction. As further details of the final Project design are engineered, the amount of land required may change.

3.2.2 Right-of-Way Acquisition

All segments must obtain new ROW through a combination of ROW grants, SUAs, and easements negotiated between the Companies and various federal, state, and local governments; other Companies (e.g., utilities and railroads); and private landowners.

Close coordination with all property owners and land agencies during surveys and the construction phase of the Project is essential for successful completion of the Project. In the early stages of the Project, landowners were contacted to obtain right-of-entry for surveys and for geotechnical drilling at selected locations. Additional landowners will be contacted as needed throughout the Project for additional surveys, including geotechnical work. Each landowner along the final centerline route will be contacted to explain the Project and to secure right-of-entry and access to the ROW.

All negotiations with landowners are conducted in good faith, and the Project's effect on the parcel or other concerns the landowner may have will be addressed. ROWs for transmission line facilities on private lands are obtained as perpetual easements. Land for regeneration stations is obtained in fee simple where located on private land. A good faith effort will be made to purchase the land and/or obtain easements on private lands through reasonable negotiations with the landowners.

To receive a rating from the Western Electricity Coordinating Council (WECC) that allows for the capacity needed to serve present and future loads within the Companies' service areas, the Gateway West transmission lines must be located at least 1,500 feet from the nearest existing 230-kV or higher-voltage transmission lines and is being designed to be located the maximum span distance away when adjacent to longer spans. In unique circumstances less separation is allowed for distances of a few miles or less. Land between ROWs separated to meet reliability criteria would not be encumbered with an easement but could practically be limited in land uses due to the proximity of two or more large transmission lines.

3.2.3 Land Disturbance

The amount of land required for construction and operation is described in Table 3.2-1 – Summary of Transmission Line Land Required for Construction and Operations. This is the amount of land for which operational controls are required over the life of the Project. Land disturbance as described in Table 3.2-2 is the estimated amount of land that will be disturbed during construction or required to be permanently converted to operational uses. These uses are less than the amount of land for which operational controls are required over the life of the Project.

Table 3.2-1. Summary of Transmission Line Land Required for Construction and Operations

Segment	Land Required for Construction (acres) [1/, 2/]	Land Required for Operations (acres) [1/, 3/]
Segment 1W(a) – Windstar to Aeolus (230-kV Line)		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	1,168	1,117
Off-ROW Multipurpose Area	–	–
Off-ROW Fly Yards	–	–
Off-ROW Access Roads	352	107
OPGW Regeneration Station(s) - 1	1	0.5
Segment Subtotal	***1,521***	***1,225***
Segment 1W(c) – Dave Johnston to Aeolus (230-kV Reconstruction)		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	1,170	1,114
Off-ROW Multipurpose Area	30	–
Off-ROW Fly Yards	307	–
Off-ROW Access Roads	155	47
OPGW Regeneration Station(s) - 0	–	–
Segment Subtotal	***1,676***	***1,161***
Segment 2 – Aeolus to Creston		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	2,942	2,776
Off-ROW Multipurpose Area	60	–
Off-ROW Fly Yards	240	–
Off-ROW Access Roads	419	128
OPGW Regeneration Station(s) - 1	1	0.5
Segment Subtotal	***3,672***	***2,905***

Table 3.2-1. Summary of Transmission Line Land Required for Construction and Operations (continued)

Segment	Land Required for Construction (acres) 1/, 2/	Land Required for Operations (acres) 1/, 3/
Segment 3 – Creston to Anticline		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	1,459	1,392
Off-ROW Multipurpose Area	40	–
Off-ROW Fly Yards	112	–
Off-ROW Access Roads	143	44
OPGW Regeneration Station(s) - 1	1	0.5
Segment Subtotal	***1,732***	***1,437***
Segment 3A – Anticline to Bridger		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	97	93
Off-ROW Multipurpose Area	–	–
Off-ROW Fly Yards	12	–
Off-ROW Access Roads	12	4
OPGW Regeneration Station(s) - 0	0	0
Segment Subtotal	***151***	***67***
Segment 4 – Anticline to Populus		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	6,325	5,983
Off-ROW Multipurpose Area	120	–
Off-ROW Fly Yards	554	–
Off-ROW Access Roads	997	307
OPGW Regeneration Station(s) - 3	3	1.5
Segment Subtotal	***8,007***	***6,292***
Total Project		
T-Line ROW (including Off-ROW Wire Pulling/ Splicing Sites)	13,161	12,475
Off-ROW Multipurpose Areas	250	0
Off-ROW Fly Yards	1,225	0
Off-ROW Access Roads	2,078	637
OPGW Regeneration Station(s) - 13	6	3
Total Project	**16,720**	**13,115**

1/ The exact land requirements will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, and economics. Alignment options may also slightly increase or decrease these values.

2/ Acreages in table are rounded to the nearest acre; columns therefore may not sum exactly.

3/ Values are given in 0.5-acre increments because regeneration sites are typically 0.5 acre each.

Assumptions/Notes:

1. ROW width for 500-kV single circuit segments is 250 feet. The ROW width for 230-kV H-frame segments is 125 feet and for 345-kV H-frame on 3A is 150 feet. The dimensions of the tower construction pads and area permanently occupied by towers after reclamation are based on the dimensions specified in Table B-1.

2. The multipurpose areas will serve as field offices, reporting locations for workers, parking space for vehicles and equipment, sites for material storage, fabrication assembly and stations for equipment maintenance, and concrete batch plants.

3. Multipurpose areas will be approximately 20 acres for 500 kV and 10 acres for 230 kV. They will be located at each end of a segment, and every 20 to 30 miles along the line.

4. Fly yards will be 10 to 15 acres located approximately every 5 miles. Values in table assume helicopter construction for all segments. The Construction Contractor may choose to construct using ground-based techniques, therefore not utilizing fly yards.

5. For 500-kV, wiring pulling/splicing sites will be the ROW width x 700 feet located approximately every 9,200'; for 230-kV and 345-kV, ROW width x 400 feet located every 9,200 feet. Typically, only sites that would be off of the ROW would be at large angle dead-ends. It is estimated that one in four sites will be off of the ROW.

6. Refer to Table B-9 for access road mileages for each segment.

Table 3.2-2. Summary of Transmission Line Land Disturbance Resulting from Construction and Operations

Segment/Project Component	Land Affected During Construction (acres) [1/, 2/]	Land Affected During Operations (acres) [1/, 3/]
Segment 1W(a)		
One Single-Circuit Tower 230-kV Pad	229	5
Dead-end Angle 230-kV Pulling Sites	44	–
Existing Roads, Needing Improvement	288	89
New Access Roads	177	63
Fly Yards	–	–
OPGW Regeneration Station – 1	1	0.5
Single Circuit Pulling-Tensioning 230-kV	13	–
Multipurpose Areas 230-kV	–	–
Segment 1W(a) Subtotal	***752***	***158***
Segment 1W(c)		
One Single-Circuit Tower 230-kV Pad	236	5
Dead-end Angle 230-kV Pulling Sites	50	
Existing Roads, Needing Improvement	219	74
New Access Roads	72	25
Fly Yards	312	–
OPGW Regeneration Station – 0	–	–
Single-Circuit Pulling-Tensioning 230-kV	14	–
Multipurpose Areas 230-kV	30	–
Segment 1W(c) Subtotal	***933***	***104***
Segment 2		
One Single--Circuit Tower 500-kV Pad	560	22
Dead-end Angle Pulling Single--Circuit 500-kV	200	–
Existing Roads, Needing Improvement	340	105
New Access Roads	208	73
Fly Yards	250	–
OPGW Regeneration Station – 1	1	0.5
Single-Circuit Pulling-Tensioning 500-kV	112	–
Multipurpose Areas 500-kV	60	–
Segment 2 Subtotal	***1731***	***201***
Segment 3		
One Single--Circuit Tower 500-kV Pad	278	11
Dead-end Angle Pulling Single--Circuit 500-kV	48	
Existing Roads, Needing Improvement	65	20
New Access Roads	136	46
Fly Yards	112	
OPGW Regeneration Station – 1	1	0.5
Single-Circuit Pulling-Tensioning 500-kV	85	
Multipurpose Areas 500-kV	40	
Segment 3 Subtotal	***765***	***78***
Segment 3A		
One Single-Circuit Tower 345-kV Pad	13	–
Dead-end Angle Pulling Single-Circuit 345-kV	7	–
Existing Roads, Needing Improvement	1	–
New Access Roads	16	5
Fly Yards	12	–
OPGW Regeneration Station – 0	–	–
Single-Circuit Pulling-Tensioning 345-kV	–	–
Multipurpose Areas 500-kV	–	–
Segment 3A Subtotal	***49***	***5***

Table 3.3.2. Summary of Transmission Line Land Disturbance Resulting from Construction and Operations (continued)

Segment/Project Component	Land Affected During Construction (acres) [1/, 2/]	Land Affected During Operations (acres)
Segment 4		
One Single-Circuit Tower 500-kV Pad	2,545	92
Dead-end Angle Pulling Single-Circuit 500-kV	673	0
Existing Roads, Needing Improvement	1,576	492
New Access Roads	1,159	398
Fly Yards	1,248	0
OPGW Regeneration Station – 3	6	3
Single-Circuit Pulling-Tensioning 500-kV	570	0
Multipurpose Areas 500-kV	250	0
Segment 4 Subtotal	8,027	985
Project Totals		
One Single-Circuit Tower 500-kV Pad	*3,861*	*135*
Dead-end Angle Pulling Single-Circuit 500-kV	*1,022*	*0*
Existing Roads, Needing Improvement	*2,489*	*780*
New Access Roads	*1,768*	*610*
Fly Yards	*1,934*	*0*
OPGW Regeneration Station – 3	*9*	*5*
Single-Circuit Pulling-Tensioning 500-kV	*794*	*0*
Multipurpose Areas 500-kV	*380*	*0*
Total Project	**12,257**	**1,530**

1/ The exact land requirements will depend on the final detailed design of the transmission line, which is influenced by the terrain, land use, and economics. Alignment options may also slightly increase or decrease these values.
2/ Acreages in table are rounded to the nearest acre; columns therefore may not sum exactly.
3/ Values are given in 0.5-acre increments because regeneration sites are typically 0.5 acre each.

Assumptions/Notes:

1. ROW width for 500-kV single circuit segments is 250 feet, for the 345-kV H-Frame segment 150 feet, and for 230-kV H-frame segments is 125 feet.
2. The multipurpose areas will serve as field offices, reporting locations for workers, parking space for vehicles and equipment, sites for material storage, fabrication assembly and stations for equipment maintenance, and concrete batch plants.
3. Multipurpose areas will be approximately 20 acres for 500-kV and 10 acres for 230-kV. They will be located at each end of a segment, and every 20 to 30 miles along the line.
4. Fly yards will be 10 to 15 acres located every 5 miles. Values in table assume helicopter construction throughout all single-circuit 500-kV and 230 kV-segments. The Construction Contractor may choose to construct using ground-based techniques, therefore not utilizing fly yards.
5. For 500- kV, wiring pulling/splicing sites will be the ROW width x 700 feet located every 9,200 feet; for 230-kV and 345-kV, ROW width x 400 feet located every reel length or approximately 9,200 feet. Typically, only sites that would be off of the ROW would be at large angle dead-ends. It is estimated that one in four sites will be off of the ROW.
6. Refer to Table B-9 for access road mileages for each segment.

Estimates for construction disturbances are based on best professional judgment and experience with this type of project. Estimates were made of disturbance areas resulting from each construction activity involving structure placement, access roads, and yards.

3.3 Transmission Line Removal (Segment 1W(c) only)

3.3.1 Access for Removal

In order to construct Segment 1W(c), the existing 230-kV transmission line must be removed between the existing Dave Johnston Power Plant Substation and the proposed Aeolus Substation. This line will be replaced in its entirety, including structures.

Existing access roads or overland travel, including the roads and trails used for construction, maintenance and inspection of the line, will be used to remove the existing line. All roads or access ways or required disturbance areas utilized for line removal work will be surveyed, cleared and staked prior to any construction. On completion of

line removal work, all access or spur roads shall be removed in their entirety and in accordance with Project requirements and restrictions.

3.3.2 Site Preparation

In general, the existing pads surrounding existing structures are sufficient to allow access for the bucket trucks and small cranes needed to remove the structures. If needed, vegetation on the existing pads may be cut or crushed to allow safe equipment access. Grading will only be used if essential for worker safety. Erosion control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) and Appendix Z of the POD will be employed where needed.

3.3.3 Remove Conductors

The next step after establishment of access and a safe work area for the line workers is to remove the conductors and shield wire. To remove the conductors, the line is taken out of service. Bucket trucks are generally used to hoist the workers to the wire positions to allow workers to remove the hardware holding the wires in place, and drop the wires to the ground. In some cases workers may climb the structures to accomplish this. A wire spooling machine is attached to one end of each wire after the wires are all on the ground. Each wire is wound onto reels to be hauled to one of the designated multipurpose areas, or to an approved off-site disposal area.

In some cases, wires to be removed will cross over other energized lines. Guard equipment or structures are used to prevent the wires being removed from coming in contact with the energized wires (utilizing the same process as used when installing new wires).

3.3.4 Remove Structures

Structure removal follows wire removal. In most cases, a 20-30T lift capacity crane attaches to the structure upper section and holds it in place while the poles are cut off near ground level and the structure is laid to the ground for disassembly. In a few instances, workers in bucket trucks or climbing remove the insulators, hardware, braces, and crossarms in the air and lower them to the ground, leaving the poles standing. Once all the equipment has been removed, the poles are cut off near ground level and allowed to fall (or may be supported by crane and lowered to the ground). If there are any guy wires and anchors, they will be removed at this time as well. All materials are loaded onto trucks and hauled to a multipurpose area or to a preapproved disposal site. Any treated wood that is or given away to an outside party will be accompanied by a Bill of Sale and Consumer Information Sheets that describe any health and environmental risks associated with different types of treated wood (i.e., proper and improper uses).

3.3.5 Site Reclamation

After conductors, structures, and associated hardware have been removed, workers dig out around the base of the remaining pole section and cut off the pole below the ground. The resulting holes are filled and compacted with soils that have been approved for backfill and from approved sources if not available on-site. The final step is to remove and reclaim work areas, pads, and other disturbed areas to a condition agreed upon by the landowner, tenant or managing agency. Appendix D of the Transmission Line POD,

the Framework Reclamation Plan, and Appendix Z, Environmental Protection Measures, contain the plans and requirements for site reclamation.

3.4 Transmission Line Construction

The following sections detail the transmission line construction activities and procedures for Gateway West. Construction equipment and work force requirements are described in Section 3.8 – Construction Elements. Figure 3.4-1 illustrates the transmission line construction sequence. Various construction activities will occur during the process, with several crews operating simultaneously at different locations. The proposed construction schedule is described in Section 3.8.1 – Construction Schedule, of this appendix.

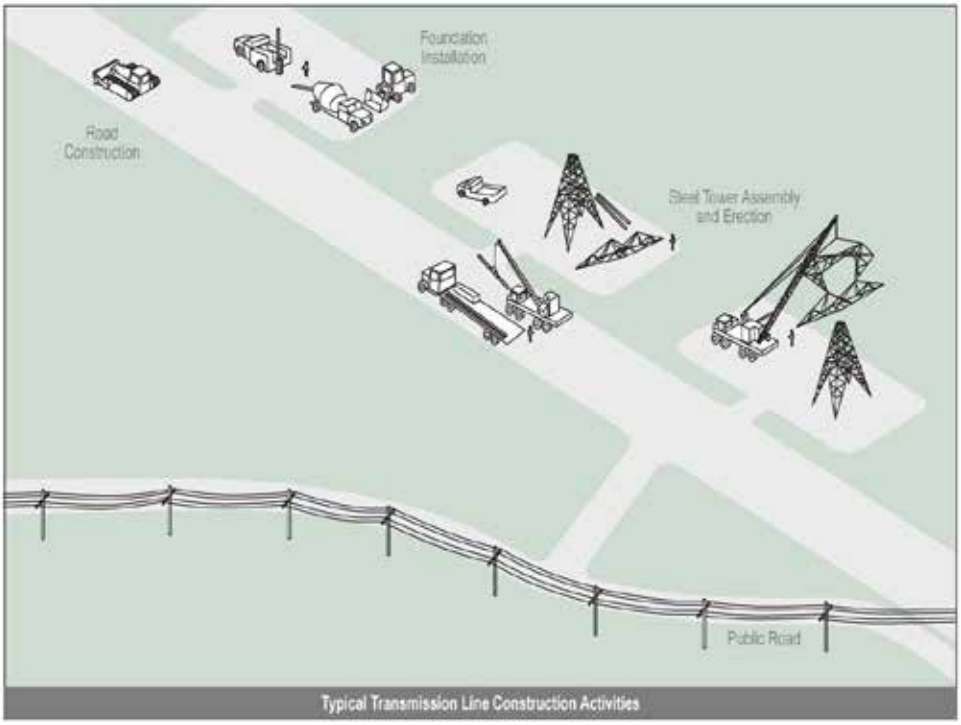


Figure 3.4-1. Transmission Line Construction Sequence

3.4.1 Transmission Line System Roads

Construction of the new 230-kV, 345-kV, and 500-kV transmission lines will require vehicle, truck, and crane access to each new structure site for construction crews, materials, and equipment. Similarly, construction of other Project components such as multipurpose areas and fly yards and pulling and tensioning sites will require vehicle access. Transmission line ROW access will be a combination of new access roads, improvements to existing roads, and use of existing roads as is. New access roads or improvements to existing access roads will be constructed using a bulldozer or grader, followed by a roller to compact and smooth the ground. Front-end loaders will be used to move the soil locally or off-site. Typically, access to the transmission line ROW and tower sites requires a 14-foot-wide travel way for straight sections of road and a 16- to 20-foot-wide travel way at corners to facilitate safe movement of equipment and vehicles. Wherever possible, new access roads will be constructed within the proposed

transmission line ROW, or existing roads will be used. In other cases, access roads will be required between the proposed transmission line and existing roads. Erosion and sediment control measures such as at-grade water bars, culverts, sediment basins, or perimeter control will be installed as required to minimize erosion during and subsequent to construction of the Project.

On level terrain where underlying soils conditions are suitable, road construction may only require back-dragging a blade to remove brush to facilitate construction. Based upon our evaluation of the side slopes these roads do or will cross, the Companies estimated a disturbance width of 24 feet as an average across the approximately 488 miles of the proposed route. This average was estimated based on the assumption that the travel way will be 14 feet wide for straight segments of the road and 16 to 20 feet wide in turns. To achieve this travel way width, a variable amount of disturbance, including cuts and fills, ditching, and other drainage will occur. The steeper the side slope, the larger the disturbance width, because the cuts (into the bank above the road) and fills (compacted material forming the support for the travel way below the road) need to be sloped away from the road to be stable, depending on the parent material and soil type crossed. Where the road curves on steeper ground to follow topography or uses switchbacks to ascend a hill, the wider travel way (16 to 20 feet) is required to accommodate the heavy equipment used during construction. Table 3.4-1 – Slope Class and Estimated Average Road Width, summarizes the assumed average road widths for various side slope classes.

Table 3.4-1. Slope Class and Estimated Average Road Width[10]

Slope Class (% slope)	Average Estimated Road Disturbance for Construction (feet)	% of Proposed Route that Crosses This Slope Class	Weighted Relative Road Width (feet)
0-5	18	53	9
5-10	20	20	4
10-20	30	15	4
>20	50	12	6
		Average	**24**

After Project construction, existing and new permanent access roads will be used by maintenance crews and vehicles for inspection and maintenance activities and to provide access to each structure site. New roads created to access tower sites will be revegetated but not restored to original contours to allow for emergency access to the tower location and for periodic inspection and maintenance activities. Temporary construction roads not required for future maintenance access will be reclaimed and restored to as similar to original contours as practicable after completion of Project construction. For example, access roads to a multipurpose area will not be required once the area is regraded and vegetated. Gates will be installed as required to restrict unauthorized vehicular access to the ROW. Roads retained for operations will be decompacted, topsoiled as applicable, and re-seeded with a grass mix and allowed to revegetate following construction. For normal maintenance activities, an 8-foot portion of the road will be used and vehicles will drive over the vegetation. For non-routine maintenance requiring access by larger vehicles, the full width of the access road may

[10] Based on approximately 990 miles covering the Segment D and E Proposed Route.

be used. Access roads will be repaired, as necessary, but will not be routinely graded. Vegetation (e.g., taller shrubs and trees) that may interfere with the safe operation of equipment will be managed on a cyclical basis.

Table 3.4-2 – Miles of New and Improved Access Roads, lists the estimated miles of proposed access roads by segment based on preliminary engineering.

Table 3.4-2. Miles of New and Improved Access Roads[1/]

Segment	New Access Roads		Existing Access Roads to be Improved		Totals	
	Miles	**Acres[2/]**	**Miles**	**Acres[2/]**	**Miles**	**Acres[2/]**
Segment 1W(a)	64.8	177	91.6	288	156.4	465
Segment 1W(c)	26.1	72	76.5	219	102.6	291
Segment 2	75.6	208	107.7	340	183.3	548
Segment 3	48.0	136	20.7	65	68.7	201
Segment 3A	5.3	16	0.4	<1	5.7	17
Segment 4	192.4	550	210.7	663	403.1	1,213
Total	412.2	1159	507.6	1575	919.8	2735

1/ Includes on- and off-ROW access roads outside the disturbance of the tower pads, pulling and tensioning sites, and on-ROW fly yards.

2/ Acreages in table are rounded to the nearest acre and were calculated based on an average 24-foot width; column therefore may not sum exactly.

3.4.2 Soil Borings

At the discretion of the Companies, soil borings will be completed along the route to determine depth to bedrock and the engineering properties of the soil. Based on the soil properties, foundation designs will be completed for transmission line towers and other structures. Borings will be made with truck- or track-mounted equipment. The borings are approximately 4 inches in diameter, range from 15 to over 60 feet deep, and be backfilled with the excavated material upon completion of soil sampling. If groundwater is encountered it will be monitored. At the end of the monitoring period, the hole will be filled with bentonite and the site reclaimed. The action is covered in separate geotechnical Environmental Assessment (EA) and subsequent Determination of NEPA Adequacy.

3.4.3 Multipurpose Areas

Construction of Gateway West will begin with the establishment of multipurpose areas. Multipurpose areas, about 20 acres each for 500-kV construction and 10 acres each for 230-kV construction, are typically located approximately every 20 to 30 miles along or in proximity to the route. Because Segment 3A, the only portion of 345-kV line, is only 5.1 miles long, it will utilize one of the substations or existing multipurpose areas established for Segments 3 or 4. Where feasible, multipurpose areas are located near a distribution power source, where public services such as water are available, along

well-improved and maintained county roads, and near or on road types that can support the amount and type of traffic needed during the construction process.

The multipurpose areas serve the following functions:

- Material storage yards (sites for material and equipment storage)
- Structure work sites (where structures to be transported to their installation sites can be partially or completely assembled in advance)
- Concrete batch plant locations or sites
- Show up yards (reporting locations for workers and parking space for vehicles)
- Staging yards (locations where materials from larger storage areas can be assembled for a particular task)
- Fuel storage
- Vehicle refueling
- Laydown yards
- Temporary use yards
- Temporary work areas (including but not limited to vehicle and equipment maintenance)

3.4.4 Fly Yards

Helicopter fly yards (fly yards) may be located approximately every 5 miles along the route where helicopter construction is planned, and occupy approximately 10 to 15 acres. These fly yards are generally more temporary in nature than multipurpose areas and are located along the project ROW when feasible and terrain is suitable. Generally the fly yard does not require the same level of access or services as the multipurpose area, as the bulk of their intended use is for temporary staging, assembling, and then flying out of products or completed assemblies. However, all activities listed above for multipurpose areas may occur in a fly yard, but at a smaller scale in comparison.

When necessary, multipurpose areas and helicopter fly yards will be fenced and their gates locked. Security guards will be stationed where needed. Multipurpose area and fly yard locations will be finalized following discussion with the land management agency or negotiations with landowners. In some areas, the area or yard may need to be scraped by a bulldozer and a temporary layer of rock laid to provide an all-weather surface. Unless otherwise directed by the landowner or land manager, the rock will be removed from the area or yard upon completion of construction and the area will be restored.

Table 3.4-3 – Construction Multipurpose Areas and Helicopter Fly Yards, lists the frequency and estimated acreage disturbance for multipurpose areas and helicopter fly yards by segment based on preliminary engineering. In locating areas and yards, the preference is for relatively flat areas with easy existing access to minimize site grading and new road construction. The multipurpose areas will be located in previously disturbed sites or in areas of minimal vegetative cover where possible.

Table 3.4-3. Construction Multipurpose Areas and Helicopter Fly Yards

Segment	Multipurpose Areas			Helicopter Fly Yards		
	Quantity	Approximate Acreage		Quantity	Approximate Acreage	
		Per Location	Total		Per Location	Total
Segment 1W(a)[1/]	–	–	–	–	–	–
Segment 1W(c)	3	10	30	25	12.5	312
Segment 2	3	20	60	20	12.5	250
Segment 3	2	20	40	9	12.5	112
Segment 3A	–	–	–	1	12.5	12.5
Segment 4	6	20	120	45	12.5	562

1/ Co-located with Segment 1W(c).

3.4.5 Site Preparation

Individual structure sites will be cleared to install the transmission line support structures and facilitate access for future transmission line and structure maintenance. Clearing individual structure sites will be done using a bulldozer to blade the required area. At each single-circuit 500-kV structure location, a flat area approximately 250 feet by 250 feet will be needed for construction laydown, tower assembly, and erection at each tower site. An area approximately 150 feet by 125 feet is required for 230-kV structures and an area 150 feet by 150 feet for 345-kV structures. This flat area provides a safe working space for placing equipment, vehicles, and materials. The work area is cleared of vegetation only to the extent necessary.

Where a structure is located on steep side slopes, a flat work area for structure installation and maintenance will require cutting into the side slope and using the cut material as fill to form part of the flat work area, or making a full bench cut and sidecasting the spoil below the pad. The actual dimensions of the flat work area disturbance may vary depending on factors such as terrain and vegetation. Total disturbance, including cuts and fills or spoils, will be larger than the flat work area and varies by side slope and soil type. Table 3.4-4 – Estimated Disturbance from Structure Pads by Slope Class, provides rough estimates of the range of additional disturbance where structures must be installed on steep ground. The estimates include sidecast spoil as well as the amount of area needed for the cut and fill to create the pad itself.

Table 3.4-4. Estimated Disturbance from Structure Pads by Slope Class

Slope class (% slope)	Disturbance Dimension (ft)	Acres of Total Disturbance Per Pad
0-5	250 x 250	1.4
5-10	375 x 300	2.6
10-20	450 x 300	3.1
>20	600 x 350	4.8

Disturbed soil will be managed during construction to limit erosion and sedimentation as specified in Appendix F – Framework SWPPP.

After line construction, all areas not needed for normal transmission line maintenance, including fire and personnel safety clearance areas, will be graded to blend as near as possible with the natural contours, then revegetated as required. Structure pads will be revegetated but not recontoured as the entire work area may be needed for

maintenance. On steep slopes, the cuts and fills will be revegetated but not recontoured as the flat work area will be retained for safe live-line maintenance (see Section 4.1.3 and Figures 4.1-1 through 4.1-3, below) and emergency response.

Additional equipment may be required if solid rock is encountered at a structure location. Rock-hauling, hammering, or blasting may be required to remove the rock. Excess rock that is too large in size or volume to be spread at the individual structure sites will be hauled away and disposed of at approved landfills or at a location specified by the landowner.

3.4.6 Install Structure Foundations

Table 2.1-1 – Proposed Structure Configuration, lists the number of 500-kV, 230-kV, and 345-kV support structures to be installed. Note that the short interconnection between the proposed Anticline Substation and the 345-kV yard at the existing Jim Bridger Substation is separately listed as Segment 3A.

H-Frame Installation

Each 230-kV and each 345-kV tangent H-frame will require the poles to be directly embedded in the ground. Holes are drilled in the ground using a truck- or track-mounted auger. The diameter of the hole excavated for embedment is typically the pole diameter plus 18 inches. The depth is typically 10 percent of the pole length plus 2 feet for 230-kV and 10 percent of the pole length plus 5 feet for 345-kV; in the case of this Project, it will be between 9 and 12 feet for 230-kV and 14 to 18 feet for 345-kV. Depending on underlying soil and rock conditions, the 345-kV H-frames may be supported by steel-reinforced concrete drilled piers.

When the pole is placed in the hole, native or select backfill is used to fill the voids around the perimeter of the hole. When backfill must be imported, material is obtained from commercial sources or from areas free of noxious weed species. See Section 2.1.1 – Types of Transmission Line Support Structures, of this appendix for a description of an H-frame structure and Figure 2.1-1 for an illustration. Similarly, where solid rock is encountered, blasting (see Section 3.7.1 of this appendix) may be required.

Lattice Steel Tower Foundations

Each 500-kV support structure requires the installation of foundations, which are typically drilled concrete piers. Each 345-kV angle structure (and possibly each 345-kV H-frame structure) also requires the installation of foundations, which are typically drilled concrete piers. First, holes are excavated for each structure depending on the structure type—four holes for lattice, three holes for 345-kV angle structures, and two holes for H-frames (if necessary). The holes are drilled using truck- or track-mounted augers of various sizes depending on the diameter and depth requirements of the hole to be drilled. Table 2.1-2 – Foundation Excavation Dimensions, provides the dimensions of each of the 500-kV foundation holes required for each structure. See Section 2.1.1 of this appendix for a description of each structure type and Figures 2.1-2 and 2.1-3 for structure illustrations. Prior to excavation, topsoil is stripped from the area around the tower and stockpiled to prevent contamination. Excavation spoils are spread around the tower pad upon completion of the foundations. As part of final reclamation, the

stockpiled topsoil is spread over the excavation spoils and revegetated. Each foundation extends approximately 1 foot above the ground level.

Where solid rock is encountered, blasting (see Section 2.5.1 – Construction Access Roads, of this appendix), rock hauling, or the use of a rock anchoring or micropile system may be required. Micropiles are high capacity, small diameter (5-inch to 12-inch) drilled and grouted in-place piles designed with steel reinforcement to resist structural loading. The rock anchoring or micropile system will be used in areas where site access is limited or adjacent structures could be damaged as a result of blasting or rock hauling activities.

In environmentally sensitive areas with very soft soils, a HydroVac, which uses water pressure and a vacuum, may be used to excavate material into a storage tank. Alternatively, a temporary casing may be used during drilling to hold the excavation open, after which the casing is withdrawn as the concrete is placed in the hole. Alternatively, in areas where soil conditions preclude temporary casing withdrawal, it may be abandoned in place. The steel is cut below grade and backfilled once the foundation reveal has cured. In areas where it is not possible to operate large drilling equipment due to access or environmental constraints, hand digging may be required.

Reinforced-steel anchor bolt cages are installed after excavation and prior to structure installation. These cages are designed to strengthen the structural integrity of the foundations and are assembled at the nearest multipurpose area and delivered to the structure site via flatbed truck or helicopter. These cages are inserted in the holes prior to pouring concrete. The excavated holes containing the reinforcing anchor bolt cages are filled with concrete (see Table 2.1-2 – Foundation Excavation Dimensions).

Typically, and because of the remote location of much of the transmission line route, concrete will be provided from portable batch plants set up approximately every 25 miles along the line route in one of the multipurpose areas. Concrete will be delivered directly to the site in concrete trucks with a capacity of up to 10 cubic yards. In the more developed areas along the route, the construction contractor may use local concrete providers to deliver concrete to the site when economically feasible.

3.4.7 Erect Support Structures

The 230-kV and 345-kV H-frame structures will be framed on-site. Two methods of assembly can be used to accomplish this, the first of which is to assemble the poles, braces, cross arms, hardware, and insulators on the ground. A crane is then used to set the fully framed structure by placing the poles in the excavated holes. Alternatively, aerial framing can be used by setting the poles in the ground first and assembling the braces, cross arms, hardware, and insulators in the air. A crane moves along the ROW from structure site to structure site setting the structures.

The 500-kV lattice steel structures are assembled on-site, except where helicopter delivery is employed, as described in Section 3.7.2 – Helicopter Use, of this appendix. Steel members for each structure are delivered to the site by flatbed truck. Assembly is facilitated on site by a truck-mounted crane. Subsequent to assembly, the structures are lifted onto foundations using a large crane designed for erecting towers. The crane moves along the ROW from structure site to structure site erecting the towers. Figure

3.4-1 – Transmission Line Construction Sequence, illustrates the tower erection sequence.

3.4.8 String Conductors, Shield Wire, and Fiber Optic Ground Wire

Conductor, shield wire, and OPGW are placed on the transmission line support structures by a process called stringing. The first step to wire stringing is to install insulators (if not already installed on the structures during ground assembly) and stringing sheaves. Stringing sheaves are pulleys that are temporarily attached to the lower portion of the insulators at each transmission line support structure to allow conductors to be pulled along the line. Figure 3.4-2 – Conductor Installation, illustrates the sequence of steps for installing conductors.

Temporary clearance structures (also called guard structures) are erected where required prior to stringing any transmission lines. The temporary clearance structures are typically vertical wood poles with cross arms and are erected at road crossings or crossings with other energized electric and communication lines to prevent contact during stringing activities. Bucket trucks may also be used to provide temporary clearance. Bucket trucks are trucks fitted with a hinged arm ending in an enclosed platform called a bucket, which can be raised to let the worker in the bucket service portions of the transmission structure as well as the insulators and conductors without climbing the structure.

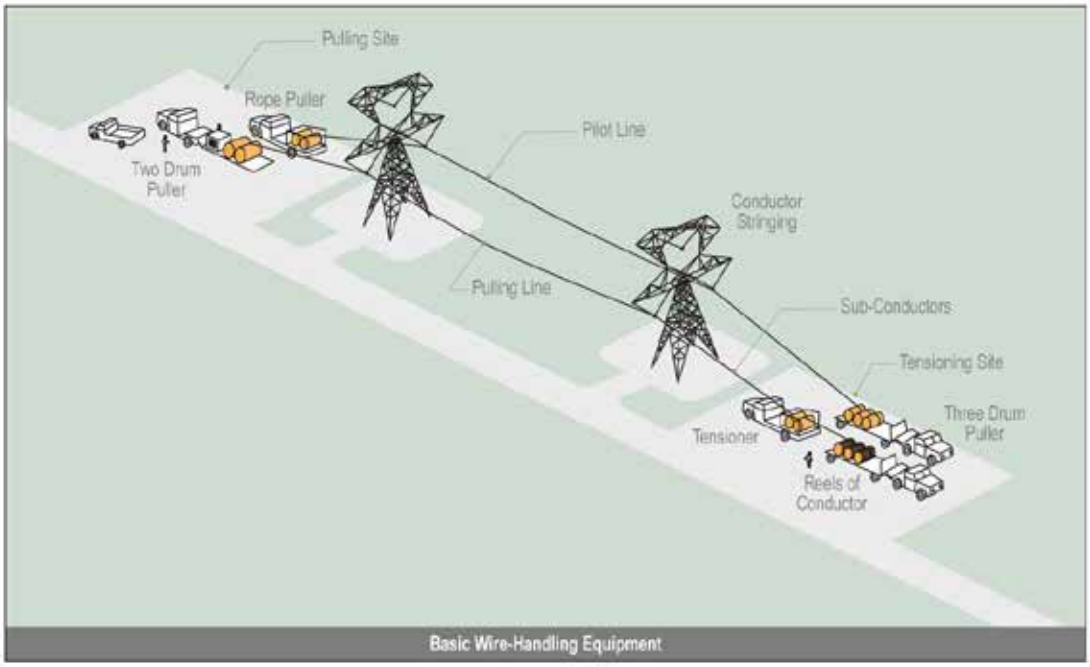


Figure 3.4-2. Conductor Installation

Once the stringing sheaves and temporary clearance structures are in place, the initial stringing operation commences with the pulling of a lighter weight sock line through the sheaves along the same path the transmission line follows. Typically the sock line is pulled in via helicopter. The sock line is attached to the hard line, which follows the sock line as it is pulled through the sheaves. The hard line is then attached to the conductor, shield wire, or OPGW to pull them through the sheaves into their final

location. Pulling the lines may be accomplished by attaching them to a specialized wire stringing vehicle. Following the initial stringing operation, pulling and tensioning the line is required to achieve the correct sagging of the transmission lines between support structures.

Pulling and tensioning sites for 500-kV construction are required approximately every 3 miles along the ROW and are approximately 4 acres each to accommodate required equipment. Pulling and tensioning sites for 230-kV and 345-kV construction are required for each reel length (9,250 feet or approximately every 2 miles) along the ROW and are approximately 1.2 acres each to accommodate required equipment. Equipment at sites required for pulling and tensioning activities includes tractors and trailers with spooled reels that hold the conductors and trucks with the tensioning equipment. To the extent practicable, pulling and tensioning sites are located within the ROW. Depending on topography, minor grading may be required at some sites to create level pads for equipment. Finally, the tension and sag of conductors and wires are fine-tuned, stringing sheaves are removed, and the conductors are permanently attached to the insulators at the support structures.

At the tangent and small angle structures, the conductors are attached to the insulators using clamps to “suspend” the conductors from the bottom of the insulators. At the larger angle dead-end structures, the conductors cannot be pulled through and so are cut and attached to the insulator assemblies at the structure “dead ending” the conductors. There are two primary methods to attach the conductor to the insulator assembly at the dead-end structure. The first method, hydraulic compression fittings, uses a large press and pump that closes a metal clamp or sleeve onto the conductor. This method requires heavy equipment and is time consuming. The second method, implosive fittings, uses explosives to compress the metal together. Implosive fittings do not require heavy equipment, but do create noise similar to a gunshot when the primer is struck. The noise generated when the implosive fittings are detonated is similar to a gunshot due to its impulsive nature and as such it occurs over a short time interval. The duration of sound emitted from detonation of this type of implosive device is expected to be short, ranging from approximately 210 to 360 milliseconds. Implosive sleeves may be set off either one at a time or in groups. The implosive type sleeve is faster to install and results in a secure connection between the conductor and the sleeve. Implosive sleeves are planned for the Project.

The 500-kV and 345-kV single-circuit lines use a three conductor bundle for each phase. At each single-circuit 500-kV or 345-kV dead-end structure, 18 implosive dead-end sleeves (six per phase, one for each of the three subconductors on each of the three phases, and on each side of the structure) will be required. Additionally, 18 compression or implosive sleeves will be required to fabricate and install the jumpers that connect the conductors from one side of the dead-end structure to the other, for a total of 36 sleeves for each single-circuit dead-end structure.

The 230-kV single-circuit lines use a two-conductor bundle for each phase. Each 230-kV dead-end structure requires 12 implosive or compression type sleeves to dead-end the conductors and 12 sleeves to fabricate the jumpers, for a total of 24 sleeves at each dead-end structure. For the overall Project, approximately 16,000 to 18,000 compression or implosive fittings will be used.

3.4.9 Snow Removal

Snow will be removed from the ROW where necessary to provide access to roads, structure work sites, and other Project-related facilities and to expose soils for backfilling and grading. Snow will typically be bladed or pushed off the roads and construction area but within the ROW. The storage of snow (i.e., snow piles) will be confined to areas approved for disturbance and where appropriate surveys have been completed.

Snow removal will be done typically with a motor grader, snowplow, or dozer. Care will be taken when removing snow to minimize mixing of soil with snow. Tracked equipment used for snow removal operations shall be equipped with shoes to keep the blade 2 inches off the ground. The Construction Contractor shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure equipment blades do not destroy vegetation.

In areas where snow fills trenches or holes, the Construction Contractor will be responsible for removing it to allow visual inspection of the trench or holes prior to installing Project facilities and backfilling. The Construction Contractor will backfill trenches with unfrozen soils to the extent practicable to minimize the potential for ditchline settlement resulting from voids between frozen chunks of backfill.

On federally managed lands and as directed by the Authorized Officer, all access roads shall be winterized by providing a well-drained roadway. This may be achieved by using water bars, maintaining drainage, and using any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.

3.4.10 Cleanup and Site Reclamation

Construction sites, multipurpose areas, fly yards, and access roads will be kept in an orderly condition throughout the construction period. Approved enclosed refuse containers will be used throughout the Project. Refuse and trash will be removed from the sites and disposed of on a daily basis in an approved manner. Oils or chemicals will be hauled to a disposal facility authorized to accept such materials. Open burning of construction trash will not be allowed.

Disturbed areas not required for access roads and maintenance areas around structures will be reclaimed, as required by the property owner or land management agency. Service roads will be decompacted and the topsoil replaced. The road prism will not be restored to original contours so that a stable road base is present if equipment is needed to access a tower during operation. The landowner, land management agency, or local Natural Resources Conservation Service will be consulted regarding the appropriate seed mix and rate to revegetate the road surface. Vegetation on an 8-foot width of road surface may be periodically managed to allow equipment travel if necessary. Temporary culverts will be removed. Drivable at-grade waterbars will be installed where needed with frequency proportional to road slope to reduce erosion of the roadbed. Applicable agency BMPs and unit management plan requirements will be implemented. All practical means will be applied to restore the land outside the minimum areas needed for safe operation to its original contour and to restore natural drainage patterns along the ROW.

3.5 Communication System

OPGW for the communication system will be installed at the same time as the conductors on each of the transmission line structures. Stringing and tensioning of the OPGW is similar to that of the conductors. Splicing is performed at a structure location via a splice box that houses the splicing of each individual fiber contained in the OPGW (there are 48 fibers in the proposed OPGW). The splice box is mounted to the structure itself.

3.5.1 Regeneration Stations

The selected area is graded, vegetation is removed, and a layer of crushed rock is installed. Typically, a 12-foot by 32-foot by 9-foot-tall building or equipment shelter (metal or concrete) is constructed on the site. An emergency generator with a liquid petroleum gas fuel tank is installed at the site inside the fenced area. Two diverse cable routes (aerial and/or buried) from the transmission ROW to the equipment shelter are installed.

3.5.2 Regeneration Station Access Road

Regeneration station roads are constructed using a bulldozer or grader, followed by a roller to compact and smooth the ground. Front-end loaders are used to move the soil locally or off site. Either gravel or asphalt is applied to the prepared base layer for the access road into all regeneration stations. Section 2.5.2 – Operations Access Roads, provides more description of how roads will be constructed.

3.6 Substation Construction

The following section describes substation construction activities for Segment D of the Project. Detailed equipment specification and construction requirements contained elsewhere take precedence over the descriptions contained herein.

3.6.1 Substation Land Requirements and Disturbance

All substation sites must obtain land rights through a combination of ROW grants and agreements between the Companies and various federal, state, and private landowners. Table 3.6-1 describes the estimated amount of land that will be disturbed during construction and the amount of land that will be to be permanently required for operational use.

Table 3.6-1. Substation Land Disturbance Resulting from Construction and Operations

Substations	Acres of Construction Disturbance	Acres Required for Operations
Windstar Substation	5	–
Dave Johnston Substation	–	–
Heward Substation	7	5
Shirley Basin Substation	–	–
Aeolus Substation	120	100
Anticline Substation	150	140
Jim Bridger 345-kV Substation	10	10
Populus Substation	90	80

3.6.2 Substation Roads

Substation roads are constructed to the Companies' substation construction standards using a bulldozer or grader, followed by a roller to compact and smooth the ground. Front-end loaders are used to move the soil on-site or off-site. Soil hauled off-site will be done so in conjunction with local ordinances or permitting agency requirements. Gravel or asphalt is applied to the prepared base layer.

3.6.3 Soil Boring

Typically, soil borings are made on a 600-foot grid spacing within the substation, particularly at the approximate location of large structures and equipment such as transmission line dead-ends and transformers, to determine the engineering properties of the soil. Borings are made with truck- or track-mounted equipment. The borings are approximately 4 inches in diameter, range from 15 to over 60 feet deep, and are backfilled with the excavated material upon completion of soil sampling. If groundwater is encountered it will be monitored. At the end of the monitoring period, the hole will be filled with bentonite and the site reclaimed. The action is covered in separate geotechnical EA and subsequent Determination of NEPA Adequacy.

3.6.4 Clearing and Grading

Clearing of all vegetation is required for the entire substation area, including a distance of about 10 feet outside the fence. This is required for personnel safety due to grounding concerns and because of lower clearances to energized conductors within the substations as compared to transmission lines. These lower clearances are allowed by the National Electric Safety Code because the entire substation is fenced.

An insulating layer on the surface of the substation is required to protect personnel from high currents and voltages during electrical fault conditions. Typically, vegetation is removed and a 4- to 6-inch layer of crushed rock is applied to the finished surface of the substation. Then the substation is usually treated with a soil sterilizer to prevent vegetation growth because the vegetation would degrade the insulating qualities of the crushed rock. The entire substation area will be graded essentially flat, with just enough slope to provide for runoff of precipitation. The substation is graded to use existing drainage patterns to the extent possible. In some cases, drainage structures, such as ditches or culverts, may be required. Clearing and grading material will be disposed of in compliance with local ordinances or permitting agencies. Off-site material will be obtained at existing borrow or commercial sites and trucked to a substation using existing roads and the substation access road.

3.6.5 Multipurpose Areas

Construction of the Project will begin with the establishment of multipurpose areas. These multipurpose areas may be part of a substation property or leased by the Construction Contractor. The multipurpose construction areas can serve as field offices; reporting locations for workers, parking space for vehicles and equipment, and sites for material storage, fabrication assembly, and stations for equipment maintenance.

In some areas, the multipurpose areas may need to be scraped by a bulldozer and a temporary layer of rock laid to provide an all-weather surface. In locating multipurpose

areas, the preference is for relatively flat areas with easy existing access to minimize site grading and new road construction. The multipurpose areas will be located in previously disturbed sites or in areas of minimal vegetative cover wherever possible. Construction multipurpose areas may be located outside a substation-fenced area.

If the Construction Contractor requires additional multipurpose areas, the Construction Contractor will be responsible to ensure all environmental and permitting approvals, including cultural and biological preconstruction clearance surveys, are obtained prior to any ground-disturbing activities.

After construction is completed, all debris and unused materials will be removed and the areas returned to preconstruction conditions by the Construction Contractor.

3.6.6 Grounding

A grounding system is required in each substation for detection of faults and for personnel safety. The grounding system typically consists of buried copper conductor arranged in a grid system and driven ground rods, typically 8 to 10 feet long. The ground rods and any equipment and structures are connected to the grounding conductor. The amount of conductor and length and number of ground rods required are calculated based on fault current and soil characteristics.

3.6.7 Fencing

Security fencing is installed around the entire perimeter of each new or expanded substation to protect sensitive equipment and prevent accidental contact with energized conductors by third parties. This 7-foot-high fence is constructed of chain link with steel posts. One foot of barbed wire or other similar material is installed on top of the chain link yielding a total fence height of 8 feet. Locked gates are installed at appropriate locations for authorized vehicle and personnel access.

3.6.8 Foundation Installation

Foundations for supporting structures are of two types—spread footings or drilled piers. Spread footings are placed by excavating the foundation area, placing forms and reinforcing steel and anchor bolts, and pouring concrete into the forms. After the foundation has been poured, the forms are removed and the surface of the foundation dressed. Pier foundations are placed in a hole generally made by a track- or truck-mounted auger. Reinforcing steel and anchor bolts are placed into the hole using a track- or truck-mounted crane. The portion of the foundation above ground is formed. The portion below ground uses the undisturbed earth of the augured hole as the form. After the foundation has been poured, the forms are removed, the excavation backfilled, and the surface of the foundation dressed.

Equipment foundations for circuit breakers and transformers will be slab-on-grade type. These foundations are placed by excavating the foundation area; placing forms, reinforcing steel, and anchor bolts (if required); and placing concrete into the forms. After the foundations have been poured, the forms are removed, and the surface of the foundation dressed. Where necessary, provision is made in the design of the foundations to mitigate potential problems due to frost. Reinforcing steel and anchor bolts are transported to each site by truck, either as a prefabricated cage or loose pieces, which is then fabricated into cages on the site. Concrete is hauled to the site in

concrete trucks. Excavated material is spread at the site or disposed of in accordance with local ordinances. Structures and equipment are attached to the foundations by means of threaded anchor bolts embedded in the concrete. Some equipment such as transformers and reactors may not require anchor bolts.

3.6.9 Oil Containment

Some types of electrical equipment, such as transformers and some types of reactors and circuit breakers are filled with an insulating mineral oil. Containment structures are required to prevent equipment oil from getting into the ground or waterbodies in the event of a rupture or leak. These structures take many forms depending on site requirements, environmental conditions, and regulatory restrictions. The simplest type of oil containment is a pit, of a calculated capacity, under the oil-filled equipment that has an oil-impervious liner. The pit is filled with rock to grade level. In case of an oil leak or rupture, the oil captured in the containment pit is pumped into tanks or barrels and transported to a disposal facility. If required, more elaborate oil containment systems can be installed. This may take the form of an on- or off-site storage tank and/or oil-water separator equipment depending on site requirements.

3.6.10 Structure and Equipment Installation

Supporting steel structures are erected on concrete foundations as noted above. These are set with a track- or truck-mounted crane and attached to the foundation anchor bolts by means of a steel base plate. These structures are used to support the energized conductors and certain types of equipment. This equipment is lifted onto the structure by means of a truck-mounted crane and bolted to the structures; electrical connections are then made. Some equipment, such as transformers, reactors, and circuit breakers, are mounted directly to the foundations without supporting structures. These are set in place by means of a truck-mounted crane. Some of this equipment requires assembly and testing on the pad. Electrical connections to the equipment are then made.

3.6.11 Control Building Construction

One or more control buildings are required at each substation to house protective relays, control devices, battery banks for primary control power, and remote monitoring equipment. The size and construction of the building depends on individual substation requirements. Typically, the control building is constructed of concrete block, pre-engineered metal sheathed, or composite surfaced materials. Once the control house is erected, equipment is mounted and wired inside. Typically, an emergency generator will be located near the control house within the substation fenced area.

3.6.12 Conductor Installation

The two main types of high voltage conductors used in substations are tubular aluminum for rigid bus sections and/or stranded aluminum conductor for strain bus and connections to equipment. Rigid bus will be a minimum of 4 inches in diameter for this Project and is supported on porcelain or polymer insulators on steel supports. The bus sections are welded together and attached to special fittings for connection to equipment. Stranded aluminum conductors are used as flexible connectors between the rigid bus and the station equipment.

3.6.13 Conduit and Control Cable Installation

Most substation equipment requires low-voltage connections to protect relaying and control circuits. These circuits allow metering, protective functions, and control (both remote and local) of the power system. Connections are made from the control building to the equipment through multi-conductor control cables installed in conduits and/or pre-cast concrete cable trench system.

3.6.14 Construction Cleanup and Landscaping

The cleanup operation will be performed after construction activities are completed. All waste and scrap material will be removed from the site and deposited in local permitted landfills in accordance with local ordinances. Ruts and holes outside the substation fence due to construction activities will be regraded. Revegetation and reclamation will be conducted per Appendix D –Framework Reclamation Plan that will be finalized by the Construction Contractor. Landscaping will be performed per the Companies' substation landscaping specifications or per the permitting agency.

3.7 Special Construction Techniques

3.7.1 Blasting

As described in Section 3.4.6 – Install Structure Foundations, of this appendix, 500-kV lattice tower foundations are normally installed using drilled shafts or piers and 230-kV and 345-kV H-frame structures are normally directly embedded. If hard rock is encountered within the planned drilling depth, blasting may be required to loosen or fracture the rock in order to reach the required depth to install the structure foundations. Areas where blasting will likely occur have been identified based on the geologic setting of the proposed alignment. Table 3.7-1 – Summary of Shallow Bedrock by Segment, summarizes the shallow bed rock conditions within each segment. More precise locations where blasting is expected will be identified based on a site-specific geotechnical study carried out as part of detailed design.

Table 3.7-1. Summary of Shallow Bedrock by Segment

	Depth to Bedrock (feet) by Percent of Analysis Area			
Segment Number	**1 to 4**	**4 to 8**	**8 to 12**	**Total Percent of Analysis Area**
1	7	<1	14	21
2	–	–	–	–
3	66	6	–	72
4	40	1	3	44

The Construction Contractor will be required to prepare a Final Blasting Plan as outlined in Appendix M – Framework Blasting Plan of the POD for the Project, subject to the approval of the Companies. The Final Blasting Plan will detail the Construction Contractor's proposals for compliance with the Companies' blasting specifications and the general concepts proposed to achieve the desired excavations using individual shot plans. In addition, the plan will address proposed methods for controlling fly rock, for blasting warnings, and for use of non-electrical blasting systems. The Construction Contractor will be required to provide data to support the adequacy of the proposed efforts regarding the safety of structures and slopes and to ensure that an adequate

foundation is obtained. When utilized, blasting will take place between sunrise and sunset.

The shot plans will detail, including sketches, the drilling and blasting procedures; the number, location, diameter, and inclination of drill holes; the amount, type, and distribution of explosive per hole and delay; and pounds of explosive per square foot for presplitting and smooth blasting. The Construction Contractor will be required to maintain explosives logs.

Blasting near buildings, structures, and other facilities susceptible to vibration or air blast damage will be carefully planned by the Construction Contractor and the Companies and controlled to eliminate the possibility of damage to such facilities and structures. The Final Blasting Plan will include provisions for controlling and eliminating vibration, fly rock, and air blast damage.

Blasting will be very brief in duration (milliseconds), and the noise will dissipate with distance. Blasting produces less noise and vibration than comparable non-blasting methods to remove hard rock. Non-blasting methods include track drill rigs, rock breakers, jack hammers, rotary percussion drills, core barrels, and rotary rock drills with rock bits, each of which takes substantially longer to excavate approximately the same amount of rock as blasting.

No readily available data were found to evaluate depth to bedrock at depths greater than 12 feet. In 2010, drilling began in some areas of Segments 1 through 4 to support geotechnical evaluations for transmission line structures. The drilling was conducted on public land and private land where landowner permission was obtained. The drilling data indicate that several borings contained bedrock at depths less than 20 feet. Therefore, it is assumed that shallow bedrock could be encountered in any of the segments. As a conservative measure, it was assumed that all shallow bedrock that will need to be removed will require blasting.

Due to the lack of depth to bedrock data deeper than 12 feet, the amount of shallow bedrock presented in Table 3.7-1 – Summary of Shallow Bedrock by Segment, likely underestimates the amount of shallow bedrock that will be intercepted during construction.

3.7.2 Helicopter Use

Access roads are required to each tower site for construction and for operation and maintenance activities. Helicopters may be used to support these activities. Project construction activities potentially facilitated by helicopters may include delivery of construction laborers, equipment, and materials to structure sites; structure placement; hardware installation; and wire stringing operations. Helicopters may also be used to support the administration and management of the Project by the Companies. The use of helicopter construction methods for this Project will not change the length of the access road system required for operating the Project because vehicle access is required to each tower site regardless of the construction method employed.

In some cases it may be desirable to employ heavy lift helicopters in the single-circuit 500-kV tower erection process[11]. To allow the construction contractor flexibility in what construction methods can be used, the construction specification will be written to allow the Construction Contractor the option of using ground-based or helicopter construction methods, or a combination thereof. Use of a helicopter for structure erection may be driven by various factors, including access to the structure locations, construction schedule, and/or construction economics.

When helicopter construction methods are employed, helicopter construction activities are based at a fly yard. The fly yards will be sited at locations to permit a maximum fly time of 4 to 8 minutes to reach structure locations, typically at about 5-mile intervals. Fly yards are used for material storage and erection of structure sections prior to transport to the final structure locations for installation. Additionally, fueling trucks, maintenance trucks, and operations crews are based in the fly yards. Appropriate dust control measures will be implemented at these fly yard locations as well as the locations where helicopters are used along the route.

Prior to installation, each tower structure is assembled in multiple sections at the fly yard. Tower sections or components are assembled by weight based on the lifting capacity of the helicopter in use. The lift capacity of helicopters is dependent on the elevation of the fly yard, the tower site, and the intervening terrain. The heavy lift helicopters that could be used to erect the single-circuit 500-kV tower sections are able to lift a maximum of 15,000 to 20,000 pounds per flight, depending on elevation.

After assembly at the fly yard, the tower sections are attached by cables from the helicopter crane to the top four corners of the structure section and airlifted to the structure location. Upon arrival at the structure location, the section is placed directly on to the foundation or atop the previous structure section. Guide brackets attached on top of each section will assist in aligning the stacked sections. Once aligned correctly, line crews climb the structures to bolt the sections together permanently.

It should be noted that the fly yard locations provided are considered approximate and subject to change, additions, or deletions upon acquisition of an installation contractor prior to the beginning of construction. Upon completion of field review, a final determination is made on the necessity of certain fly yards and the respective locations that provide the most efficient, economic, safest, and least impact use of the fly yards that are needed.

3.7.3 Water Use

Construction of the Project requires water. Major water uses are for transmission line and substation structure foundations, and dust control during grading and site work. Tables 3.7-2 – Transmission Line Estimated Water Usage by Component, Segment, and Activity, and 3.7-3 – Substation Estimated Water Usage, list the amount of water required for Project construction.

[11] For the Gateway West Project, a typical 500-kV single-circuit tangent tower weighs approximately 46,000 pounds.

Table 3.7-2. Transmission Line Estimated Water Usage by Component, Segment, and Activity

Segment	Total Miles	No. of Structures[1/]	Foundation Gallons per Segment[2/]	Dust Control Gallons per Segment[3/]	Total Gallons per Segment
1W(a)	73.8	531	–	1,726,656	1,726,656
1W(c)	73.6	547	–	1,561,498	1,561,498
2	91.9	390	1,174,149	1,553,990	2,728,139
3	45.9	194	717,535	949,660.8	1,667,196
3A	5.1	25	35,400	121,700	157,100
4	197.6	856	2,532,644	3,351,965	5,884,609
Total Transmission Line Water Usage (million gallons = MG)					13.7
Regeneration Sites	**–**	**–**	**Number**	**Gallons for all Activities**	**Total Gallons Regeneration Sites**
Sites	–	–	6	800	4,800
				Total Project (MG)	**13.7**

1/ Water usage per structure is used to make concrete at the batch plant site.
2/ All 230-kV structures will be directly embedded. Concrete foundations are not required; therefore, no water is required.
3/ The amount of water used for dust control varies significantly based on many conditions. Estimates are based on reasonable construction experience.

The required water will be procured from municipal sources, from commercial sources, or under a temporary water use agreement with landowners holding existing water rights. No new water rights will be required. In the construction of foundations, water is transported to the batch plant site where it will be used to produce concrete. From the batch plant, the wet concrete is transported to the structure site in concrete trucks for use in foundation installation (refer to Section 3.4.6 – Install Structure Foundations, of this appendix for more details on foundation installation).

Transmission Lines

Construction of the transmission lines and related facilities generates a temporary increase in fugitive dust. If the level of fugitive dust is too high in specific Project areas, as determined in cooperation with the landowner or agency, water will be applied to disturbed areas to minimize dust. The Construction Contractor will be required to develop fugitive dust plan(s) as outlined in Appendix N – Framework Erosion, Dust Control, and Air Quality Plan of the POD.

Substations

Construction of the substations requires water for foundations and dust control during substation grading and site work. A minor use of water during construction will include the establishment of substation landscaping where required.

Table 3.7-3. Substation Estimated Water Usage

Substation	Acres of Construction Disturbance	Gallons for Concrete	Gallons for Grading/Site Work/Dust Control[1/]	Total Gallons per Substation
Windstar Substation	5	9,200		9,200
Dave Johnston Substation	–	9,200	–	9,200
Heward Substation	7	5,400	993,531	998,931
Shirley Basin Substation	–	–	–	–
Aeolus Substation	120	130,000	24,128,610	24,258,610
Anticline Substation	150	103,000	19,160,955	19,263,955
Jim Bridger 345-kV Substation	10	7,700	1,419,330	1,427,030
Populus Substation	90	69,000	12,773,970	12,842,970

1/ The amount of water used for dust control varies significantly based on many conditions. Estimates are based on reasonable construction experience.

Water usage for substation construction is primarily for dust control during site preparation work. During this period, construction equipment will be cutting, moving, and compacting the subgrade surface. As a result, water trucks patrolling the site to control dust will make up to one pass per hour over the station site. Once site preparation work is complete, concrete for the placement of foundations becomes the largest user of water and dust control becomes minimal.

Water Withdrawal

Water for construction must be obtained either from existing permitted water sources or by developing and licensing a temporary water right through the Wyoming State Engineer's Office or Idaho Department of Water Resources (IDWR). No water shall be utilized through informal agreements with apparent water rights holders. There are varying regulations depending on location and watershed. The five watersheds crossed by Segment D are shown on Figure 3.7-1 – Watersheds Crossed by Project Facilities.

Wyoming

Statewide: Where water is to be purchased from existing valid permit-holders anywhere in the state, the current beneficial use to which that water is put MUST be vacated for the duration of the use for construction. This means that if water is purchased from a farmer, the operator *must* fallow the amount of irrigated land that would have used the volume of water sold. To avoid prosecution, the Construction Contractor *must* document the agreement and show the amount of land to be fallowed and the water to be sold. According to the Wyoming Engineer's office staff, a totalizing water meter must be installed together with an anti-backflow device and the seller must report weekly the amount of water sold.

Where a new temporary water right or water haul[12] is developed, the Construction Contractor must complete an application for a temporary water right to the Wyoming Engineer's office, indicating the exact location of the proposed withdrawal (typically a new well or an expansion of an existing well), the amount of water to be withdrawn daily, and any plans for storage of water (typically necessary for low-yield wells)[13]. This

[12] A temporary water haul allows the removal of water from a permitted water use area for application elsewhere.
[13] Found on the Wyoming Engineer's website, https://sites.google.com/a/wyo.gov/seo/

application will be reviewed by Wyoming Department of Game and Fish, which will typically require seasonal restrictions to protect sage-grouse, including, in sage-grouse core areas, seasonal construction stipulations, and no noise from 5 p.m. to 8 a.m. daily. Other permit conditions will likely restrict activity during the sage-grouse breeding season.

The Construction Contractor also may be able to purchase water from municipalities if those municipalities apply for a temporary haul permit for their surface water sources. Similarly, the Construction Contractor may be able to purchase water from municipalities if those municipalities apply for a temporary well enlargement from an existing ground water source.

Platte River Watershed: All water must be obtained from existing, permitted water sources in the Platte River watershed outside the "green zones" (see Figure 3.7-1 – Watersheds Crossed by Project Facilities). Within the green zones in the Platte River watershed, new temporary water rights may be developed.

Closed Basin Watershed: Water may be obtained from existing permitted water sources, and new temporary water rights may be developed.

Colorado River Watershed (includes the White, Nampa, and Green Rivers): Water may be obtained from existing permitted water sources and new temporary water rights may be developed. Note that although the BOR may have available water, the Wyoming Engineer observed that BOR would be required to conduct a full environmental analysis of additional diversion even for a temporary water permit, which could present a delay to construction.

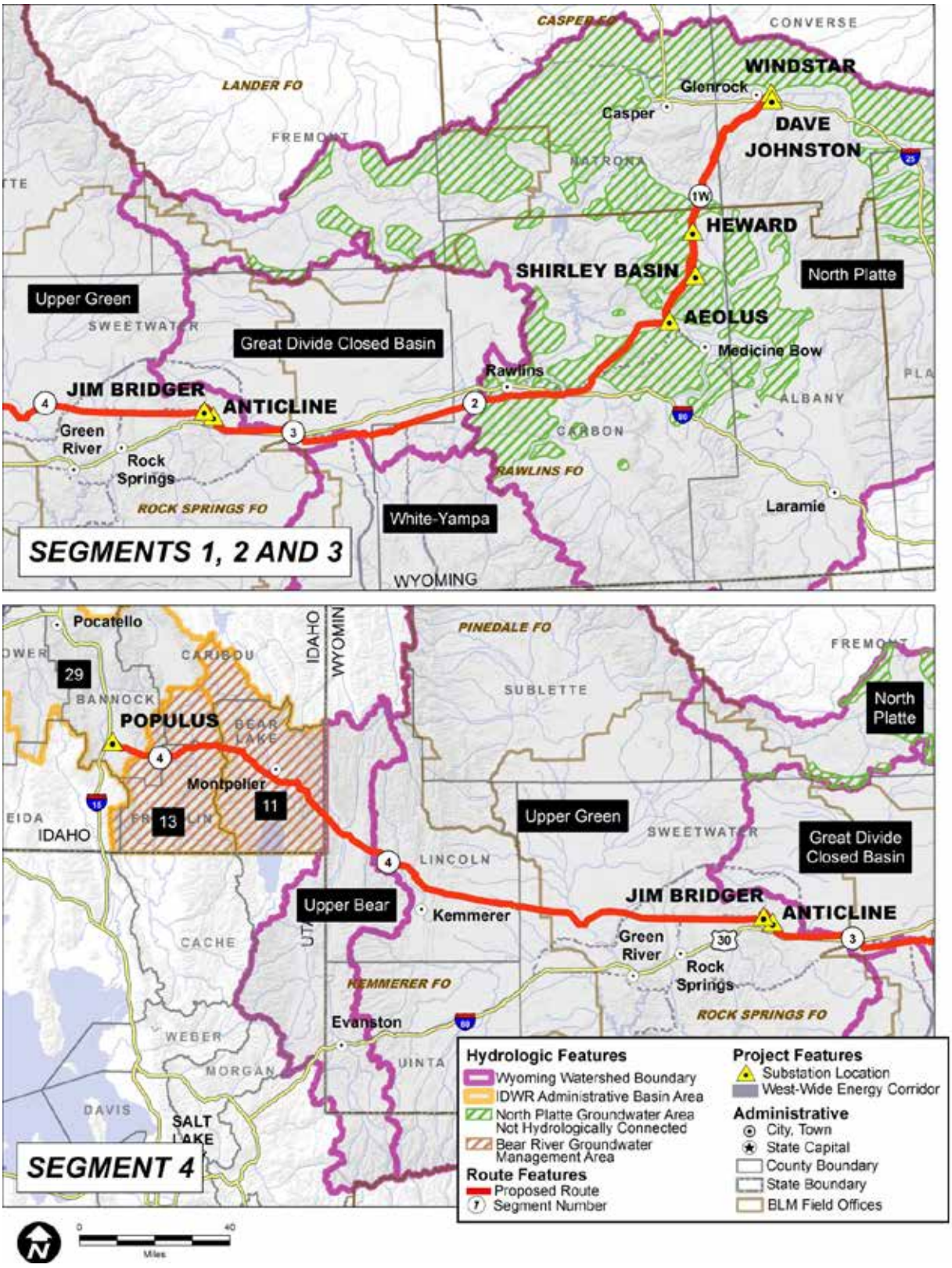


Figure 3.7-1. Watersheds Crossed by Project Facilities

Bear River Watershed: Water may be obtained from existing permitted water sources and new temporary water rights may be developed.

Idaho

From east to west, the Project crosses Bear Lake County, northeast Franklin County, and terminates in southern Bannock County. This area includes the Bear River Critical Groundwater Area. No new water appropriations have been approved here since 1987. Similarly, southern Bannock County is considered to contain limited groundwater. Therefore, the Idaho portion of the Project is closed to new water appropriations.

The Idaho Water Resources Board is an entity within IDWR. The Water Resources Board maintains a Water Bank, providing short-term leases of groundwater. The Water Resources Board has divided the state into numerous basin areas. From east to west, the Project crosses Basins 11, 13, and 29. There is currently no available water in the Water Bank for Basins 11 or 13; however, available potable water is currently present for Basin 29.

Application for lease of water from the Water Bank requires preparation of an application stating water point of use, estimated quantity, water purpose, and duration of need. The application is present on the IDWR website.[14] The permitting process is typically short; a completed application may be approved within a few weeks to a few months.

If water is unavailable from the Water Bank, a current water user might be found willing to lease or sell their water right. Alternatively, local construction contractors may have existing water rights for construction uses sufficient to service the Project.

3.8 Construction Elements

3.8.1 Construction Schedule

Due to the broad scope of construction, the varied nature of construction activities, and the geographic diversity of the Project area, the Companies intend to employ two or more contractors to complete transmission line and substation work within the projected timeframe and in accordance with industry performance standards. The Project may involve Engineering, Procurement, and Construction (EPC)[15] contracts with multiple contractors working concurrently on the separate line segments and substations of Gateway West in order to meet the planned in-services dates.

3.8.2 Construction Workforce

The proposed Project will be constructed primarily by contract personnel, with the Companies responsible for Project administration and inspection. The construction workforce will consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel who will perform the construction tasks.

The Companies' proposed schedule identifies general construction timeframes by segment and substation, generally 4 to 5 years. Construction times by segment are,

[14] http://www.idwr.idaho.gov/RulesStatutesForms/WaterRights/WaterRightForms.htm

[15] EPC contract means that the final engineering, all or some of the procurement, and the construction are performed by one contractor.

however, expected to range from about 8 months to 27 months; similarly, substation construction times range from 6 to 24 months. This construction will take place within the broader timeframes identified above, but the exact timing is unknown.

The construction personnel peak on-site in any line segment will be when the wire stringing operations begin while several other operations are occurring at the same time, which will likely include excavating holes, installing foundations (500-kV), hauling materials, assembling structures, and erecting/setting structures.

Although the construction rate of progress is reduced in the winter, the Companies have planned an aggressive schedule and it is anticipated that construction will continue through the winter months in the lower-elevation areas of the Project, except during winter storms. In the higher-elevation areas of the Project, winter storms and snow will limit access to the ROW, for example in Segment 4 in western Wyoming and eastern Idaho. In these areas, it is expected that construction will be suspended on some portions of the ROW during the peak winter months and construction resources will either be demobilized or shifted to other segments of the Project.

Transmission line construction commences with contractor mobilization. The Construction Contractor will mobilize equipment and personnel to the construction site at various stages in the Project schedule depending on operational requirements. This will cumulatively require approximately 6 weeks throughout the schedule for each segment. Construction management, engineering support, inspection, materials handling, and administration are required throughout the Project. First, surveyors start at one end of the segment and stake the locations of access roads. Road construction can start 1 to 2 weeks after the surveyors begin, which may require clearing in higher elevations where tree removal is required prior to road construction. After a couple of weeks of road construction another survey crew can begin staking the structure locations. A week or two after the survey crew starts staking structure locations, excavation of holes for foundations for 500-kV towers, or for directly embedded poles for 230-kV or 345-kV structures, can begin. For 500-kV construction, the installation of the concrete pier foundations would begin within the next couple of weeks. The foundations need time to cure and develop to full structural strength (i.e., compression capacity) before lattice towers can be installed. Five to six weeks after foundation installation has begun, lattice tower assembly and erection can begin. For 230-kV and 345-kV construction, structure assembly and setting can begin immediately after the excavation of holes has begun. For 230-kV, 345-kV, and 500-kV construction, the wire installation crews start approximately 8 to 12 weeks after assembly and erection/setting begins. This is followed by final cleanup, and reclamation.

The substation work is estimated to take between 40 and 60 personnel at each substation site. Site grading requires a small number of people including a surveyor, heavy equipment operators, foreman, and construction management personnel. Each substation requires numerous concrete crews in order to complete the below grade construction and concrete placement on schedule. Concrete will be provided by a batch plant producing approximately 160 cubic yards per day delivered in 8-cubic-yard trucks. Other below-grade crews will be needed to install conduit, cable trench, and ground mat material. The below-grade crews will be on site overlapping the schedule of the concrete crew. Several three-person crews working with boom trucks and bucket trucks

will erect the steel and install the physical equipment in the yard. Considering the size of the substation expansions, this requires approximately three fully equipped crews per station. Electrical installation will be handled by 20 people arranged into two-person teams alternating between indoor and outdoor activity. Construction will generally occur between 7 a.m. and 7 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities.

3.8.3 Construction Equipment and Traffic

Equipment required for construction of the Gateway West transmission lines and substations will include, but is not limited to, that listed in Tables 3.8-1 – Transmission Line Construction Equipment Requirements, and 3.8-2 – Substation Equipment Requirements. These tables also include the anticipated daily duration of equipment use for each segment for each type. Tables 3.8-3 – Transmission Line Average and Peak Construction Traffic, and 3.8-4 – Substation Average and Peak Construction Traffic, provide an estimate of the average and peak construction traffic during the construction period.

Construction access will occur at several locations along the transmission line route, resulting in dispersed construction traffic. The Construction Contractor will be required to develop a traffic plan as outlined in Appendix L – Framework Traffic and Transportation Management Plan of the POD. The equipment required for transmission line construction is similar for the 500-kV, 345-kV, and 230-kV lines, although the equipment needed for 345-kV and 230-kV line construction is generally smaller than for 500-kV construction. The following is a summary of anticipated equipment to be used for each construction activity. Survey work only requires the use of pickup trucks or ATVs. Road construction will utilize pickups, bulldozers, motor graders, and water trucks. To dig holes and directly embed the 230-kV and 345-kV H-frame poles or install 500-kV foundations it is anticipated that pickup trucks, 2-ton trucks, hole diggers, bulldozers, concrete trucks, water trucks, carryalls, cranes, hydro cranes, wagon drills, dump trucks, and front-end loaders will be used. Hauling steel, or poles, braces and hardware for the 230-kV and 345-kV lines to the structure sites requires the use of steel haul trucks, carryalls, cranes, and forklifts. For assembly and erection of structures it is anticipated that pickup trucks, 2-ton trucks, carryalls, cranes, and a heavy lift helicopter may be used. Wire installation requires the most equipment including pickups, wire reel trailers, diesel tractors, cranes, 5-ton boom trucks, splicing trucks, three drum pullers, single drum pullers, tensioners, sagging dozers, carryalls, static wire reel trailers, and a light helicopter. Final cleanup, reclamation, and restoration utilize pickups, 2-ton trucks, bulldozers, motor graders, dump trucks, front-end loaders, and water trucks. The highest level of traffic will occur when the wire stringing operations begin while several other operations are occurring at the same time which will likely include excavating holes, installing foundations, hauling steel, assembling structures, and erecting structures.

For the substation work, the highest level of traffic will be during site grading and foundation installation. As tabulated in Table 3.8-6 – Substation Solid Waste Generation from Construction Activities, varying amounts of solid waste and soil not suitable for re-use at each site will have to be disposed of off-site at a remote location. Dump trucks will be leaving and returning to the site on a constant basis each day for

the duration of the site grading. The volume of concrete required at each site will vary in proportion to the size of the substation site, and may be up to 7,000 cubic yards of concrete at the very large substations. Delivering, placing, and finishing concrete is labor intensive. Once concrete placement is complete, traffic on the surrounding roads will subside. Workers arrive in the morning and leave at the end of the day. The balance of daily traffic is material deliveries from storerooms, which will probably be one or two trips per day. Each substation requires the delivery of permitted loads such as transformers and/or reactors. Each reactor or transformer bank delivered will require four large multiple-axle lowboy trucks. Delivery will be scheduled to match the completion of their respective foundations.

3.8.4 Removal of Facilities and Waste Disposal

ROW construction generates a variety of solid wastes including concrete, hardware, and wood debris. The solid wastes generated during construction will be recycled or hauled away for disposal daily. Excavation along the ROW generates solid wastes that could potentially be used as fill; however, some of the excavated material will be removed for disposal. Excavated material that is clean and dry will be spread along the ROW. The volumes shown in Table 3.8-5 show that no excavated material is expected to be hauled away and not disposed of in the ROW for each segment during construction of Gateway West.

The values shown in Tables 3.8-5 –Transmission Line Solid Waste Generation from Construction Activities, and 3.8-6 – Substation Solid Waste Generation from Construction Activities, reflect the amount of vegetation and rock larger than 6 inches in diameter that cannot be processed and converted into backfill for compaction. Very little of the soil excavated during foundation installation is waste product. Above-grade waste will be packing material such as crates, pallets, and paper wrapping to protect equipment during shipping.

Table 3.8-1. Transmission Line Construction Equipment Requirements

Equipment	Segment 1W(a)			Segment 1W(c)			Segment 2			Segment 3 and 3A			Segment 4		
	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk
Pickup	10	8	6	10	8	6	37	8	6	37	8	6	37	8	6
Bulldozer	3	4	6	3	4	6	6	4	6	6	4	6	6	4	6
Motor Grader	2	4	6	2	4	6	4	4	6	4	4	6	4	4	6
Water Truck	2	6	6	2	6	6	5	6	6	5	6	6	5	6	6
Hole Digger	2	8	6	2	8	6	3	8	6	3	8	6	3	8	6
Truck (2-ton)	3	5	6	3	5	6	5	5	6	5	5	6	5	5	6
Concrete Truck	0	6	6	0	6	6	6	6	6	6	6	6	6	6	6
Carry All	12	6	6	12	6	6	26	6	6	26	6	6	26	6	6
Hydro Crane	0	7	6	0	7	6	1	7	6	1	7	6	1	7	6
Crane	7	7	6	7	7	6	22	7	6	22	7	6	22	7	6
Wagon Drill	0	5	6	0	5	6	1	5	6	1	5	6	1	5	6
Steel Haul Truck	2	7	6	2	7	6	4	7	6	4	7	6	4	7	6
Fork Lift	3	6	6	3	6	6	5	6	6	5	6	6	5	6	6
Wire Reel Trailer	6	7	6	6	7	6	12	7	6	12	7	6	12	7	6
Diesel Tractor	5	5	6	5	5	6	12	5	6	12	5	6	12	5	6
Boom Truck (5-ton)	3	6	6	3	6	6	6	6	6	6	6	6	6	6	6
Splicing Truck	1	3	6	1	3	6	4	3	6	4	3	6	4	3	6
3-Drum Puller	2	4	6	2	4	6	4	4	6	4	4	6	4	4	6
Single Drum Puller	1	3	6	1	3	6	2	3	6	2	3	6	2	3	6
Tensioner	1	4	6	1	4	6	4	4	6	4	4	6	4	4	6
Sagging Dozer	2	3	6	2	3	6	4	3	6	4	3	6	4	3	6
Static Wire Reel Trailer	2	5	6	2	5	6	4	5	6	4	5	6	4	5	6
Dump Truck	2	4	6	2	4	6	3	4	6	3	4	6	3	4	6
Loader	3	4	6	3	4	6	3	4	6	3	4	6	3	4	6
Light Helicopter	1	6	6	1	6	6	2	6	6	2	6	6	2	6	6
Heavy Helicopter	0	6	6	0	6	6	2	6	6	2	6	6	2	6	6

Table 3.8-2. Substation Equipment Requirements

Equipment	Windstar			Dave Johnston			Heward			Shirley Basin			Aeolus		
	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk	Qty.	hrs/ day	days/ wk
Below Grade															
Auger	2	10	6	2	10	6	2	10	6	2	10	6	10	10	6
Backhoe	1	10	6	1	10	6	1	10	6	1	10	6	2	10	6
Front Loader	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Ditch Witch	1	10	6	1	10	6	1	10	6	1	10	6	2	10	6
Concrete Truck	2	10	6	2	10	6	2	10	6	2	10	6	10	10	6
Water Truck	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Dump Truck	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Trailer	2	10	6	2	10	6	2	10	6	2	10	6	2	10	6
Crew Truck/Car	2	10	6	2	10	6	2	10	6	2	10	6	4	10	6
Hauler	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Skid Steer Loader	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Batch Plant	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Drill Rig	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Truck with Trailer	2	10	6	2	10	6	2	10	6	2	10	6	4	10	6
Compressor	1	10	6	1	10	6	1	10	6	1	10	6	2	10	6
Construction Fork	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
980 Loader	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Vibrating Roller	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Inspection Truck	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Above Grade															
Crane	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6
Bucket Truck	2	10	6	2	10	6	2	10	6	2	10	6	2	10	6
Boom Truck	2	10	6	2	10	6	2	10	6	2	10	6	2	10	6
Fork Lift	1	10	6	1	10	6	1	10	6	1	10	6	1	10	6

Table 3.8-2. Substation Equipment Requirements (continued)

	Anticline			Jim Bridger 345-kV Yard			Populus		
Equipment	**Qty.**	**hrs/day**	**days/wk**	**Qty.**	**hrs/day**	**days/wk**	**Qty.**	**hrs/day**	**days/wk**
Below Grade									
Auger	20	10	6	2	10	6	10	10	6
Backhoe	4	10	6	1	10	6	2	10	6
Front Loader	2	10	6	1	10	6	1	10	6
Ditch Witch	4	10	6	1	10	6	2	10	6
Concrete Truck	20	10	6	2	10	6	10	10	6
Water Truck	1	10	6	1	10	6	1	10	6
Dump Truck	4	10	6	1	10	6	1	10	6
Trailer	2	10	6	2	10	6	2	10	6
Crew Truck/Car	8	10	6	2	10	6	4	10	6
Hauler	1	10	6	1	10	6	1	10	6
Skid Steer Loader	2	10	6	1	10	6	1	10	6
Batch Plant	1	10	6	1	10	6	1	10	6
Drill Rig	2	10	6	1	10	6	1	10	6
Truck with Trailer	4	10	6	2	10	6	4	10	6
Compressor	4	10	6	1	10	6	2	10	6
Construction Fork	2	10	6	1	10	6	1	10	6
980 Loader	2	10	6	1	10	6	1	10	6
Vibrating Roller	2	10	6	1	10	6	1	10	6
Inspection Truck	1	10	6	1	10	6	1	10	6
Above Grade									
Crane	1	10	6	1	10	6	1	10	6
Bucket Truck	4	10	6	2	10	6	2	10	6
Boom Truck	3	10	6	2	10	6	2	10	6
Fork Lift	2	10	6	1	10	6	1	10	6

Table 3.8-3. Transmission Line Average and Peak Construction Traffic

Vehicle Type	Average Daily Round Trips	Peak Daily Round Trips
Segment 1W(a)		
Construction Workers	13	20
Delivery	2	4
Heavy Trucks	7	11
Water Trucks	2	4
Total	**24**	**39**
Segment 1W(c)		
Construction Workers	13	20
Delivery	2	4
Heavy Trucks	7	11
Water Trucks	2	4
Total	**24**	**39**
Segment 2		
Construction Workers	35	50
Delivery	5	8
Heavy Trucks	18	27
Water Trucks	5	8
Total	**63**	**93**
Segment 3		
Construction Workers	35	50
Delivery	5	8
Heavy Trucks	18	27
Water Trucks	5	8
Total	**63**	**93**
Segment 3A		
Construction Workers	13	20
Delivery	2	4
Heavy Trucks	7	11
Water Trucks	2	4
Total	**24**	**39**
Segment 4		
Construction Workers	35	50
Delivery	5	8
Heavy Trucks	18	27
Water Trucks	5	8
Total	**63**	**93**

Table 3.8-4. Substation Average and Peak Construction Traffic

Vehicle Type	Average Daily Round Trips	Peak Daily Round Trips
Windstar Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Dave Johnston Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Heward Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Shirley Basin Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Aeolus Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Anticline Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Jim Bridger 345-kV Yard		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**
Populus Substation		
Construction Workers	2	4
Delivery	2	4
Heavy Trucks	8	12
Water Trucks	8	10
Total	**20**	**30**

Table 3.8-5. Transmission Line Solid Waste Generation from Construction Activities

Activity	Segment 1W(a)		Segment 1W(c)		Segment 2		Segment 3		Segment 4	
	Excavation Removal Total (yard³)	Other Solid Waste Total (yard³)	Excavation Removal Total (yard³)	Other Solid Waste Total (yard³)	Excavation Removal Total (yard³)	Other Solid Waste Total (yard³)	Excavation Removal Total (yard³)	Other Solid Waste Total (yard³)	Excavation Removal Total (yard³)	Other Solid Waste Total (yard³)
230-kV Structure Installation										
230-kV Single Circuit - H-frame Family (includes angle & dead-ends)	0	163,500	0	160,100	-	-	-	-	-	-
345-kV Structure Installation										
							0	96,000		
500-kV Structure Installation										
500-kV Single Circuit - Tangent Lattice Tower	-	-	-	-	-	114,765	0	57,320	0	246,763
500-kV Single Circuit - Small Angle Lattice Tower	-	-	-	-	-	16,395	0	8,189	0	35,252
500-kV Single Circuit - Medium Angle Lattice Tower	-	-	-	-	-	8,197	0	4,094	0	17,626
500-kV Single Circuit - Medium Dead-End Lattice Tower	-	-	-	-	-	16,395	0	8,189	0	35,252
500-kV Single Circuit - Heavy Dead-End Lattice Tower	-	-	-	-	-	8,197	0	4,094	0	17,626

Table 3.8-6. Substation Solid Waste Generation from Construction Activities

Activity	Total Solid Waste by Substation (cubic yards)							
	Windstar	**Heward**	**Shirley Basin**	**Aeolus**	**Dave Johnston**	**Anticline**	**Jim Bridger 345-kV Yard**	**Populus**
Substation Grading/ Site Work	250	250	250	8,700	50	16,200	250	2,500
Substation Construction (Below Grade)	65	65	65	474	18	1272	65	601
Substation Construction (Above Grade)	144	144	144	192	120	432	144	192

4.0 SYSTEM OPERATIONS AND MAINTENANCE

The 500-kV transmission lines and substations to be constructed as part of the Project will comprise critical infrastructure of the Companies' transmission system, and of the western U.S. electrical grid. Limiting the duration of unplanned outages and planning for the use of live-line maintenance techniques to minimize the requirement for any outages is an important part of the design, construction, and operations/maintenance requirements for this Project.

4.1 Routine System Operation and Maintenance

The goal of the Companies is to provide their customers with a reliable supply of electricity while maintaining the overall integrity of the regional electrical grid. The Companies' obligation to maintain reliable operation of the electrical system is documented in the Companies' agreements with the various states through the public service commissions and is directed through compliance with industry standard codes and practices such as the NESC (ANSI C2), which governs the design and operation of high-voltage electric utility systems.

In 2005, Congress passed the Energy Policy Act of 2005, which provided a regulatory basis for the implementation of specific incentives (and penalties) for maintaining reliable service, among other issues. As a result of the passage of the Act, the Federal Energy Regulatory Commission selected the North American Electric Reliability Corporation (NERC) to act as the enforcement agency for compliance with electric utility reliability and operating standards, among other issues. The Companies are required to be in compliance with the various reliability standards promulgated through the implementation of the NERC policies and procedures. Additionally, the Companies are governed by the WECC standards that may be in addition to or more stringent than those currently required by NERC. In response, the Companies have prepared internal operation and maintenance policies and procedures designed to meet the requirements of the NERC, WECC, and the state public utility commissions, while remaining in compliance with the applicable codes and standards with respect to maintaining the reliability of the electrical system.

Operations and maintenance activities include transmission line patrols, climbing inspections, structure and wire maintenance, insulator washing in selected areas as needed, and access roads repairs. The Companies will keep necessary work areas around structures clear of vegetation and will limit the height of vegetation along the ROW. Periodic inspection and maintenance of each of the substations and communications facilities is also a key part of operating and maintaining the electrical system. The following sections provide details on the anticipated operation and maintenance activities for the Project.

After the transmission line has been energized, land uses that are compatible with safety regulations will be permitted in and adjacent to the ROW. Existing land uses such as agriculture and grazing are generally permitted within the ROW. Incompatible land uses within the ROW include construction and maintenance of inhabited dwellings and any use requiring changes in surface elevation that would affect electrical clearances of existing or planned facilities.

Land uses that comply with local regulations will be permitted adjacent to the ROW. Compatible uses of the ROW on public lands would have to be approved by the appropriate agency. Permission to use the ROW on private lands will have to be obtained from the utility owning the transmission line.

4.1.1 Routine System Inspection, Maintenance, and Repair

Regular inspection of transmission lines and support systems is critical for safe, efficient, and economical operation of the Project.

4.1.2 Transmission Line Maintenance

Regular ground and aerial inspections will be performed in accordance with the Companies' established policies and procedures for transmission line inspection and maintenance. The Companies' transmission lines will be inspected for corrosion, equipment misalignment, loose fittings, vandalism, and other mechanical problems. The need for vegetation management will also be determined during inspection patrols.

Inspection of the entire transmission line system is conducted semi-annually. Aerial inspection is conducted by helicopter semi-annually and requires two or three crew members, including the pilot. Detailed ground inspections take place on an annual basis using access roads to each structure. Ground inspection uses four-wheel-drive trucks or ATVs. The inspector assesses the condition of the transmission line and hardware to determine if any components need to be repaired or replaced, or if other conditions exist that require maintenance or modification activities. The inspector also notes any unauthorized encroachments and trash dumping on the ROW that could constitute a safety hazard. The inspector accesses each of the structure locations along each line and uses binoculars and spotting scopes to perform this inspection.

4.1.3 Hardware Maintenance and Repairs

Routine maintenance activities are ordinary maintenance tasks that have historically been performed and are regularly carried out on a routine basis. The work performed is typically repair or replacement of individual components (no new ground disturbance), performed by relatively small crews using a minimum of equipment, and usually is conducted within a period from a few hours up to a few days. Work requires access to the damaged portion of

the line to allow for a safe and efficient repair of the facility. Equipment required for this work may include four-wheel-drive trucks, material (flatbed) trucks, bucket trucks (low reach), boom trucks (high reach), or personnel lifts. This work is scheduled and is typically required due to issues found during inspections. Typical items that may require periodic replacement on a 500-kV tower include insulators, hardware or tower members. It is expected that these replacements will be required infrequently.

The Companies plan to conduct maintenance on the critical 500-kV, 345-kV, and 230-kV system using live-line maintenance techniques. Maintenance on the transmission lines can be completed safely using live-line techniques, thereby avoiding an outage to the critical transmission line infrastructure. High reach bucket trucks along with other equipment are used to conduct these activities. For the 500-kV lattice tower structures, this requires that adequate space be available at each structure site so that the high reach bucket truck can be positioned to one side or the other of the structure and reach up and over the lower phases to access the upper center phase for live-line maintenance procedures. For the 345-kV and 230-kV H-frame structures, this requires that adequate space be available at each structure site so that a bucket truck can be positioned to access the outside phases. To allow room at each structure for these activities, in low slope areas a pad area is required with the structure in the center of 250 feet (ROW width) by 100 feet for the single-circuit 500-kV structure, 150 feet by 50 feet for the 345-kV H-frame structure, and 125 feet by 50 feet for the 230-kV H-frame structure. Figures 4.1-1 through 4.1-3 depict the space requirements for live-line maintenance. The size and location of these required pads near the structures may vary depending on the side slope and access road at each site. The work areas and pads are cleared to the extent needed to safely complete the work. These pads remain in place after construction, but are revegetated after the initial construction is completed.

4.1.4 Access Road and Work Area Repair

ROW repairs include grading or repair of existing maintenance access roads and work areas, and spot repair of sites subject to flooding or scouring. Required equipment may include a grader, backhoe, four-wheel-drive pickup truck, and a tracked-loader or bulldozer. The cat-loader has steel tracks whereas the grader, backhoe, and truck typically have rubber tires. Repairs to the ROW are scheduled as a result of line inspections, or occur in response to an emergency situation.

4.1.5 Vegetation Management

The Companies must maintain work areas adjacent to electrical transmission structures and along the ROW for vehicle and equipment access necessary for operations, maintenance, and repair, including for live-line maintenance activities as described in Section 4.1.3 – Hardware Maintenance and Repairs. Figures 4.1-1 through 4.1-3 illustrate the typical equipment and space needed for live-line maintenance. During scheduled vegetation management activities, tall growing species, large shrubs and other obstructions are removed near structures to facilitate a safe working environment for inspection and maintenance of equipment and to ensure system reliability. At a minimum, trees and large brush are cleared within a 25-foot radius of the base or foundation of all electrical transmission structures, and to accommodate equipment pads to conduct live line maintenance operations as noted.

Vegetation management practices along the ROW will be in accordance with PacifiCorp and Idaho Power Company clearing specifications and vegetation management plans (see also Appendix R – Operations, Maintenance, and Emergency Response Plan).[16][17] Much of the transmission line route traverses arid country characterized by low-growing vegetation, while higher elevations receive more precipitation and exhibit more vegetation. The wire-border zone method to controlling vegetation is an approach used by PacifiCorp. This method results in two zones of clearing and revegetation. The wire zone is the linear area along the ROW under the wires and extending 10 feet outside of the outermost phase conductor. After initial clearing, vegetation in the wire zone will be maintained to consist of native grasses, legumes, herbs, ferns, and other low-growing shrubs that remain under 5 feet tall at maturity. The border zone is the linear area along each side of the ROW extending from the wire zone to the edge of the ROW. Vegetation in the border zone will be maintained to consist of tall shrubs or short trees (up to 25 feet high at maturity), grasses, and forbs. These cover plants benefit the ROW by competing with and excluding undesirable plants. The width of the wire and border zones is depicted in Figure 4.1-4 – ROW Vegetation Management, for the 230-kV, 345-kV H-frames and 500-kV single -circuit tower line segments. During operations, vegetation growth will be monitored and managed to maintain the wire-border zone objectives. Idaho Power's approach is to remove all tree species within the ROW where the conductor ground clearance is less than 50 feet, leaving grasses, legumes, herbs, ferns, and low-growing shrubs within the ROW. When conductor ground clearance is greater than 50 feet, for example a canyon or ravine, the Companies make provisions for allowing trees and shrubs to remain, provided they do not violate minimum clearance thresholds set forth by the Companies. Figure 4.1-5 – ROW Vegetation Management in Steep Terrain, shows how vegetation will be managed within the ROW in steep terrain.

Vegetation will be removed using mechanical equipment such as chain saws, weed trimmers, rakes, shovels, mowers, and brush hooks. Clearing efforts in heavy growth areas will use equipment such as a Hydro-Ax or similar. The duration of activities and the size of crew and equipment required depend on the amount and size of the vegetation to be trimmed or removed.

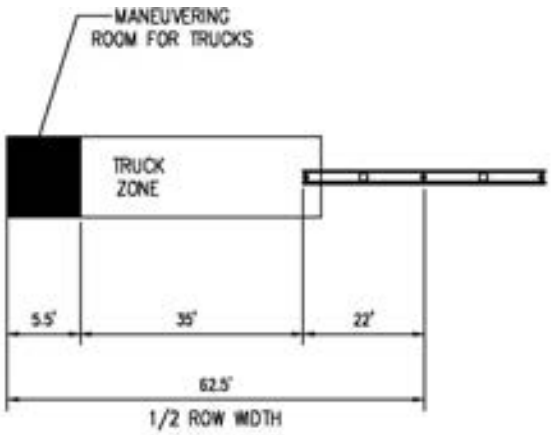
In selected areas, pesticides may be used to control noxious weeds and to meet vegetation management objectives[18][19]. All herbicide applications will be performed in accordance with federal, state, and local regulations, and in compliance with managing land agency requirements.

[16] PacifiCorp, 2012. Transmission & Distribution Vegetation Management Program Specification Manual June 15, 2012

[17] Idaho Power Company. 2011. Transmission Line Clearing Specifications. January.

[18] PacifiCorp, 2012. Transmission & Distribution Vegetation Management Program Specification Manual June 15, 2012

[19] Idaho Power Company. 2011. Framework for Managing Noxious Weeds. August.



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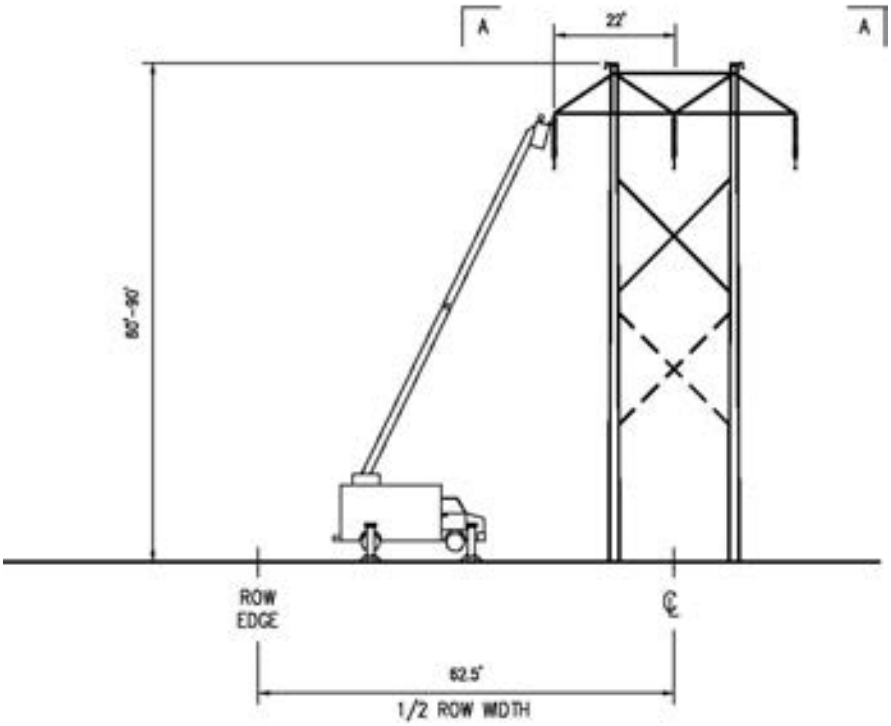

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Figure 4.1-1. Live-line Maintenance Space Requirements, 230 kV

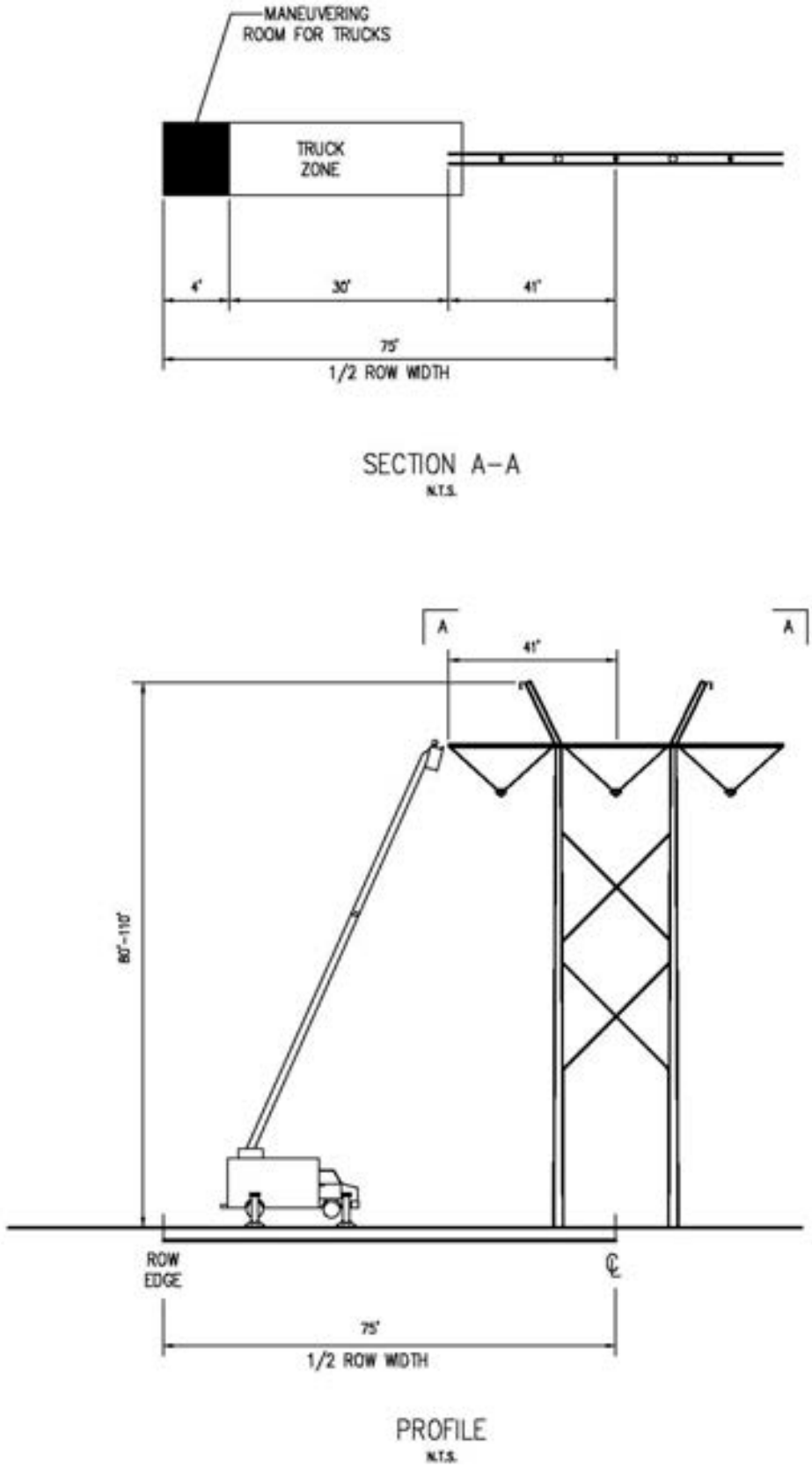


Figure 4.1-2. Live-line Maintenance Space Requirements, 345 kV

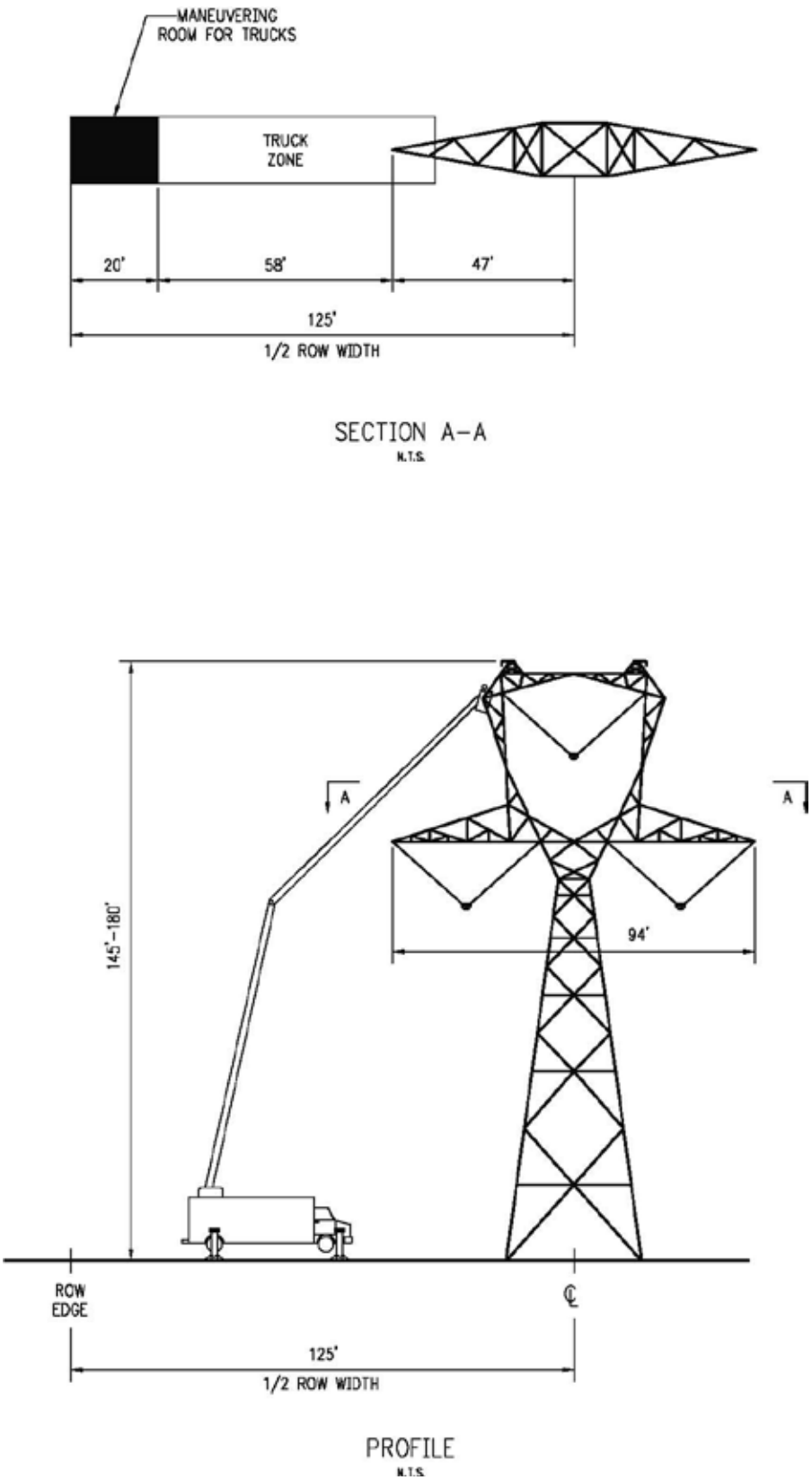
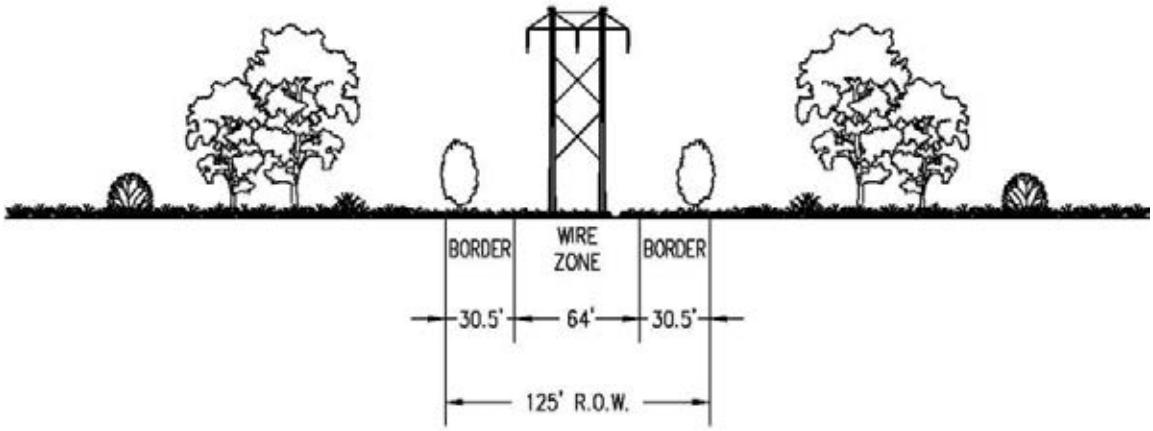
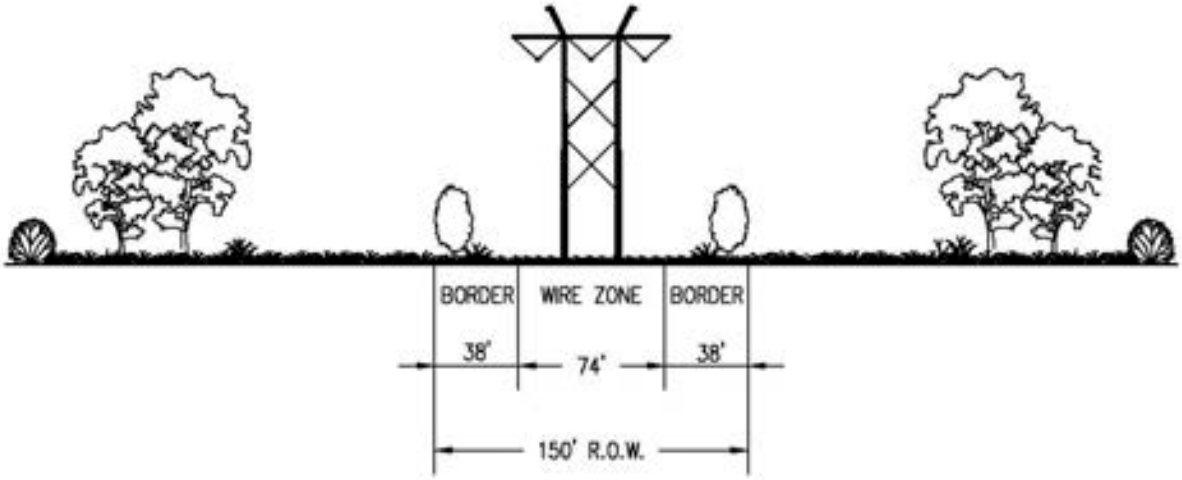


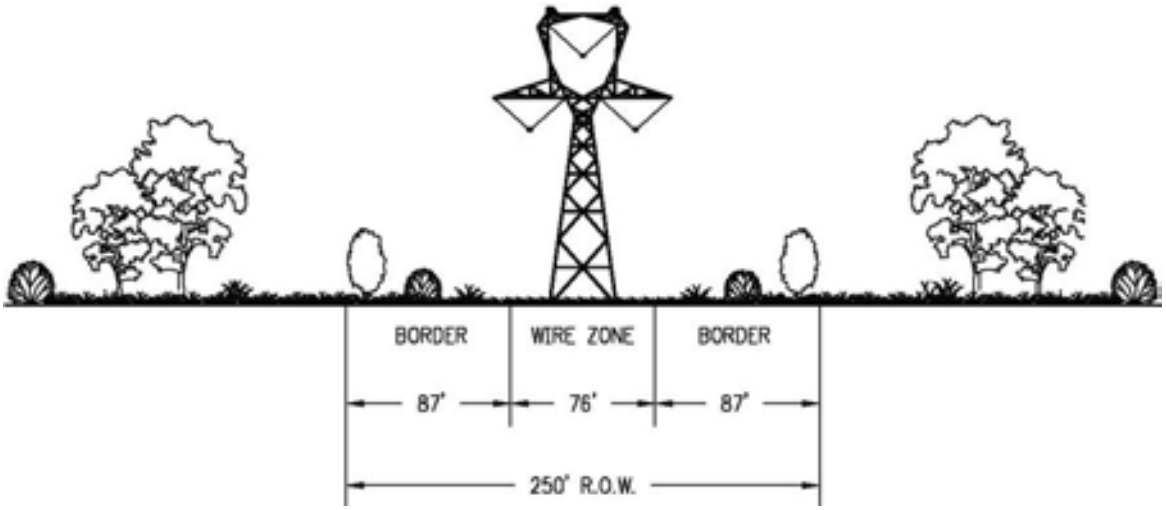
Figure 4.1-3. Live-line Maintenance Space Requirements, Single-Circuit 500 kV



Single Circuit 230 kV

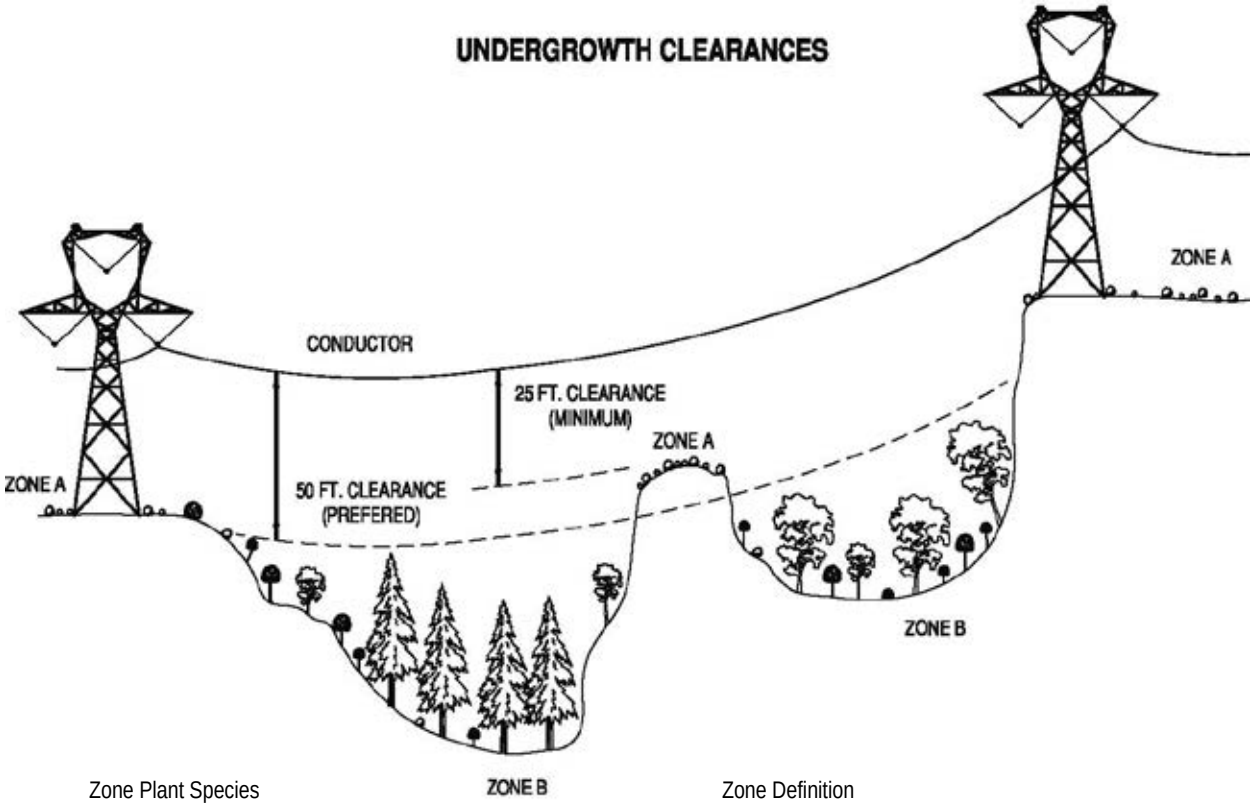


Single-Circuit 345 kV



Single-Circuit 500 kV

Figure 4.1-4. ROW Vegetation Management



Zone Plant Species

Zone A: Grasses, legumes, herbs, ferns and low growing shrubs.

Zone B: all deciduous and conifer trees.

Zone Definition

Zone A: When the conductor to ground clearance is less than 50', all tree species should be removed.

Zone B: When the conductor to ground clearance is greater than 50', all tree species should be removed if they have less than 50' of clearance, 25' minimum.

Figure 4.1-5. ROW Vegetation Management in Steep Terrain

4.1.6 Substation and Regeneration Station Maintenance

Regeneration station monitoring and control functions are performed remotely from the Companies' central operations facilities located at PacifiCorp's operation center in Portland, Oregon, and by Idaho Power Company from their operation center in Boise, Idaho. Unauthorized entry into regeneration stations is prevented with the provision of fencing and locked gates. Warning signs will be posted and entry to the operating facilities will be restricted to authorized personnel. Gateway West regeneration stations will not be staffed; however, a remotely monitored security system will be installed. Several forms of security are planned for each of the locations, although the security arrangements at each of the regeneration stations may differ somewhat. Security measures may include fire detection in the control building via the remote monitoring system; alarming for forced entry; and a perimeter security system coupled with remote sensing infrared camera equipment in the fenced area of the station to provide visual observation/confirmation to the system operator of disturbances at the fence line.

Maintenance activities include equipment testing, equipment monitoring and repair, and emergency and routine procedures for service continuity and preventive maintenance. Typically, once per year a major maintenance inspection takes place requiring up to 15 personnel for 1 to 3 weeks. Regeneration stations are visited every 2 to 3 months by one individual in a light truck to inspect the facilities. Annual maintenance is performed by a two-man crew in a light truck over a 2- to 5-day period.

4.2 Emergency Response

The operation of the system is remotely managed and monitored from control rooms at PacifiCorp's operation center in Portland, Oregon, and by Idaho Power Company from their operation center in Boise, Idaho. Electrical outages or variations from normal operating protocols are sensed and reported at these operation centers.

The implementation of routine operation and maintenance activities on powerlines minimizes the need for most emergency repairs. Emergency maintenance activities are often those activities necessary to repair natural hazard, fire, or human-caused damages to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the powerline, or restore service if there is an outage. In an emergency, the Companies must respond as quickly as possible to restore power.

The equipment necessary to carry out emergency repairs is similar to that necessary to conduct routine maintenance, in most cases. Emergency response to outages may require additional equipment to complete the repairs. For example, where the site of the outage is remote, helicopters may be used to respond quickly to emergencies.

In practice, as soon as an incident is detected, the control room dispatchers notifies the responsible operations staff in the area(s) affected and crews and equipment are organized and dispatched to respond to the incident.

4.2.1 Fire Protection

All federal, state, and county laws, ordinances, rules, and regulations pertaining to fire prevention and suppression will be strictly adhered to. All personnel will be advised of their responsibilities under the applicable fire laws and regulations.

When working on Public Lands, the Companies' employees and contractors will carry required suppression tools and equipment. The Companies or their Construction Contractor will notify local fire authorities and the BLM, BOR, or USFS (as appropriate) if a Project-related fire occurs within or adjacent to a construction area.

If the Companies become aware of an emergency situation that is caused by a fire on or threatening BLM and BOR-managed or NFS lands and that could damage the transmission lines or their operation, they will notify the appropriate agency contact. Specific construction-related activities and safety measures will be implemented during construction of the transmission line to prevent fires and to ensure quick response and suppression if a fire occurs. Typical practices to prevent fires during construction and maintenance/repair activities include brush clearing prior to work, stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing "fire behavior" training to all pertinent personnel,

keeping vehicles on or within designated roads or work areas, and providing fire suppression equipment and emergency notification numbers at each construction site.

5.0 DECOMMISSIONING

The proposed transmission line has a projected operational life of 50 years or longer. At the end of the useful life of the Project and if the facility were no longer required, the transmission line would be removed from service. At such time, conductors, insulators, and hardware would be dismantled and removed from the ROW. Structures would be removed and foundations removed to below ground surface.

Following abandonment and removal of the transmission line structures and equipment from the ROW, any areas disturbed during line dismantling would be reclaimed and rehabilitated.

The Companies describe roads necessary for the operation and maintenance of transmission lines as access roads. The purpose of access roads is to provide maintenance crews access to the transmission lines. These roads would not exist if the transmission lines did not exist. Many access roads serve a broader purpose, such as contributing to the federal, county, or state road systems. Access roads provide direct or indirect access to the transmission lines, but that access is not their primary purpose. The Companies are responsible for the reclamation of access following abandonment and in accordance with the landowner's direction, but is not responsible for reclamation of public access roads unless mutually agreed upon by the Companies and the landowner or required by the land management agency. Access roads would be decommissioned following removal of the structures and lines and may be decommissioned while the lines are in-service if they are determined to no longer be necessary.

The Companies may decommission access roads by 1) entering into an agreement with the BLM or USFS under which the agencies restore the road located on federal lands and are reimbursed for costs by the Companies, or 2) the Companies or their contractor implement restoration measures as described below.

When an access road has been identified as no longer necessary, the road will be recontoured to original conditions, reclaimed, and seeded as soon as possible during the optimal seeding season. In some cases, reseeding may not be necessary, given the existing amount of soil compaction and vegetation currently in place. Where required by the land management agency, compacted areas would be ripped and appropriate sediment control measures would be implemented.

The seed mix used for any restoration and revegetation project would be determined in consultation with the landowner or land management agency. All seed and plant material used on federal lands would be approved by the land management agency. All seed would meet all of the requirements of the Federal Seed Act and applicable Idaho and Wyoming laws regarding seeds and noxious weeds. Only seed certified as "noxious weed free" would be used. If requested, the Companies or their contractor would provide the landowner with evidence of seed certification. Any seed mixture would not contain aggressive, non-native species that might invade the site. Where

necessary, the surface of the ground would be prepared prior to seeding. Where practical, the Companies would follow these guidelines for preparing the seedbed:

1. The road surface would be cleared of foreign materials, such as garbage, paper, and other materials, but all rocks, limbs, or minor woody debris would be left in place. The Companies or their contractor would prepare the seedbed immediately prior to seeding.
2. Under favorable soil-moisture conditions, a standard disk or spring bar harrow would be used (where ripping is not required) to roughen the topsoil layer to create the desired surface texture before the seed is applied. Dirt clods and chiseled voids resulting from the roughening process increase the surface area for water collection and provide microsites for seed establishment. The soil would be disced or harrowed to no more than 2 inches deep at a time when soil moisture allows the surface to remain rough, with clods approximately 2 to 4 inches in diameter.
3. Ripping, discing, or harrowing would be performed parallel to surface contours. In this way, downslope alignment of furrows can be avoided. In areas that already have the desired soil characteristics; the seedbed does not need to be prepared.

After the seedbed has been prepared, the Companies or their contractor would broadcast the seed on the disturbed area, after which the seed would be lightly harrowed into the roadbed or raked into the ground. Mulch and fertilizers would be added if necessary. An area would not be seeded when wind velocities prohibit the seed mix from being applied evenly. If the seed does not germinate and establish to an agreed-upon level of vegetation cover (e.g., consistent with adjacent site conditions) after two growing seasons, the Companies or their contractor would reseed during a period acceptable to the landowner. On NFS lands, the Companies would be responsible for monitoring the effectiveness of soil protection and restoration measures and would take corrective measures as needed to ensure long-term soil protection.

Other seeding methods, such as drilling, hydroseeding, or aerial application, may be used depending on the area that requires reclamation and site conditions.

APPENDIX C
ENVIRONMENTAL COMPLIANCE MANAGEMENT PLAN

Appendix C

Environmental Compliance Management Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion of three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Environmental Compliance Management Plan (Plan) was prepared for Segment D because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

The BLM, BOR, and USFS will be responsible for enforcement of the terms and conditions of the BLM's and BOR's Right-of-Way (ROW) Grants and USFS Special Use Authorization (SUA) on federal lands during the term of the ROW Grant/SUA, respectively. As the lead federal agency, the BLM will engage a third-party Compliance Inspection Contractor (CIC) to act on behalf of the BLM to provide construction oversight and monitor compliance with the terms and conditions of the BLM's ROW grant. The POD has been developed for the selected route and will be an enforceable stipulation of the ROD and the BLM ROW grant. The BOR and USFS may choose to make the POD or a similar document enforceable as part of the ROD, ROW grant or SUA. On federal lands, the CIC will inspect and monitor preconstruction and

construction activities, as well as enforce the terms and conditions of the BLM's ROW grant. On non-federal lands, the CIC will inspect and monitor preconstruction and construction activities. In addition, the CIC will document disturbance of the entire Project on all lands analyzed in the Gateway West Transmission Line Project Environmental Impact Statement (EIS) and enforce requirements related to BLM responsibilities under the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA).

The Project will also require adherence to any federal, state, and local permits, as well as private landowner agreements (if applicable).

The Project has potential to impact sensitive environmental resources and, as a result, environmental protection measures (EPMs) have been developed to minimize potential impacts on these resources and will be applied, as applicable, to the Project (see POD, Section 5 – Environmental Protection Plans and Documents).

2.0 ENVIRONMENTAL COMPLIANCE MANAGEMENT PLAN ELEMENTS AND AUTHORITY

This Environmental Compliance Management Plan (ECMP) is the primary guidance document that states how the Project participants will uphold, document, and manage compliance with the ROW grant, the POD, landowner agreements, and all federal, state, and local permits. It is a centralized Project environmental compliance reference and is thereby intended to facilitate environmental compliance across the entire Project for all parties and describes the following essential elements:

- Roles and responsibilities of the participants
- Comprehensive inspection and monitoring program
- Corrective procedures in the event of non-compliance
- Standard protocol for variance requests, exceptions, and other deviations
- Communication plan
- Reporting process
- Comprehensive Project-specific environmental compliance training program

The ECMP is intended to be a controlled document and may be revised as needed throughout the construction process.

The Construction Contractor will contract with either Rocky Mountain Power or Idaho Power Company, depending on which Project segment is being constructed. Therefore, for clarity, the ECMP is structured assuming one company (Company) is the responsible entity.

As part of the Company's environmental compliance commitment, the Construction Contractor will be contractually bound to comply with all laws, regulations, and permit requirements, including the mitigation measures and other specific stipulations and methods set forth in this POD (within the bounds of construction activities and associated disturbance analyzed in the EIS). Project-specific permitting documents must be reviewed prior to any construction activities to identify and determine

application of all Project-wide and site-specific requirements. These Project-specific permitting documents will be distributed by the CIC to the appropriate parties.

A third-party CIC will be utilized to act on the BLM's behalf to ensure adequate oversight during the preconstruction, construction, and post-construction phases. The CIC will be brought on early enough to allow for an adequate amount of time for the CIC to review documents and develop on-the-ground familiarity with the Project. The CIC will be authorized to enforce the POD on BLM-managed lands. The CIC will also ensure BLM responsibilities under the NHPA and ESA are met on non-federal lands and disturbance on non-federal lands is consistent with the analysis in the EIS.

Environmental Inspectors will be retained by the Construction Contractor (as shown below in Figure 3-1 in Section 3.0 – Roles and Responsibilities). The Environmental Inspectors' primary focus will be to ensure that all construction activities are performed in accordance with the environmental commitments set forth in the POD, all Project-specific permitting documents, and any individual agreements. If the CIC is not present during construction on non-federal lands, the Environmental Inspectors must ensure any Project disturbance is approved to proceed and then document any Project disturbance that occurs in their reporting.

The BLM, through the CIC and the Company, will provide direct oversight of the Construction Contractor's environmental compliance performance. However, any specific work direction to the Construction Contractor will only come from the Company. Additional information about the Construction Contractor's role in this ECMP is explained below in Section 3 – Roles and Responsibilities.

3.0 ROLES AND RESPONSIBILITIES

The following section describes the roles and responsibilities of the primary entities involved with the Project, as well as describing their reporting relationships and roles in executing the ECMP (Figure 3-1 – ECMP Organization Chart). If other parties become engaged in this ECMP as additional participants, they would be responsible to function and abide by the protocols, terms, and conditions outlined in this ECMP and their reporting relationships would be case-specific according to their jurisdiction, expertise, and/or nature of their input. The roles identified below, as well as the corresponding responsibilities, are intended to be representative and not an exhaustive listing of either roles or subsequent responsibilities for those roles.

This section briefly discusses the variance process. However, a more detailed variance discussion is located in Section 4.2 – Variance Procedures (Unforeseen Circumstances).

3.1 Rocky Mountain Power

The Company will act as holder of all BLM and BOR ROW grants, USFS SUAs, and public and private easements. As such, the Company is ultimately accountable for adherence to the environmental permit requirements specified in the terms of its agreements and is responsible to ensure environmental impacts do not exceed those analyzed in the EIS and approved in the POD. To facilitate this goal, the Company will maintain regular and consistent communication with the BLM, the CIC, the Construction

Contractor, and any other pertinent Project entities prior to, during, and following construction.

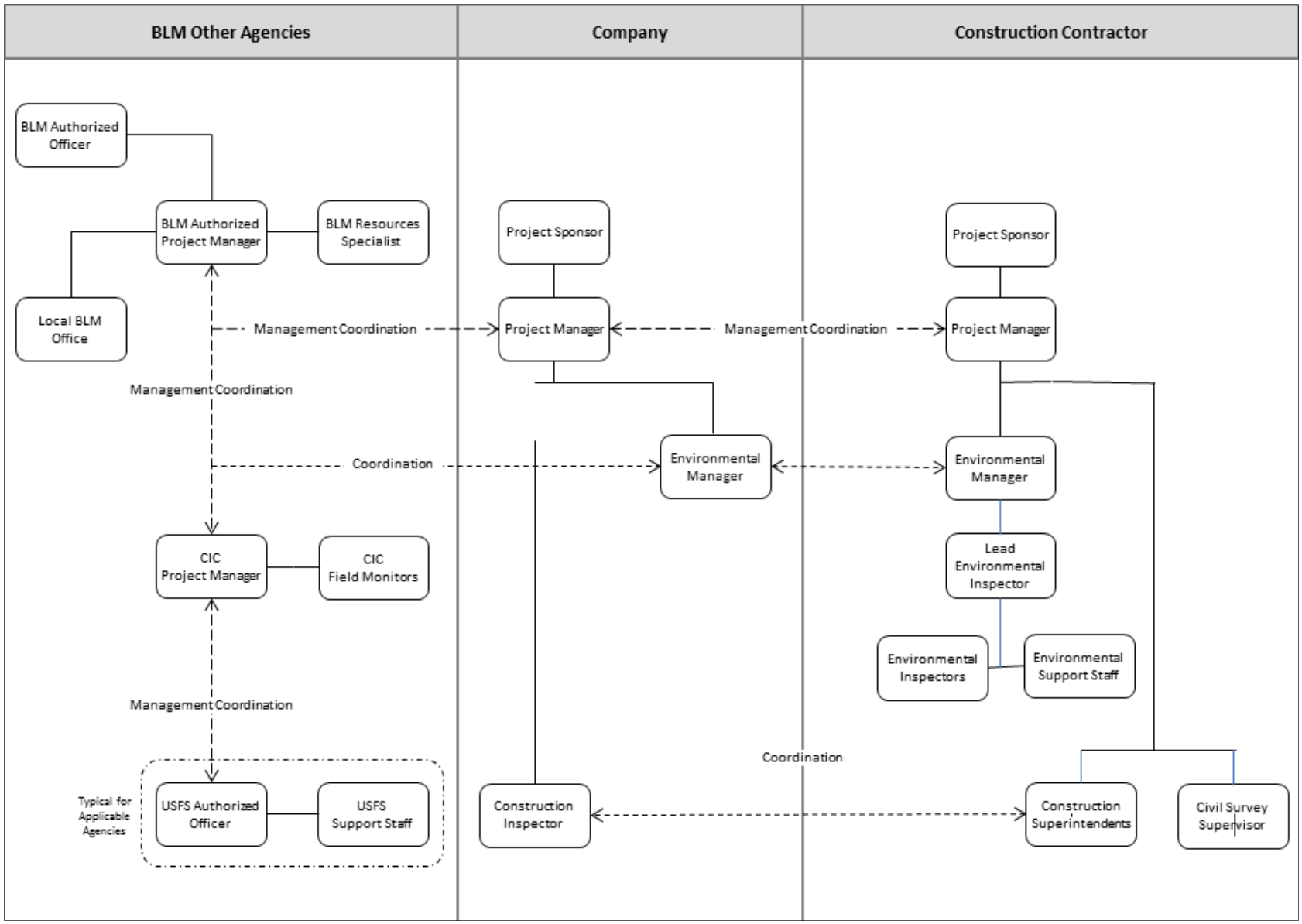

Figure 3-1. ECMP Organization Chart

3.1.1 Company's Project Sponsor

- Responsible for Project delivery. Ensures effective coordination occurs between the Company's Project Manager and Environmental Manager with the BLM's Project Manager and CIC and the Construction Contractor's Project Manager.
- Informs the Construction Contractor they are contractually bound to comply with all of the Project's environmental requirements, including the implementation of the ECMP.

3.1.2 Company's Project Manager

- Responsible for all aspects of Project execution and completion.
- Enforces Construction Contractor compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Manages the Company's Construction Inspector and Environmental Manager.

Reporting

- Reviews and evaluates weekly reports.
- Reports environmental compliance and violations to the Company's Project Sponsor as needed.

Variances

- Reviews and approves Construction Contractor's written variance requests for submittal to the CIC.

3.1.3 Company's Environmental Manager

- Facilitates oversight and coordination of Construction Contractor's compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Coordinates with the Company's Project Manager and Construction Inspector (see Section 3.1.4 – the Company's Construction Inspector), the Construction Contractor's environmental inspection/compliance personnel (see Section 3.3.5-Construction Contractor's Environmental Manager), and the CIC (see Section 3.2.3 – Compliance Inspection Contractor Project Manager) on a regular basis to evaluate environmental compliance with the Project.
- Monitors completion of all preconstruction and post-construction commitments.
- Serves as the Company's primary contact regarding environmental issues.
- Communicates environmental compliance issues to the CIC and tracks resolution of issues to completion.
- Maintains coordination with the Company's environmental departments throughout the Project.

Reporting

- Provides environmental updates to the Company's Project Manager.

- Reviews all Construction Contractor derived environmental documentation including, but not limited to, site-specific environmental plans, environmental plans, variance requests, daily reports, and weekly reports.

Variances

- Provides review and comments of written variance requests from the Construction Contractor.
- Submits completed variances to the Company's Project Manager for review, approval, and submission to the CIC.

3.1.4 Company's Construction Inspector

- Observes, witnesses, and monitors the construction activities of the Construction Contractor for compliance to the engineering contract documents, plans, standards, and specifications, to ensure construction quality.
- Coordinates with the Company's Environmental Manager regarding specific work activities scheduled to occur in environmentally sensitive areas that may require additional environmental oversight.

Reporting

- Reviews for accuracy and adequacy certain environmental compliance documents prepared by the Construction Contractor that could include, but are not limited to, Spill Prevention, Containment, and Countermeasures Plan; Stormwater Pollution Prevention Plan(s); and emergency communications contact list.

3.2 BLM

The objective of the BLM is to ensure ROW grant compliance during construction, operation, and maintenance phases of the Project. The CIC will represent the BLM during the preconstruction, construction, and post-construction (including reclamation) phases to ensure ROW grant compliance and ensure environmental impacts do not exceed those analyzed in the EIS and approved in the POD.[1]

The CIC assists the BLM by providing regular and consistent field observations, documenting their findings, processing and facilitating variance requests, approving Level 1 Variance requests and/or other deviations for which authority has been delegated to the CIC, and working with the Company and Construction Contractor to identify compliance issues and to maintain compliance during the Project.

The CIC shall work under the direct supervision and control of the BLM. No direction shall be taken from the Company or Construction Contractor. However, it is understood the CIC and the Company will work together to support the Project's timely and effective construction.

The CIC has the authority to issue an immediate temporary suspension or work stoppage order (WSO) if a specific work activity or activities are in violation. However,

[1] This ECMP describes the roles and responsibilities of the BLM. The BOR or USFS may choose to use the same environmental compliance management approach as, or independent of, the BLM.

all efforts shall be made to coordinate closely with the Company and Construction Contractor to report and document compliance concerns, providing an opportunity to resolve the concerns. Every effort shall be made to limit any work stoppage to situations involving immediate threats to sensitive resources, or emergency situations. The CIC is not, at any time or way, otherwise authorized to direct work undertaken by the Construction Contractor, with the exception of a WSO. If any additional environmental compliance oversight representative is required by agencies other than the BLM, their responsibilities would be consistent with those outlined for the BLM and the CIC as described in this ECMP, although their authority and enforcement would be solely applicable in their respective agency's area of jurisdiction.

3.2.1 BLM Authorized Officer

- Authority and decision maker for issues pertaining to BLM ROW grant.
- Supervises BLM Project Manager.
- Determines, in coordination with others, if any environmental non-compliance events, for which the Company is accountable, qualify as violations to the terms and conditions of the ROW grant or SUA if covered by this Plan.
- In accordance with 43 Code of Federal Regulations (CFR) 2807, suspends or terminates the ROW grant if the Company and/or its Construction Contractor do not comply with applicable laws and regulations or any terms, conditions, or stipulations.
- Issues BLM decisions unless otherwise delegated to the BLM Project Manager.

3.2.2 BLM Project Manager

- Enforces compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during construction of the Project.
- Responsible for ensuring that environmental impacts do not exceed those analyzed in the EIS and ROD.
- Manages third-party CIC.
- Coordinates with BLM resource specialists for their technical expertise and input.
- Informs the Company of any ROW grant violations due to environmental non-compliance and ensures any non-compliance is rectified.
- Reports major environmental compliance violations to BLM Authorized Officer.

Reporting

- Responsible to ensure that the Project Administrative Record is maintained accurately.

Variances

- If delegated by the BLM Authorized Officer, authorizes approval of Level 2 Variances.

3.2.3 Compliance Inspection Contractor Project Manager

- Represents the BLM in the field for compliance activities and reports directly to the BLM Project Manager (or designees).
- Manages and supports CIC Field Monitors and coordinates their daily activities.
- Verifies and reports Construction Contractor's compliance with all environmental requirements and tracks all reported non-compliance events and their resolution.
- Verifies construction occurs as outlined in the POD, Final EIS, Record of Decision, ROW grant and SUA, if covered under this Plan, and within the limits of disturbances analyzed in the EIS. Tracks all Project construction disturbance for inclusion in an End of Construction Project Report.
- Performs compliance monitoring work. At a minimum, the CIC or designated monitors are required to be on the ROW when activities involving the use of construction equipment have the potential for significant surface disturbance or harm to sensitive resources. Exceptions can be made should the CIC, using professional judgment, determine that reductions in presence would not adversely impact compliance oversight.
- Coordinates variance requests with the BLM Project Manager and the Company's Project Manager and Environmental Manager.
- Discusses any potential compliance issues with the Construction Contractor's environmental inspection staff as soon as possible.
- Responsible to act as primary intermediary between the Company and Construction Contractor and the BLM. Communicates and coordinates regularly with the Company's Project Manager and Environmental Manager.
- At a minimum, meets weekly with the BLM Project Manager (or designees), in person or by telephone, to review construction activities and the status of compliance.
- Provides recommendations to the BLM Project Manager on ways to resolve or prevent non-compliance issues prior to the commencement of work.
- Conducts the final route review and develops final report documenting the status of the ROW and the final amount of construction disturbance.
- Coordinates post-construction reclamation monitoring protocols developed by the Construction Contractor, to be approved by the BLM Authorized Officer or his/her designated representative, per the procedures and requirements identified in Appendix D – Framework Reclamation Plan of the POD.
- Performs post-construction reclamation monitoring as described in the Final Reclamation Plan in the POD (potentially conducted by a separate third-party contractor as determined by the BLM and the Company).

Reporting

- Documents all instances of non-compliance, or other problems that would reasonably be expected to result in environmental impacts.

- Provides weekly summary reports of compliance inspection to the BLM and the Company via a secure, but mutually exclusive, website. Weekly reports shall summarize the prior week's activities and include a brief description of construction activities, compliance issues, any additional acreage disturbed resulting from variances and corrective actions taken and any foreseeable issues.
- Reviews CIC Field Monitor's daily reports for completeness and accuracy.
- Participates in all meetings that involve environmental compliance aspects of the Project. The CIC is responsible for preparing meeting notes that highlight all decisions made during these meetings.
- Prepares and submits post-construction reclamation monitoring reports to the BLM and the Company throughout the post-construction period (potentially conducted by a separate third-party contractor as determined by the BLM and the Company).

Variances

- Coordinates with BLM Project Manager and Construction Contractor to review and approve variance requests.
- Authorizes approval or denial of Level 1 variances.

3.2.4 Compliance Inspection Contractor Field Monitors

- Assists CIC in conducting monitoring of construction activities as needed for pertinent Project environmental resources.
- Represents the BLM in the field for compliance activities.
- Verifies construction occurs as outlined in the POD, Final EIS, ROD, and/or ROW grant and SUA, if applicable. Tracks all Project construction disturbances for inclusion in an End of Construction Project Report.
- Conducts daily compliance inspection activities and develop daily reports.
- Coordinates with the Construction Contractor's Lead Environmental Inspector (LEI) as their primary point of contact.
- Discusses any potential compliance issues with the Construction Contractor's environmental inspection staff as soon as possible.
- Coordinates solutions for corrective action on non-compliance activities.
- Verifies corrective action is performed for non-compliance activities.
- May temporarily stop activities likely to damage protected or sensitive resources, where sensitive resources are intended to be avoided or protected, and for non-compliance.
- Attends safety and environmental coordination meetings to understand planned construction activities and any safety or environmental concerns.
- Performs the same duties as the CIC in the event that the CIC is not available.

Reporting

- Submits daily reports to the CIC Project Manager to document compliance or non-compliance with the Project's environmental requirements.

3.3 Construction Contractor

The Construction Contractor will be contractually bound to comply with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, throughout all phases of the Project.

3.3.1 Construction Contractor's Project Sponsor

- Responsible for Project completion in accordance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements.
- Manages Construction Contractor Project Manager to ensure adequate responses to any environmental issues.
- Ensures effective coordination between Construction Contractor's Project Manager and/or LEI with the Company's Project Manager and Environmental Manager, and the BLM Project Manager and/or CIC.

3.3.2 Construction Contractor's Project Manager

- Responsible for all aspects of Project execution and completion.
- Requires all Construction Contractor and subcontractor staff adhere to compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Coordinates with Construction Contractor Superintendent(s), as well as the Company's Project Manager and Environmental Manager, on a regular basis to stay updated regarding the Project's compliance with environmental laws and regulations.
- Manages Construction Contractor's senior level personnel.
- Requires all Superintendents and Foremen follow directions of the Construction Contractor's environmental compliance staff regarding maintaining compliance with all environmental laws and regulations.
- Ensures Superintendents and Foremen implement measures identified to resolve non-compliance issues in a timely manner.
- Develops and distributes weekly schedules of construction activities.
- Immediately informs the Company's Environmental Manager and CIC of any noncompliance. Responsible for resolving non-compliance situations.
- Responsible to develop a document control system to manage distribution of all documents and revisions.

Reporting

- Responsible for making sure the Company is provided with reports in a timely fashion.

Variances

- Reviews and approves written variance requests for submittal to the Company, CIC, and BLM.
- Can delegate authority to submit written variance request to others.

3.3.3 Construction Contractor's Environmental Manager

- Assists in tracking Project compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Coordinates with internal Construction Contractor personnel, the Company's staff, CIC, and other field inspection personnel on a regular basis to manage and track Project activities and ensure consistent communications Project-wide.
- Manages Construction Contractor's environmental staff.
- Determines the need for variances and works with internal Construction Contractor personnel to develop a formal request.
- Receives and reviews daily environmental compliance inspection reports from internal Construction Contractor environmental personnel.

Reporting

- Responsible for tracking and coordinating environmental issue areas and non-compliance reports and ensuring follow-up and resolution reports are filed.

Variances

- Tracks variances and communicates variance status with Construction Contractor's Project Manager and Superintendent(s).
- Coordinates processing and archiving of variances.
- Ensures completion of any required field surveys (biology, archaeology, etc.) and technical reports to support variances.
- Ensures variance requests are complete and accurate prior to submitting to the BLM.

3.3.4 Construction Contractor's Lead Environmental Inspector

- Regularly inspects or coordinates the inspection of all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction life of the Project.
- Has the authority to stop work when construction activities violate environmental laws and regulations or Project-specific permitting documents.

- Coordinates identification of sensitive resources and areas of concern prior to upcoming construction activities and coordinates appropriate measures with construction personnel accordingly.
- Supervises environmental crew in daily installation and maintenance of erosion control devices/measures and all other design features of the Project for environmental protection.
- Ensures all areas of the ROW are in compliance with all environmental requirements/ permits held by the Construction Contractor(s).
- Identifies, documents, coordinates, and oversees corrective actions to resolve non-compliance issues.
- Manages Environmental Inspectors.
- Acts as a resource and technical lead to Environmental Inspectors and construction personnel.
- Coordinates daily with Environmental Inspectors to discuss upcoming construction activities, potential problem areas, and areas of concern.
- Coordinates with Environmental Inspectors and construction personnel to provide information and facilitate regular communication among all parties.
- Serves as the primary point of contact for the third-party CIC Field Monitors.
- Develops post-construction reclamation monitoring in coordination with the CIC, BLM, and USFS as described in the Final Reclamation Plan in the POD, and as directed by the BLM and/or Company.
- Develops training program to facilitate compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Provides CIC and the Company's Environmental Manager with a course outline and all training material at least 30 days prior to any training for approval.
- Maintains records of training for all construction personnel and submits to the Company on a weekly basis.

Reporting

- Receives and reviews daily reports from Construction Contractor internal environmental inspectors and ensures completeness and accuracy and communicates action items or follow-up items to appropriate parties.
- Compiles daily reports into weekly summary report.
- Maintains centralized storage of daily/weekly Environmental Inspection reports and makes reports available at the request of the BLM Project Manager.
- Submits weekly summary documenting construction activities and compliance issues to the appropriate parties.

Variances

- Communicates variance status to Environmental Inspectors and construction personnel.

3.3.5 Construction Contractor's Environmental Inspectors

- Conducts inspection of construction activities for compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Conducts and documents daily inspections of construction activities.
- Ensures any Project disturbance is approved to proceed.
- Identifies sensitive resources and areas of concern prior to upcoming construction activities and coordinates with construction personnel to discuss.
- Acts as a resource to construction personnel to explain environmental regulations and how they are applied in the field.
- Verifies construction work areas, access roads, and features such as wetlands or sensitive habitat are properly marked and flagged before work is done in the area.
- Installs and inspects erosion control devices/measures to ensure functionality and communicates erosion control devices/measures maintenance needs to the Environmental Crew Foreman.
- Follows up on the repair and maintenance of erosion control devices/measures.
- Has the authority to stop work when construction activities violate environmental laws and regulations or Project-specific permitting documents.
- Inspects and documents reclamation and re-vegetation activities.

Reporting

- Submits daily reports to the LEI that document construction activities and associated compliance status for that day (see Attachment C-1 – Daily Inspection Report Form).
- Documents the resolution of any compliance issues in daily reports.

3.3.6 Construction Contractor's Superintendent(s)

- Manages construction activities.
- Requires all personnel follow direction provided by the Construction Contractor's environmental staff regarding maintaining compliance with all environmental laws and regulations, including all Project-specific permitting documents and landowner agreements, during the construction of the Project.
- Coordinates with the LEI, and the Construction Contractor's Environmental Manager and Environmental Inspectors, to ensure all construction personnel for which they are responsible abide by all applicable laws, permits, and agreements.
- Conducts regular meetings and training with construction personnel to review safety and environmental compliance practices.
- Ensures measures identified to resolve non-compliance issues are communicated to construction personnel and implemented in a timely manner.

- Immediately informs Construction Contractor's Project Manager of any non-compliance.
- Evaluates all compliance issues and ensures all supervisees involved with any construction activities complete the environmental training program.

Variances

- Provides data and/or supports development of written variance requests for submittal to the Company, CIC, and BLM.

3.3.7 Construction Contractor's Civil Survey Supervisor

- Sets initial and maintains ROW and easement boundary stakes and flagging with agreed-on Project flagging scheme.
- Delegates survey crews when necessary to work with Environmental Inspectors to adjust work areas to comply with environmental constraints.
- Communicates with the Company's Construction Inspector and Environmental Manager regarding changes to ROW boundaries.

Reports and Variances

- Provides data and/or supports development of maps and legal descriptions for Project reports, variance requests, and documentation in the Project Record.

4.0 PROCEDURES

4.1 Compliance Levels

Each separate activity that is inspected and documented in a daily report will be assigned a compliance level as defined below. The Construction Contractor's Environmental Inspectors will assess potential non-compliant activities based on the extent and nature of actual impacts on a resource, the potential for additional impacts on a resource, the intent behind the action, and the history of the occurrence.

4.1.1 Acceptable

All activities that are in compliance with the Project's environmental requirements will be documented as acceptable.

4.1.2 Problem Area

A problem area is a location or activity that does not meet the definition of acceptable but is not non-compliant (see Section 4.1.3 – Non-Compliance).

If a problem area is corrected in a timely manner, it will not be considered a non-compliance. The Construction Contractor's Environmental Inspectors will document problem areas and their resolutions in daily reports. Problem areas documented by the CIC Field Monitors will be reported and discussed with the Construction Contractor's Environmental Inspectors. If the problem area is not corrected in the agreed-on timeframe, resource damage occurs, or similar activities occur repeatedly, a non-compliance report may be issued by the CIC.

4.1.3 Non-Compliance

A non-compliance report will be prepared and issued by the CIC when construction activities violate the environmental laws and regulations, including all Project-specific permitting documents, result in damage to a protected resource, or place sensitive resources at unnecessary risk. A draft Non-Compliance Report Form is included as Attachment C-2 – Non-Compliance Report Form.

If the CIC or CIC Field Monitor observes a non-compliant activity, the Company's Environmental Manager and the Construction Contractor's Environmental Manager and LEI will be notified immediately to discuss the situation prior to issuing a non-compliance report. If a non-compliance report is issued, it will include the name(s) of the Construction Contractor personnel contacted and the time of the notification. In addition, a follow-up report will be filed documenting the resolution of the non-compliance. If the Construction Contractor's Environmental Manager or LEI is not immediately available or the severity of the situation requires immediate action, the CIC or CIC Field Monitor will contact the Construction Contractor's Project Manager.

If the Construction Contractor's Environmental Inspectors observe a non-compliance, a Superintendent or Foreman will be notified on-site immediately. The non-compliance will be resolved immediately or within an agreed-on timeframe that has been established by the Environmental Inspector and the Superintendent or Foreman. The Construction Contractor's Environmental Inspector will also notify the CIC Field Monitor and document the non-compliance in a daily report. The CIC will submit all non-compliance reports to the BLM Project Manager, the Company and Construction Contractor. The Construction Contractor's Environmental Inspectors, the Company's Environmental Manager, and the CIC will work together to establish the appropriate corrective actions and timeframes for the resolution of a non-compliance. The Construction Contractor's LEI and Environmental Inspectors will be responsible for communicating the corrective actions to the on-site Superintendent or Foreman. The CIC will submit all reports documenting a non-compliance resolution to the BLM Project Manager, the Company, and the Construction Contractor.

4.1.4 Response to Non-Compliant Activities

If the resolution of a non-compliance is not achieved through the process identified above, the following responses may be implemented:

4.1.4.1 Temporary Suspension

For incidents of non-compliance by the Company or the Construction Contractor that remain unresolved after the notifications described under Section 4.1.3 – Non-Compliance, the CIC or Project Manager may issue a temporary suspension to halt specific activities or all activities in a localized work area. The temporary suspension shall be issued orally and in writing to the Company's Project Manager, and the Company shall immediately provide notice of the temporary suspension to the Construction Contractor's Project Manager.

4.1.4.2 Work Stoppage Order

If necessary, a WSO to temporarily suspend or all activities in a localized work area or all construction activities across the Project may be issued orally or in writing by the CIC or BLM to the Company's Project Manager. A WSO would be appropriate in the event of serious non-compliance that could reasonably be expected to result in a risk of death or harm to persons or repeated violations of environmental requirements that have a detrimental effect to sensitive resources.

A conference call will be held with the CIC and BLM, the Company, and the Construction Contractor within 24 hours to discuss the WSO incident and to schedule a face-to-face meeting, if necessary. The face-to-face meeting will be held with all pertinent parties to discuss the WSO resolution within 24 hours of the initial conference call (excluding weekends and federal holidays).

After conclusion of the conference call, or meeting if necessary, the Company and Construction Contractor will resolve the issue(s) identified by the CIC or BLM. Once the issue(s) has been resolved and documented, the Company will provide a request, either verbal or in writing, to the BLM to resume construction activities within the non-compliance area. No construction activities shall be undertaken (except emergency or safety-related) until approval is provided by the CIC or BLM. The BLM shall review and respond to the Company request to resume construction activities within 24 hours after receipt. The BLM response shall either approve the request or provide additional criteria that must be met prior to resuming construction activities. Any additional criteria must not be arbitrary and cite applicable law(s), agreement (s), and/or permit requirements.

4.1.4.3 Grant Suspension or Termination

In accordance with 43 CFR 2807.17(a), the BLM may suspend or terminate the ROW grant if the Company and/or its Construction Contractor does not comply with applicable laws and regulations or any terms, conditions, or stipulations of the grant. Prior to suspension or termination, the Company will be notified in writing and allowed a reasonable opportunity to correct any non-compliance pursuant to 43 CFR 2807.18(a), and, if applicable, provided a hearing pursuant to 43 CFR 2807.18(b).

4.2 Variance Procedures (Unforeseen Circumstances)

It is understood by the BLM and the Company that unforeseen circumstances will occur during construction. The need for realignments to the proposed route, access roads, and/or work areas not within the permitted Project ROW grant and SUA, if applicable, and not analyzed in the EIS may arise. In addition, the need to make changes to construction procedures, schedule, and/or approved mitigation measures and other specific stipulations and methods may be required. Under these or similar circumstances, a variance will need to be filed and approved by the BLM to stay in compliance.

Where the Project changes occur on private lands, the BLM will review all variance requests to ensure compliance with the EIS analysis, NHPA, and ESA (Table 4-1 –

Summary of Variance Procedures on Private Lands, at the end of this section). In addition, written approval of the Project change must be obtained from the affected landowner and provided to the Company, who will provide it to the CIC for inclusion in the Project record and End of Construction Project Report (see Section 8.2 – End of Construction Project Report).

Variance requests will be generated by the Construction Contractor and provided in writing to the Company, who will then review the request. The Company will evaluate the variance request and, if deemed appropriate by the Company, submit the variance request and supporting documentation to the CIC to be processed according to the process outlined herein.

The CIC is responsible for providing the variance request, supporting documentation, and an on-the-ground perspective of the requested variance to the BLM. The CIC is given authority by the BLM to approve a Level 1 variance request in the field (see Section 4.2.1 – Level 1 Variance – Variances Accomplished through Field Resolution). If a Level 1 variance request is approved in the field, follow-up documentation will be provided by the Construction Contractor to the CIC and the Company.

On a case-by-case basis, the CIC may be given authority by the BLM to approve a Level 2 variance request (Section 4.2.2 – Level 2 Variance – Variances Beyond Field Resolution, Not Requiring an Amendment to the ROW Grant). If the CIC is not granted the authority to approve a Level 2 variance, the variance request process, as shown in Figure 4-1 – Variance Request Process and described below, will be implemented.

The authority to approve or deny Level 3 variances requests (Section 4.2.3 – Level 3 Variance – Variances Requiring an Amendment to the ROW Grant) is provided solely to the appropriate BLM representative. The variance request process, as shown in Figure 4-1 and described below, will be implemented.

A variance request form will be developed by the Construction Contractor, reviewed and approved by the Company and the CIC, and then reviewed and approved by the BLM prior to the start of construction. The variance request form will describe the variance request in detail, provide justification and documentation for the variance (including maps and photos), and calculate the proposed permanent or temporary acreage affected relative to the original disturbance acreage analyzed in the EIS. It will also describe any potentially impacted resources and identify if additional resource surveys will be required. A draft variance request form is included as Attachment C-3 – Variance Request Form.

The variance request may be implemented in the field as soon as the approved variance is received by the Construction Contractor. The CIC is responsible for communicating with the Company regarding variance request status, and the Company is responsible for communicating with the Construction Contractor prior to modifications being made on the ground.

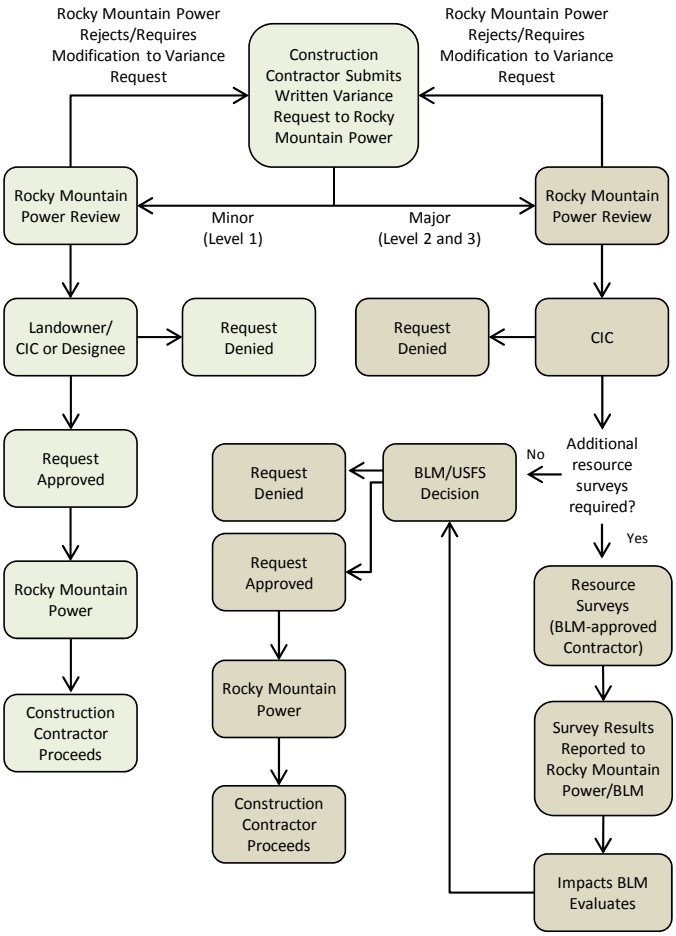

Figure 4-1. Draft Variance Request Process

Table 4-1 – Summary of Variance Procedures on Private Lands and Table 4-2 – Summary of Variance Procedures on Non-Private Lands summarize the different variance levels, potential uses, and approvals required in order to obtain Project variances.

Table 4-1. Summary of Variance Procedures on Private Lands

Variance Level	Potential Use	Approval
Level 1	Minor field adjustments	CIC
Level 2	Modify POD	CIC w/ concurrence of BLM[1]

1/ Related to compliance with NHPA and ESA and consistent with analysis in the EIS

Table 4-2. Summary of Variance Procedures on Non-Private Lands

Variance Level	Potential Use	Approval
Level 1	Minor field adjustments	CIC
Level 2	Modify POD	CIC w/ concurrence of BLM
Level 3	Amend ROW grant	BLM

4.2.1 Level 1 Variance – Variances Accomplished through Field Resolution

A Level 1 variance is a minor field adjustment within the approved BLM ROW grant. A level 1 variance must meet the following criteria:

- The area of activity or change lies within the approved ROW area, including temporary use areas.
- The area of activity or change was previously identified and analyzed in the EIS.
- The area of activity or change does not result in an increase in disturbed area relative to the EIS.
- The variance request creates equal to or less impact on resource values than the original location and activity.

A Level 1 variance request will be initiated by the Construction Contractor and submitted to the Company for review, in the form of a variance request form. The variance request form will include all attached supporting documentation. Upon the Company's review and approval, the Company's Environmental Manager will submit the variance request package to the CIC for their review.

4.2.1.1 Level 1 Variance Approval or Denial

A CIC can approve or deny Level 1 variance requests in the field. In some cases, the CIC may consult with the BLM. Level 1 variance requests may be approved if the results of implementing the changes are not significant and will occur within the granted ROW. A Level 1 variance request can be implemented in the field as soon as it is approved and signed by the CIC. In some cases, a verbal approval can be given, and followed up with a written, signed variance document. The CIC will document the approved variance in their daily reports.

If a Level 1 variance is denied, the CIC will inform the Company's Project Manager within 24 hours. The Company's Project Manager may choose to resubmit the request as a Level 2 variance, or to discontinue pursuit of the request.

4.2.1.2 Level 1 Variance Distribution

The CIC will send the approved Level 1 variance request to the Company and the Construction Contractor. The CIC will generate a report at the end of each week identifying all Level 1 variance requests approved during the previous week.

4.2.2 Level 2 Variance – Variances Beyond Field Resolution, Not Requiring an Amendment to the ROW Grant

Level 2 variances pertain to requests that exceed the field decision authority of the CIC. Level 2 variances require approval by the BLM and may require BLM resource staff review or field examinations. On a case-by-case basis, the CIC may be given authority by the BLM to approve a Level 2 variance request.

Level 2 variance requests generally involve Project changes that would affect an area outside of the approved work area, but within the area previously surveyed for resources and/or analyzed within the EIS. Such variance requests typically require review of supplemental documents, correspondence, and records to be provided with the request.

Level 2 variance requests may also be submitted for minor changes that would extend beyond the previously surveyed work area and corridor for sensitive resources. In these situations, additional surveys would be required. Documentation of the surveys and other applicable correspondence would need to be submitted with the variance request. If sensitive biological resources are encountered during the additional surveys, documentation of consultation with applicable agencies must be provided with the variance request. All BLM-approved stipulations, and if applicable, the Terms and Conditions of the U.S. Fish and Wildlife Service's Biological Opinion, must be adhered to for the variance to be approved.

A Level 2 variance request will be initiated by the Construction Contractor and submitted to the Company for review. The variance request form will include all attached supporting documentation. After the Company's review and approval, the Company's Environmental Manager will submit the variance request package to the CIC for review. Following review, the CIC will submit the request form and attachments to the BLM.

4.2.2.1 Exceptions

Requests for an exception from a seasonal restriction or no surface occupancy (NSO) area will be submitted as a Level 2 variance request to the appropriate land management agency. The Construction Contractor will follow the limited operating periods enforced by the BLM and described in Appendix H – Plant and Wildlife Conservation Measures unless an exception is granted.

Exception requests on BLM-managed lands will proceed as follows. The BLM, the CIC, or a contractor approved by the Company and approved by the BLM will conduct the appropriate surveys and coordinate with any other agencies as necessary. A variance request with the survey results incorporated will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction activity, to ensure that conditions during construction are consistent with those evaluated.

The authorized officer, or designated representative, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. Factors considered in granting the exception include animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the proposed action.

A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly construction mobilization. The CIC will conduct any required site visit and report status to BLM for consideration of the decision to accept or deny the request. Attachment H-2 – Seasonal and Spatial Restrictions, of Appendix H lists land management plan seasonal stipulations that are applicable to the extent such species are present.

4.2.2.2 Level 2 Variance Approval or Denial

The BLM, after consulting with BLM resource staff as necessary, will provide the Company, through the CIC, written approval or denial of the variance request.

The BLM may request additional information, or a modification of the variance request, before the variance request can be approved. If a Level 2 variance request is denied, the BLM will provide the Company a written denial, including a justification.

The BLM will make a good faith effort to act on Level 2 variance requests within 5 business days from receipt of a complete variance request.

The Company or Construction Contractor may choose to re-submit a denied variance request as a Level 3 variance request.

4.2.2.3 Level 2 Variance Distribution

The CIC will send the approved Level 2 variance request to the Company and the Construction Contractor. The CIC will generate a report at the end of each week identifying all Level 2 variance requests approved during the previous week.

4.2.3 Level 3 Variance – Variances Requiring an Amendment to the ROW Grant

The BLM will assist the CIC and the Company in determining whether a significant proposed change, typically a change outside of the approved BLM ROW grant, will necessitate submittal of a ROW grant amendment, or whether the change can be handled with a Level 2 variance request.

Any proposed construction modification the BLM and CIC have determined to involve substantial deviations from the ROW grant will require a grant amendment in

accordance with 43 CFR 2807.20. A change requiring an amendment to the ROW grant requires completion of an application on a Standard Form (SF) 299 and a decision by the BLM Authorized Officer. The Company will prepare the SF-299 with supporting documentation including, but not limited to, a POD and map of the variance area (1:24,000 scale), and will provide to the appropriate BLM office. The BLM will process the amendment application pursuant to 43 CFR 2800. The BLM may request additional information, or a modification, before the amendment can be approved.

The ROW grant amendment will be reviewed by BLM staff, who may consult with other federal, state, and local agencies, as needed. The ROW grant amendment approval or denial will come directly from the BLM. Approval of the ROW grant amendment also could require issuance of a Notice to Proceed (NTP) allowing the implementation of the ROW grant amendment.

5.0 COMMUNICATIONS

Communication between all parties will be critical to maintain environmental compliance throughout the Project. Communication will help maintain a consistent understanding of the Project's environmental requirements throughout construction. As specified in Appendix L – Framework Traffic and Transportation Management Plan of the POD, the Construction Contractor, the CIC, and all Environmental Monitors will maintain a communications network that consists of one or both of the following devices: two-way radios or cellular phones. This will allow for real-time coordination between all parties, which will facilitate resolution of any questions and/or monitoring requirements prior to construction activities. Oral communication will not substitute for written approvals.

5.1 Primary Inter-Party Communication Channels

The primary inter-party communication channels are identified in Figure 3-1 – ECMP Organization Chart. The ECMP Organization Chart is not intended to limit communication on the Project, but demonstrate the primary channels of routine communication between parties for compliance-related issues.

5.2 Daily Communications

The Construction Contractor will conduct daily morning meetings to review the location and extent of each day's construction activities. Discussion should highlight safety and environmental issues, including a summary of activities that require monitoring by Environmental Inspectors and coordination with the CIC. Evidence of proper approvals must be furnished for any activities scheduled to occur outside designated areas. Attendees should include the CIC; the Construction Contractor's LEI or Environmental Inspectors, Superintendent(s), and Foreman(s); and the Company's Construction Inspector.

6.0 TRAINING

6.1 Preconstruction

All personnel, regardless of affiliation, will receive environmental training prior to accessing the Project ROW. Training will emphasize compliance with all environmental

laws and regulations, including all Project-specific permitting documents. Roles and responsibilities of all pertinent parties, flagging methodology, specific landowner issues, biological and cultural resources, and disturbance limits will be some of the major topics covered in the training. The environmental training will be developed by the Construction Contractor and reviewed and approved by the Company and the CIC/BLM.

The Construction Contractor will maintain a master list of all Project personnel who have completed the training and provide it as part of weekly reporting to the Company or CIC. Hard hat stickers demonstrating attendance of the training will be issued to attendees.

6.2 During Construction

All contractor personnel who arrive after construction has begun will attend environmental training.

Remedial training will be given to individuals and crews who are involved in non-compliant activities. These trainings will focus on the requirements pertaining to the non-compliance as well as measures to follow to prevent further non-compliance situations. These may be performed in the field or in a more formal setting to be determined by the Construction Contractor and CIC.

Training for visitors will be held as the need arises.

7.0 REPORTING AND DOCUMENTATION

There will be multiple forms and reports completed on a regular basis during the course of construction. The reports and forms will include:

- **Daily Inspection Reports.** Environmental Inspectors and CIC Monitors will fill out daily reports to record site visits (Attachment C-1). The reports will document construction activities observed with respect to environmental compliance. The daily reports will also include a section to address problem areas and non-compliance issues, in which photo documentation will be required. A separate resolved non-compliance report may be required if the non-compliance is not resolved on the same day (Attachment C-2).

  Environmental Inspector reports will be submitted to the Company and the CIC and will be available to the BLM on request. CIC Monitor reports will be submitted to the BLM.
- **Weekly Reports.** The Construction Contractor will produce a weekly report documenting the week's activities and compliance issues to be submitted to the Company and the CIC. The CIC will submit a weekly compliance report to the BLM and the Company to be delivered to secure but mutually exclusive websites.
- **Variance Request Forms.** Variance requests will be produced by the Construction Contractor, reviewed by the Company, and submitted to the CIC for review before submittal to BLM for approval (Attachment C-3). The Construction Contractor will track, distribute, and archive all approved and denied variances. Section 4.2 – Variance Procedures (Unforeseen Circumstances) provides more detailed information.

- **Weekly Training Log.** The Construction Contractor will maintain a master list of all Project personnel who have completed the training and provide it as part of weekly reporting to the Company or CIC.

Forms and reports should be submitted with appropriate supporting documentation, as necessary.

8.0 PROJECT CLOSEOUT

8.1 Reclamation and Post Construction

On notification of completion of work by the Company and the Construction Contractor, the CIC will coordinate with the BLM and appropriate resource staff to conduct final on-the-ground inspections. Inspections will take place within 30 days to assure work was completed in accordance with the ROW grant and the ROW reclamation activities as described in the Final Reclamation Plan. The CIC will be retained until reclamation and initial re-vegetation efforts are complete.

After construction reclamation activities are complete, the BLM will meet with the CIC to determine if there is any further work required. If no further work is required, the post-construction reclamation monitoring period will begin, as described in the Final Reclamation Plan. The Company will retain the third-party CIC for post-construction reclamation monitoring activities described in Final Reclamation Plan.

8.2 End of Construction Project Report

Within 60 days of construction completion, the CIC will submit an End of Construction Project Report (electronically in Portable Document Format (PDF) on two CDs; as well as two hardcopies for each BLM Field Office) to document all environmental occurrences during the construction of the Project. The End of Construction Project Report will include the amount of actual temporary and permanent acreage disturbed compared with the original temporary and permanent disturbance acreage analyzed in the EIS and found in the POD. The End of Construction Project Report will also include electronic and hardcopy compilation of all daily compliance reports (including digital pictures), variance requests, temporary suspensions, and WSOs (including documentation of resolution).

The Construction Contractor will coordinate with the CIC to provide all applicable documentation for inclusion in the End of Construction Project Report. Completeness of the End of Construction Project Report will be verified by the CIC.

8.3 Construction Closeout Meeting

As required by the BLM, the CIC will coordinate a construction closeout meeting with the BLM, the Company, Construction Contractor, and any other pertinent parties to document all agency requirements have been met, determine areas of improvement, and ensure all issues have been satisfactorily resolved.

ATTACHMENT C-1
DAILY INSPECTION REPORT FORM

Gateway West – Segment D

DRAFT Daily Inspection Form

(Note: All fields shaded in yellow are to be completed as applicable.)

Employee No.:		**Daily Report Sequence Number:**		**Daily Inspection Report Number:**	

Name:		**Site or :**	**Sta. Begin:**		
Date:			**Sta. End:**		
Spread or Substation:	**Time:**		**Crew:**		**Photo Documentation**
Tract:			**Foreman:**		**Date:**
Activity Observed:					**Time Stamp:**

Site Conditions		
Weather Conditions (Clear, Cloudy, Partly Cloudy):		
Precipitation (None, Light Rain, Rain, Heavy Rain, Snow):		
Wind (None, Light Breeze, Windy, Heavy Wind):		
Temperature:		**°F**
ROW Conditions (Frozen, Dry, Wet, Saturated):		

Specification Source							
FEIS	☐	ROD	☐	SPCC	☐	Noxious Weed Plan	☐
POD	☐	ROW Grant	☐	Seeding	☐	Land Owner Agreement	☐
SWPPP	☐	Unexpected Discoveries Plan	☐			Other	
Drawing	☐	Drawing Number(s)					

Inspection Due Diligence Checklist	**Check Box**		**Compliance Level**	
Stormwater Pollution Prevention Plan Followed Measurable Rainfall in Area Noxious Weed Plan Followed ROW Boundaries Clearly Marked Restricted Areas Being Properly Handled Refueling/Storage Done Properly Flagging and Signage Properly Placed Erosion/Sediment controls Installed/Maintained Land Owner Conditions Implemented Workspace Clean and Debris Picked Up			Acceptable Problem Area Non-Compliance Serious Violation	
		Major Topic:		
		Sub-Topic:		
		Requirement:		

Comments

Corrective Problem Area/Non-compliance/Serious Violation

Follow-up NC/PA Information

Time/Date Contractor Environmental Inspector Contacted		**Timeline**	☐ 24 hours	☐ 48 hours	☐ 72 hours
			Yes	**No**	
Due Date for Acceptable Resolution:		**Follow Up Required:**			
Inspector Affirmation:		By checking this box, I affirm that the above observations are correct to the best of my knowledge.			

ATTACHMENT C-2
NON-COMPLIANCE REPORT FORM

Gateway West – Segment D

DRAFT Non-compliance Report			
Inspector:		**Date:**	

Description of Location:					
Legal Description:	**Township:**		**Range:**		**Section:**
Map Sheet Number:		**Nearest Tower Number:**			

Description of Non-compliance:	
Person and Company:	
Responsible for the non-compliance:	
Resolution: (Continue on reverse if necessary)	

Photographs: ☐ No ☐ Yes

Did the non-compliance result in surface disturbance? (if yes, map location and extent of disturbance and photograph)	☐ Yes	☐ No
Description of Disturbance and Assessment of Impact:		

Was a protected plant taken or affected?	☐ Yes	☐ No
Was a cultural or paleontological resource affected? (if yes, contact BLM and Rocky Mountain Power immediately)	☐ Yes	☐ No

Sketch surface disturbance and measurements:

CIC Signature:	

ATTACHMENT C-3
VARIANCE REQUEST FORM

Gateway West – Segment D

DRAFT Variance Request Form

(Note: All fields shaded in yellow are to be completed as applicable.)

Variance Request No.:

		Date Submitted to RMP:	
		Date RMP Submitted to BLM:	
		Date BLM Approves or Denies:	
Requested by:		BLM Approval Reference No.:	
Request prepared by:		**Variance Type:**	
Spread or Substation:		**Variance Sequence Number:**	

Location (Use either Station or Milepost)

Location on Site:			
Map Number:		**Tract No.:**	
Landowner:		**Other Agency**	
Current Land Use/Vegetative Cover:			

Nearby Features (Waterbody, T&E Habitat, Wetland, Noxious Weed Area, Residence [distance], Cultural Resource Site [distance], etc.):

☐ Noxious Weed Area	☐ Residence (distance)	**In or within 100 feet of a wetland:**	☐ Yes ☐ No
☐ T/E Species Habitat	☐ Cultural Resource Site (distance)	**In or within 100 feet of a waterbody:**	☐ Yes ☐ No
☐ Raptor Nest	☐ Water Well	**Wetland or Waterbody ID:**	
☐ Other (Specify):			

Net acreage affected:		

To be Completed by the LEI or CIC

Variance Level: ☐ Level 1 ☐ Level 2 ☐ Level 3

Variance From: ☐ Permit ☐ POD ☐ ROW Grant ☐ FEIS ☐ Specification ☐ Drawing ☐ Mitigation Measure ☐ Landowner ☐ Other Describe:

Detailed Description of Variance: Attachments? ☐ Yes ☐ No Photographs? ☐ Yes ☐ No

List Attachments:

Variance Justification:

For RMP Variance Management Use Only

Additional Surveys Required		**Surveyed Corridor Description**	**Additional Surveys Completed**
Cultural Survey	☐ Yes ☐ No		☐ Yes ☐ No
T&E Survey	☐ Yes ☐ No		☐ Yes ☐ No

Proof of Previous Biological and Cultural Survey Clearance

Sign-off (as appropriate)	**Name (Print)**	**Approval Signature**	**Conditions (See Attached)**
RMP Environmental Manager			☐ Yes ☐ No
Lead Environmental Inspector			☐ Yes ☐ No
Land Agent			☐ Yes ☐ No
Contractor Environmental Coordinator			☐ Yes ☐ No

For BLM Compliance Monitor and Compliance Manager Use Only					☐ Yes ☐ No
Variance Approved:		Variance Denied:		Beyond Authority:	
Signature::					
Date:					
Stipulations:					

Variance Conditions					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					
Name:		Title:		Organization:	
Conditions:					

VARIANCE REPORT FORM DEFINITIONS

CODE	TYPE
AR	Request new access road
CM	Request new or different construction
MM	Request new or different mitigation method
PM	Request permit modification
RA	Request new realignment of centerline
RR	Request re-route (outside cleared footprint)
WS	Request additional temporary workspace
CY	Request additional contractor yard
BLM	BLM EIS requirement
AG	Agency request

APPENDIX D
FRAMEWORK RECLAMATION PLAN

Appendix D

Framework Reclamation Plan

Gateway West Transmission Line Project

Prepared by:

PacifiCorp
1407 W. North Temple
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and

Idaho Power Company
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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations and modification of three other substations beginning at the Windstar Substation and ending at the Populus Substation at Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Reclamation Plan (Plan) was prepared for Segment D because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This Plan describes the framework approach to ensure reclamation measures are carried out in accordance with federal, state, and local regulations. This Plan has been developed based on the principles and procedures established by public land agencies with jurisdictional control over the Project. Reclamation, revegetation, and monitoring on private lands will be implemented as for similar federal lands unless the affected landowner requests differently in writing to the Companies.

1.1 Purpose

The purpose of this Plan is to provide a framework for reclamation treatments to be applied to Project-related disturbance, prevent unnecessary degradation of the environment during construction, operation, and maintenance, and reclaim temporary use areas and disturbed areas such that these areas are compatible with the surrounding environment, to the greatest extent practicable. This Plan will describe and recommend construction and reclamation treatment actions that will meet the goals and objectives for land health standards under the applicable authorities, described below in Section 2.0 – Regulatory Requirements and Authorities, and to provide requirements for implementing and monitoring reclamation.

Important actions in mitigating the effects associated with the Project include (1) minimizing to the greatest degree practicable; the effects associated with right-of-way (ROW) preparation and the construction of facilities and (2) immediately stabilizing disturbed areas to facilitate eventual native plant revegetation for the purpose of maintaining a safe and stable landscape that meets the desired outcomes of land management plans. The procedures outlined in this Plan will assist in:

- Restoring plant communities and associated wildlife habitat and range to near preconstruction conditions;
- Preventing substantial increases in noxious weeds in the Project area;
- Minimizing Project-related soil erosion; and
- Reducing visual impacts on sensitive areas caused by construction activities.

1.2 Responsible Parties

The Companies will have the overall responsibility of ensuring implementation and monitoring of reclamation efforts for the Project. The Compliance Inspection Contractor (CIC) will be responsible for overseeing reclamation-related actions.

The Construction Contractor will be responsible for development of the Final Reclamation Plan, subject to the approval of the BLM and USFS. The Construction Contractor may retain the services of a subcontractor, also subject to the approval of the BLM and USFS, who specializes in reclamation to implement reclamation-related activities prior to, during, and following construction. This Plan will provide the Construction Contractor and/or their reclamation subcontractor the baseline and framework for developing a Final Reclamation Plan that addresses site-specific conditions for reclamation areas identified based on the final design layout of the Project.

The Construction Contractor will be responsible for field-verifying vegetation alliances within the proposed disturbance area, identifying and mapping reclamation treatment and control monitoring sites, collecting preconstruction qualitative and quantitative data at monitoring sites, and coordinating specific seed mixes to be used during reclamation based on the field-verified vegetation alliance and preconstruction data with the land management agency or landowner. The field-verified vegetation alliance, landowner, and approved seed mix shall be identified for each reclamation site in the Final Reclamation Plan.

Once post-construction reclamation procedures are complete, the Construction Contractor will be responsible for reclamation monitoring, reporting, and installing signage at each reclamation area to indicate that reclamation is in process. Sign locations will be provided by the Construction Contractor to the BLM or USFS following completion of post-construction reclamation procedures and prior to the initiation of reclamation monitoring.

1.3 Contents

To facilitate review and understanding of this Plan, contents have been organized into the following eight major sections:

Section 1.0 Introduction – Section 1.0 introduces the Plan and provides a general overview of the organization and its contents.

Section 2.0 Regulatory Requirements and Authorities – Section 2.0 presents applicable regulatory requirements and agencies having authority with regard to the Plan.

Section 3.0 Overview of Existing Environments – Section 3.0 presents a brief description of the vegetation types that will be affected during construction and post-construction activities.

Section 4.0 Reclamation Plan Methodology – Section 4.0 presents the process used to develop the levels of reclamation associated with the Plan.

Section 5.0 Reclamation Plan – Section 5.0 outlines preconstruction, ROW preparation, and post-construction reclamation-related actions that will be implemented by the Companies and/or Construction Contractor. These actions include several Environmental Protection Measures (EPMs) that are set forth in Appendix Z of the Plan of Development (POD) that apply specifically to reclamation.

Section 6.0 Reclamation Success Standards, Monitoring, and Maintenance – Section 6.0 describes the monitoring procedures that will be implemented for the Project.

Section 7.0 Literature Cited – Section 8.0 lists the specific information that has been used in the development of the Plan.

Attachment D-1 – Attachment D-1 includes agency-approved seed mixtures to be used during reclamation activities. Specific seed mixes for each reclamation site will need to be determined by the Construction Contractor in consultation with the land management agency or landowner based on site-specific characteristics.

1.4 Project Description

Appendix B of the POD provides detailed information regarding the components of the transmission system including the transmission structures, communications system, and the substations. It also provides detailed information on construction methods, construction schedule, operation and maintenance, and proposed decommissioning.

2.0 REGULATORY REQUIREMENTS AND AUTHORITIES

Authority for the reclamation practices defined in this Plan is provided under the following:

2.1 Endangered Species Act of 1973, as amended

Take of federally listed species is prohibited without specific exceptions or permits issued under Sections 7 or 10 of the Endangered Species Act (ESA). Under the ESA, the definition of "take" includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. The U.S. Fish and Wildlife Service (USFWS) has further defined harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Federal agencies must consult with the USFWS under Section 7 of the ESA on actions they authorize, fund, or carry out to insure these actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

2.2 Federal Land Policy and Management Act, Section 101(a)(8)

The Federal Land Policy and Management Act requires "public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition."

2.3 BLM Terms and Conditions of Right-of-Way Grants and Temporary Use Permits, 43 Code of Federal Regulations 2881.2

"The authorized officer shall impose stipulations which shall include, but not be limited to requirements for reclamation, revegetation, and curtailment of erosion of the surface of the land [and] requirements designed to control or prevent damage to the environment (including damage to fish and wildlife habitat)."

2.4 BLM National Sage-Grouse Habitat Conservation Strategy 2004, Section 1.4.1

BLM's goal is to "Sustain or reestablish the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of sage-grouse and other sagebrush-dependent wildlife species" (BLM 2004).

2.5 BLM and USFS, Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development "The Gold Book"

"Planning for reclamation prior to construction is critical to achieving successful reclamation in the future. The objective of reclamation in the short term is to provide site stability and basic resource productivity. To reduce areas of disturbance not needed for long-term operations, interim reclamation will be initiated. The final goal of

reclamation is to restore the character of the land and water to its pre-disturbance condition" (BLM 2007).

2.6 Wyoming BLM Reclamation Policy, Instruction Memorandum No. WY-2012-032

"A reclamation plan shall be developed for all surface disturbing activities and will become part of the proposed action in the NEPA document. The level of detail for the reclamation plan shall reflect: the complexity of the project, the environmental concerns, the reclamation potential for the site, and the re-vegetation strategy" (BLM 2012a).

2.7 BLM Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing

"The Standards for Rangeland Health, as applied in the State of Idaho, are to be used as the Bureau of Land Management's management goals for the betterment of the environment, protection of cultural resources, and sustained productivity of the range" (BLM 1997).

2.8 BLM Idaho, Pocatello Field Office Resource Management Plan

"Applicable Idaho Standards for Rangeland Health and indicators will be employed to determine the successfulness of reclamation, rehabilitation or restoration activities following major surface disturbance" (BLM 2012b).

2.9 USFS, Caribou Revised Forest Plan

"The Forest Plan establishes direction so that all future decisions in the planning area will use an interdisciplinary approach to achieve integrated consideration of physical, biological, economic and social sciences (36 CFR 219.5). It also provides direction to assure coordination of multiple-uses and the sustained-yield of products and services [16 USC 1604(e)]" (USFS 2003a).

2.10 USFS, Medicine Bow National Forest Revised Land and Resource Management Plan

The implementation of the land and resource management plan will "guide on-the-ground natural resource management to ensure sustainable ecosystems and to provide multiple benefits" (USFS 2003b).

3.0 OVERVIEW OF EXISTING ENVIRONMENTS

Reclamation actions shall be specific to the setting and vegetation types impacted by the Project. Vegetation types listed here represent Segment D only. Additional vegetation description for Segment E will be provided in the revised plan.

3.1 Description of Vegetation

The Project crosses six ecoregions (Omernik 1987). It starts in the east in the Northwestern Great Plains Ecoregion, then crosses the Southern Rockies (Laramie

Mountains) and Wyoming Basin Ecoregions. Before entering Idaho, it briefly enters the Middle Rockies Ecoregion crossing where the Salt River Range and Wyoming Range come together at Commissary Ridge and again in the Tunp Range. In Idaho, the Project enters the Wasatch and Uinta Mountains Ecoregion where it crests the Bear River Range before entering the Northern Basin and Range Ecoregion.

Vegetation has been characterized using a detailed remote sensing–based vegetation mapping study conducted specifically for this Project. In addition, information on general vegetation characteristics was obtained from BLM resource management plans (RMPs), USFS Land and Resource Management Plans (Forest Plans), other agency publications and databases, published scientific literature, and limited field surveys. The goal of the mapping effort was to identify vegetation types using a combination of geographic information system– (GIS-) assisted segmentation, aerial imagery interpretation, and limited ground surveys. Details of the vegetation/habitat mapping effort are presented in the Vegetation and Habitat Baseline Technical Report (Tetra Tech 2009). Ultimately, vegetation alliances were determined for the Project following the National Vegetation Classification System (NVCS).

The remote sensing imagery segmentation and interpretation resulted in the identification of 77 vegetation alliances, including 25 shrubland alliances, 18 forest or woodland alliances, 9 developed or disturbed alliances, 4 herbaceous or grassland alliances, 6 agricultural alliances, 5 general wetland or riparian alliances, 4 water types, and 6 other cover types (e.g., rock outcrop and scree). The vegetation alliances were aggregated into vegetation types. By combining alliances with similar dominants, 11 upland vegetation types (including disturbed shrubland and grassland types), and 1 wetland/riparian vegetation type were identified. In addition, 4 other cover types were identified: agriculture, open water, miscellaneous, and disturbed/developed.

Table 3-1 - Vegetation Types in the Project Area, below, presents the vegetation types and includes a list of the vegetation alliances that were included in each vegetation type, as well as common species found within each vegetation type. Wetlands within the Project area were delineated in the during the Environmental Impact Statement (EIS) process.

3.2 Grouping of Vegetation Types into Landscape Cover Types

The vegetation types described in Table 3-1 - Vegetation Types in the Project Area can be grouped into five general landscape cover types:

1. shrublands,
2. grasslands,
3. forest and woodland,
4. wetland and riparian, and
5. other cover types.

Grouping the vegetation types in this manner will facilitate the presentation and description of the reclamation methodology outlined in Section 4.0 – Reclamation Plan Methodology.

Table 3-1. Vegetation Types in the Project Area, Segment D

Vegetation Type	Gateway West Segment(s)	Percent of Project Area[1/]	Vegetation Alliances[2/]	Common Species[3/]
Shrublands				
Sagebrush	1W, 2, 3, 4	40.3	Big sagebrush shrubland, big sagebrush shrub herbaceous, mountain big sagebrush shrubland herbaceous, mountain big sagebrush shrubland, Wyoming big sagebrush shrubland, black sagebrush shrubland, low sagebrush shrubland, silver sagebrush shrubland herbaceous	Shrubs: Basin big sagebrush, Wyoming big sagebrush, mountain sagebrush, rubber rabbitbrush, shadscale, green rabbitbrush, antelope bitterbrush, black greasewood, fourwing saltbush Grasses: bluebunch wheatgrass, Sandberg bluegrass, needle-and-thread, Thurber's needlegrass, squirreltail, western wheatgrass, Idaho fescue, Indian ricegrass Non-native: cheatgrass
Disturbed Sagebrush	1W, 2, 3, 4	12.9	Disturbed Wyoming big sagebrush, Basin big sagebrush	Shrubs: Wyoming big sagebrush, Basin big sagebrush, rubber rabbitbrush Grasses: Sandberg bluegrass Non-native: cheatgrass, crested wheatgrass, other species present within big sagebrush and disturbed grassland types
Greasewood	1W, 2, 3, 4	2.5	Black greasewood shrubland	Shrubs: black greasewood, rubber rabbitbrush, Torrey seablite, shadscale, fourwing saltbush, Gardner saltbush, bud sagebrush Grasses: western wheatgrass, blue grama Non-native: cheatgrass, Japanese brome, sixweeks fescue, tansy mustard, Russian thistle, desert alyssum, halogeton, povertyweed
Saltbush	1W, 2, 3, 4	3.2	Fourwing saltbush shrubland, shadscale saltbush shrubland, spiny hopsage shrubland	Shrubs: fourwing saltbush, shadscale saltbush, spiny hopsage, winterfat, bud sagebrush, black greasewood, rubber rabbitbrush, winterfat, big sagebrush, black sagebrush Grasses: Indian ricegrass, bluebunch wheatgrass, needle-and-thread

Table 3-1. Vegetation Types in the Project Area, Segment D (continued)

Vegetation Type	Gateway West Segment(s)	Percent of Project Area[1/]	Vegetation Alliances[2/]	Common Species[3/]
Dwarf Shrub	1W, 2, 3, 4	2.6	Dwarf shrubland	Shrubs: little sagebrush, Gardner saltbush, winterfat Grasses: Indian ricegrass, Sandberg bluegrass, western wheatgrass
Other Shrub	1W, 4	0.3	Saskatoon serviceberry shrubland, curlleaf mountain mahogany shrubland and woodland, alder leaf mountain mahogany shrubland, yellow rabbitbrush shrubland, chokecherry shrubland, antelope bitterbrush shrubland	Shrubs: curlleaf mountain mahogany, Saskatoon serviceberry, mountain mahogany, chokecherry, yellow rabbitbrush, western snowberry Grasses: western wheatgrass, needle and thread
Grassland				
Grassland	1W, 2, 3, 4	15.9	Disturbed grassland	Native grass: western wheatgrass, needle-and-thread, purple three-awn, Sandberg bluegrass Non-native: crested wheatgrass, annual brome grasses, intermediate wheatgrass, smooth brome, cheatgrass, and others
Native Grassland	1W, 4	0.4	Streambank wheatgrass-prairie junegrass herbaceous, bluebunch wheatgrass herbaceous	Grasses and grass-like species: streambank wheatgrass, Sandberg bluegrass, bluebunch wheatgrass, needle-and-thread, prairie junegrass, red threeawn, streamside wild rye, western wheatgrass, smallwing sedge, rushes Shrubs: rubber rabbitbrush, green rabbitbrush, big sagebrush Non-native: cheatgrass, alyssum, salsify
Forest and Woodland				
Conifer Forest	1W, 4	1.3	Douglas-fir forest and woodland, subalpine fir-aspen forest, lodgepole pine forest, limber pine-aspen forest, ponderosa pine forest and woodland, ponderosa pine-aspen forest, upper treeline whitebark and limber pine	Trees: lodgepole pine, Douglas-fir, limber pine, bigtooth maple, aspen Shrubs: Saskatoon serviceberry, chokecherry, Scouler willow, Rocky Mountain juniper, creeping barberry, gooseberry/ currant
Deciduous Forest	1W, 4	1.7	Bigtooth maple montane forest, Aspen – Douglas-fir forest, aspen forest, aspen woodland,	Trees: aspen, bigtooth maple, Douglas-fir Shrubs: chokecherry, mountain snowberry, common juniper, Saskatoon serviceberry, big sagebrush, gooseberry/currant, Woods rose Grasses and grass-like species: pinegrass, elk sedge, mountain brome

Table 3-1. Vegetation Types in the Project Area, Segment D (continued)

Vegetation Type	Gateway West Segment(s)	Percent of Project Area[1/]	Vegetation Alliances[2/]	Common Species[3/]
Juniper	1W, 2, 4	1.9	Western juniper woodland, Utah juniper woodland, Rocky Mountain juniper woodland	Trees: Utah juniper, Rocky Mountain juniper, western juniper Shrubs: big sagebrush, black sagebrush, fourwing saltbush, shadscale, green rabbitbrush, ephedra, rubber rabbitbrush, broom snakeweed, serviceberry, fringed sage, prickly pear, bitterbrush snowberry Grasses and grass-like species: Indian ricegrass, squirreltail, needle and thread, western wheatgrass, bluebunch wheatgrass, galleta, Sandberg bluegrass, blue grama, junegrass, muttongrass, sedges
Wetland and Riparian				
Wetland and Riparian	1W, 2, 3, 4	1.1	Forested riparian, forested wetland, shrub riparian, shrub wetland, herbaceous wetland, mixed wetland, mixed riparian	Herbaceous emergents: common reed, cattail, bulrush, woolly sedge, Nebraska sedge, creeping spikerush, clustered field sedge, Baltic rush, saltgrass. Shrubs and trees: coyote willow, yellow willow, Woods rose, common chokecherry, black hawthorn, red-osier dogwood, water birch, narrowleaf cottonwood, black cottonwood, peachleaf willow Non-native: Russian olive
Other Cover Types				
Miscellaneous (substrate-dominated)	1W, 2, 4	0.2	Inter-Mountain Basins Cliff and Canyon, Inter-Mountain Basins Volcanic Rock and Cinder Land, Large Eroding Bluffs Sparsely Vegetated, Rock Outcrop Sparsely Vegetated, scree, badlands	Ponderosa pine, lodgepole pine, Indian ricegrass, big sagebrush, sand sagebrush, fourwing saltbush, others
Water	1W, 2, 3, 4	0.2	Lake, pond, playa, reservoir, river/stream/ canal	Aquatic plants may be present
Agriculture	1W, 4	12.7	Dryland farming, fallow/hay pasture, herbaceous pasture, irrigated farming, orchard, shrub pasture	Crops, non-native grasses and forbs, weeds, shrubs
Disturbed/ Developed (unvegetated by human disturbance)	1W, 2, 3, 4	1.8	Barren, burned, commercial, disturbed, extractive, recreation area, residential, ROW, urban	Much of this cover is unvegetated, other parts have landscaped or weedy vegetation, few native species

1/ "Percent of Project Area" is synonymous with the term "Percent of Analysis Area" as presented in Chapter 3 of the Final EIS. The percentages presented here reflect those that were analyzed in the Final EIS, and represent an approximation of the vegetation associated with Segment D of the Project.
2/ "Shrubland herbaceous" alliances are those with a moderate to dense herbaceous layer; "shrubland" alliances without this designation are typically characterized by a sparse herbaceous layer.
3/ Scientific names of plants are provided in the Vegetation and Habitat Baseline Technical Report (Tetra Tech 2009).

3.2.1 Shrublands

Shrubland is the most common landscape cover type found within the Project Area. It is the dominant type throughout the Wyoming portions of the Project and is common within Idaho. Major shrub vegetation types include sagebrush, disturbed sagebrush, saltbush, and greasewood.

The sagebrush vegetation type is the most widely distributed type of shrubland, occurring on the plains, intermountain basins, and slopes. It occurs in all segments and makes up more than 40 percent of the Project Area. This vegetation type has an overstory of sagebrush and a variable understory of grass, forb, and sub-shrub species. This vegetation type includes eight sagebrush vegetation alliances that were identified during mapping.

Disturbed sagebrush vegetation is found throughout the Project Area. It includes many of the plant associations of the Wyoming big sagebrush shrubland alliance, some of which are of poor quality due to recent disturbance.

The greasewood vegetation type is most common in Segments 2, 3, and 4 in Wyoming, but also occurs in Segment 1W. This vegetation type includes one vegetation alliance.

The saltbush vegetation type occurs along Segments 1W, 2, 3, and 4. It includes three vegetation alliances. This is the most arid vegetation type within the Project Area, occurring in areas with 8 to 10 inches of annual rainfall.

Dwarf shrub consists of arid areas dominated by dwarf shrubs less than one foot in height. Common dominants include sagebrush, Gardner saltbush, and winterfat. This vegetation type occurs on Segments 1W, 2, 3, and 4.

Other shrub communities occur in the mountainous portions of the Project Area in Segments 1W and 4, but occupy only small areas. The most common types are dominated by mountain mahogany.

3.2.2 Grasslands

Grasslands occur throughout the Project. Nearly all of the grasslands are disturbed or semi-natural plant communities dominated by non-native perennial grass species including crested wheatgrass and intermediate wheatgrass, and weeds such as cheatgrass. The crested wheatgrass and intermediate wheatgrass stands typically result from revegetation or seeding, while dominance by cheatgrass is a result of disturbance and wildfire. Some disturbed grasslands are dominated by seral native grass species such as purple threeawn and Sandberg bluegrass.

Native grassland occurs on Segments 1W and 4. Most of the native grassland is in the bluebunch wheatgrass alliance.

3.2.3 Forest and Woodland

Forests are limited in extent and primarily occur in Segments 1W and 4 where the Project crosses areas of higher elevation in the Laramie Mountains, Tunp Range, and Commissary Ridge of Wyoming and the Bear River Range and Portneuf Range in Idaho. Deciduous forests occupy less than 2 percent of the Project Area along

Segments 1W and 4. Most of the deciduous forest is dominated by aspen. Conifer forests occupy less than 2 percent of the Project Area for Segments 1W and 4 as well. They are dominated by Douglas-fir, ponderosa pine, and lodgepole pine.

Juniper woodlands occur within the Project Area in both Idaho and Wyoming. They occur in Segments 1W, 2, and 4. Most of the juniper woodlands are dominated by Utah juniper in Idaho and Rocky Mountain juniper in Wyoming.

3.2.4 Wetland and Riparian

The wetland and riparian vegetation type occupies approximately 1 percent of the Project Area. The most common vegetation alliance included in this landscape cover type is herbaceous wetland, but shrub wetlands, forested wetlands, and riparian areas are also present.

3.2.5 Other Cover Types

Several substrate-dominated natural communities are included under miscellaneous in Table 3-1, including cliffs, canyons, and volcanic rocks. Cliffs and canyons are present near Segments 1W and 4. Volcanic rock and cinder occur in Segment 4.

Other cover types include open water, disturbed/developed areas, and agricultural lands (irrigated and non-irrigated). Disturbed/developed covers less than 2 percent of the Project Area.

4.0 RECLAMATION PLAN METHODOLOGY

This section of the Plan describes the process used to identify reclamation actions that will be required within areas subject to ground disturbance as a result of Project construction, operation, and maintenance. Because the Wyoming BLM Reclamation Policy (BLM 2012a) provides reclamation guidance for projects on BLM-administered lands, this policy has served as the primary resource to identify appropriate reclamation levels (RLs) and actions for the Project. The following discussion focuses on two key components: (1) identification of Reclamation Zones, and (2) identification of RLs that have been used to designate or prescribe the required actions for each Reclamation Zone. The implementation of the reclamation actions described in Section 5.0 – Reclamation Plan varies based on these two components, as well as the landscape cover types potentially affected.

4.1 Identification of Reclamation Zones

This Plan identifies four Reclamation Zones (Z1 to Z4) based on an aggregation of the vegetation types described in Table 3-1 (landscape cover types described above in Section 3), and the applicable reclamation actions for each landscape cover type. While species composition will vary within the reclamation zone, similar vegetation types will likely be found within the designated zone that will support similar reclamation actions.

Land management agency and landowner resource concerns may include sensitive animal habitat, sensitive plant occurrences, visual resources, or other sensitive environmental areas and will be mapped as part of the POD. These resources may

require the application of approved EPMs to minimize Project-related impacts, also to be mapped as part of the POD. Approved EPMs will be applied in coordination with the appropriate land management agency and/or landowner.

The following is a description of each reclamation zone applicable to the Project.

4.1.1 Reclamation Zone 1 – Shrublands (Z1)

Reclamation Zone 1 (Z1) includes an aggregation of sagebrush, disturbed sagebrush, saltbush, and greasewood vegetation types. This zone is typically composed of a variety of low, shrubby, and woody vegetation, with a limited to moderate grass understory. This zone is found throughout the Project, from 4,700 to 8,800 feet in elevation, and receives approximately 5 to 40 inches of rainfall annually. All reclamation actions described in Section 5.0 – Reclamation Plan with the exception of selective feathering are potentially applicable to this zone, dependent on site conditions.

4.1.2 Reclamation Zone 2 – Grasslands (Z2)

Reclamation Zone 2 (Z2) includes an aggregation of native grassland and disturbed grassland vegetation types. This zone is typically composed of a variety of low, abundant grasses, both native and exotic. This zone is typically found in both valley and montane environments ranging from 4,700 to 8,800 feet in elevation and receives approximately 5 to 40 inches of rainfall annually. All reclamation actions described in Section 5.0 – Reclamation Plan with the exception of selective feathering and vertical mulch are potentially applicable to this zone, dependent on site conditions.

4.1.3 Reclamation Zone 3 – Forest and Woodland (Z3)

Reclamation Zone 3 (Z3) includes an aggregation of all forested vegetation types crossed by the Project. This zone is typically composed of coniferous and deciduous trees and woody plants, with a limited grass understory. This zone will typically range from approximately 5,000 to 8,800 feet in elevation, and receive approximately 20 to 50 inches of rainfall annually. All reclamation actions described in Section 5.0 – Reclamation Plan are potentially applicable to this zone, dependent on site conditions.

4.1.4 Reclamation Zone 4 – Wetland and Riparian (Z4)

Reclamation Zone 4 (Z4) is composed of wetland and riparian vegetation types. In wetland and riparian areas, reclamation actions associated with Zones 1 to 3 may not be applicable due to site-specific conditions requiring modification from standard actions or as a result of agency coordination. In these more sensitive areas, the appropriate land management agency (BLM, USFS or BOR) and the Construction Contractor/reclamation subcontractor must coordinate on reclamation actions to be applied and in some cases the land management agency may require additional, detailed planting plans to accommodate riparian conditions and land management agency objectives.

In all Z4 areas, construction disturbance will be limited, where possible, to prevent soil and vegetation loss. Any existing roads in this zone will be used to access construction work areas to limit new access roads and associated disturbance.

4.2 Identification of Reclamation Levels

Determination of RLs that prescribe the types of required actions were based on (1) the type(s) of construction activity, facility features, and the area of associated disturbance, (2) the duration of disturbance (temporary or permanent) associated with these features, and (3) the type of disturbance associated with each activity as described below.

4.2.1 Types of Construction Activities and Facility Features

As presented in Appendix B of the POD – Transmission Line and Substation Components, major activities associated with the construction of the Project will include, but are not limited to, the following tasks:

- Surveying the transmission centerline, other project features, and work areas;
- Upgrading or constructing temporary and permanent access roads;
- Clearing and grading activities for the ROW, tower sites, staging areas, substations, regeneration sites, and batch plants;
- Excavating foundations;
- Installing foundations;
- Assembling and erecting towers with temporary and permanent pad sites;
- Stringing conductors and ground wires;
- Installing counterpoise (tower grounds) where needed; and
- Conducting cleanup and reclamation of affected areas.

The area affected by construction, operation and maintenance of the major facility features will vary as presented in Appendix B of this POD.

4.2.2 Disturbance Duration

This Plan defines two broad types of disturbance durations, as described below.

4.2.2.1 Permanent

The use of these areas is long term and the landscape is permanently altered through vegetation removal, site leveling, modification of natural drainages, installation of fencing, and construction of facilities, towers, and other structures. Permanent disturbance is also associated with the construction of access roads required for the operation and maintenance of the Project.

4.2.2.2 Temporary

These areas are used only for the amount of time it takes to construct the Project. Examples include work areas where heavy equipment is used to move and install towers, pulling and tensioning sites, temporary overland access routes across public land, parking areas, temporary access roads, and designated staging areas for equipment and materials.

4.2.3 Disturbance Level

This Plan defines five broad disturbance levels based on activities associated with construction, operation and maintenance of Project facilities. Disturbance levels will be considered in the identification of RLs and implementation of specific reclamation practices. In general, the amount of ground disturbance increases with each disturbance level, with the exception of Disturbance Level 5 (D5), which is specific to the use of wetland matting in the Bear River Plain.

4.2.3.1 Disturbance Level 1 (D1) – No New Disturbance

These areas include existing access roads and pre-disturbed locations that do not require improvement (vegetation removal or grading) that will remain permanent (in place) after Project construction is complete.

4.2.3.2 Disturbance Level 2 (D2) – Overland Drive-and-Crush

In these areas, disturbance is caused by access to a site or construction activities within a work area that do not significantly modify the landscape. Vegetation is crushed, but not cropped. Soil is compacted, but no surface soil is removed. Examples may include tensioning and pulling areas, tower pad sites, overland access to regeneration sites, and spur roads to towers. Although vegetation may be damaged and even destroyed, the surface soil and seed bank remains in place. Some crushed vegetation may likely return after disturbance ceases.

4.2.3.3 Disturbance Level 3 (D3) – Overland Clear-and-Cut

In these areas, disturbance is caused by access to the Project site or construction activities within a work area that require the clearing of all vegetation to improve or provide suitable access for equipment and vehicles. Most woody shrub vegetation is removed, soils are compacted, but no surface soil is removed (i.e., no blading of topsoil), preserving vegetation roots wherever practical to facilitate reestablishment. Examples include temporary access roads where overland access may be used in the construction of facilities, or in some areas where roads may be improved for access (selective tree and brush clearing).

4.2.3.4 Disturbance Level 4 (D4) – Blade-and-Shape

Disturbance in these areas is caused by removing vegetation in the affected zone. The soils are compacted and the surface soil is displaced (i.e., blading of topsoil). Some examples include new access roads that require grading and filling, tower sites that require clearing and grading, and existing access roads that require improvements.

4.2.3.5 Disturbance Level 5 (D5) – Bear River Plain Matting

In these areas, disturbance is caused by the placement of matting for access to a site or to support construction activities within a work area. Disturbance due to matting does not significantly modify the landscape. Vegetation is crushed, but not cropped. Limited soil compaction occurs, but no surface soil is removed. Even though vegetation may be damaged and even destroyed, the surface soil and seed bank remains in place. Crushed vegetation is likely to return after mats are removed. Within 30 days of the completion of the construction and/or maintenance activity, the mats and geotextile will be removed allowing the vegetation to naturally re-establish. Matting will only occur in wetland areas in the Bear River Plain.

4.2.4 Reclamation Levels

Five levels of reclamation (RL1 to RL5) have been identified for the Project based on the potential disturbance level and duration of disturbance. These RLs are identified in Table 4-1 - Reclamation Levels and described in the following subsections.

For RL 2 through RL 5, pretreatment of existing noxious weed may be required before construction to prevent infestation and spread. Areas of reclamation will be identified and protected by flagging or signage as appropriate (see Appendix U of the POD – Framework Flagging, Fencing, and Signage Plan).

Table 4-1. Reclamation Levels (RLs)

Disturbance Level		Disturbance Duration	
		Permanent	**Temporary**
D1	No New Disturbance	RL 1	–
D2	Overland: Drive-and-Crush	RL 1	RL 2
D3	Overland: Clear-and-Cut	RL 4	RL 3
D4	Blade-and-Shape	RL 4	RL 5
D5	Bear River Plain Matting	–	RL 2

4.2.4.1 Reclamation Level 1 (RL1) – Minimal Level of Permanent Disturbance

Construction in these areas does not result in new disturbance, requires minimal preconstruction treatment, and will normally require no post-construction reclamation actions (outside of routine maintenance). This can include existing prior disturbance, such as an existing road.

4.2.4.2 Reclamation Level 2 (RL2) – Low Level of Temporary Disturbance

Construction and activities in these areas are temporary and will result in disturbance that is confined to overland construction and matting, including vegetation crushing requiring limited reclamation actions. This can include temporary facilities such as pulling and tensioning sites and temporary roads and the temporary portions of structure work areas and permanent access roads.

4.2.4.3 Reclamation Level 3 (RL3) – Moderate Level of Temporary Disturbance

Construction and activities in these areas will result in moderate temporary disturbance, limited to clearing and cutting of vegetation. This can include temporary facilities such as pulling and tensioning sites and temporary roads and the temporary portions of structure work areas and permanent access roads, and is distinguished from RL2 by the higher level of construction disturbance.

4.2.4.4 Reclamation Level 4 (RL4) – Moderate / High Level of Permanent Disturbance

Construction of Project facilities in these areas will result in a moderate to high level of disturbance (e.g., blading). Reclamation actions will be minimal because these areas will be permanently occupied by Project components. This applies to rebuilt existing roads, new access roads that will serve for long-term maintenance and operation of the transmission line, substations, regeneration stations, and the permanent portions of the structure pads. In these locations, seeding and alternative seeding will be applied where appropriate and replacement of soils and vertical mulch will be limited.

4.2.4.5 Reclamation Level 5 (RL5) – High Level of Temporary Disturbance

These are the construction areas that will result in a high level of disturbance due to vegetation and soil removal (e.g. blading), but are planned for reclamation actions.

Table 4-2 identifies the various RLs to be applied for each of the construction components and associated disturbance levels and durations. In general, the order of disturbance levels from least to greatest is overland drive-and-crush, overland clear-and-cut, and blade-and-shape.

Table 4-2. Construction Component – Reclamation Levels

Construction Component	Disturbance Level	Disturbance Duration		Reclamation Level
		Permanent	Temporary	
Structure work areas	D2: Overland Drive-and-Crush		●	RL2
	D3: Overland Clear-and-Cut		●	RL3
	D4: Blade-and-Shape		●	RL5
	D4: Blade-and-Shape	●		RL4
	D5: Bear River Plain Matting		●	RL2
Wire-pulling and tensioning sites, wire-splicing sites, multi-use construction yards, staging areas, helicopter refueling sites, wash stations, guard structures, and other ancillary facilities that result in temporary disturbance	D2: Overland Drive-and-Crush		●	RL2
	D3: Overland Clear-and-Cut		●	RL3
	D4: Blade-and-Shape		●	RL5
Substation and regeneration sites and other ancillary facilities that result in permanent (long-term) disturbance	D2: Overland Drive-and-Crush	●		RL4
	D3: Overland Clear-and-Cut	●		RL4
	D4: Blade-and-Shape	●		RL4
Existing paved roads, access roads (no improvement)	D1: No New Disturbance	●		RL1
Existing access road (with improvements)	D4: Blade-and-Shape	●		RL4
New access road	D2: Overland Drive-and-Crush	●		RL4
	D2: Overland Drive-and-Crush		●	RL2
	D3: Overland Clear-and-Cut	●		RL4
	D3: Overland Clear-and-Cut		●	RL3
	D4: Blade-and-Shape	●		RL4
	D4: Blade-and-Shape		●	RL5
	D5: Bear River Plain Matting		●	RL2

5.0 RECLAMATION PLAN

This section presents the reclamation actions specifically required for each level of reclamation (RL1 to RL5 as described in Section 4.2.4 – Reclamation Levels) within the reclamation zones previously discussed (Z1 to Z4 as described in Section 4.1 – Identification of Reclamation Zones).

Reclamation actions are physical treatments and activities that will occur throughout each phase of the Project and are specific to the levels of reclamation, as identified in Table 5-1 - Reclamation Action Identification Table. Table 5-1 presents pre- and post-construction reclamation actions for each reclamation zone and level. Table 4-2 - Construction Component – Reclamation Levels, which identifies the RLs for various construction components is to be used in conjunction with Table 5-1 to determine appropriate site-specific reclamation actions.

If a variance to the expected disturbance level for a particular construction component is required due to unforeseen environmental or engineering constraints, Table 4-2 - Construction Component – Reclamation Levels provides direction for determining the revised RL, which can then be used to identify the appropriate reclamation actions per Table 5-1 - Reclamation Action Identification Table.

These reclamation actions will facilitate resource protection during construction, enhance recovery for areas temporarily disturbed by Project construction, and promote the re-establishment of vegetation similar in species composition cover and diversity to preconstruction conditions in predetermined areas.

The Construction Contractor shall coordinate with agency resource specialists during the development of the Final Reclamation Plan. This coordination will include the development of site-specific reclamation treatments where disturbance occurs, determining appropriate seed mixes, and the delineation of the geographic extent in which each seed mix will be distributed within the areas disturbed by construction. The Construction Contractor and appropriate land management agency/landowner coordination shall occur during the preconstruction phase of the Project to ensure the proper amount of each seed mix can be purchased and is available when needed. The goal of identifying site-specific reclamation treatments is to be achieved through analysis of existing data and ground verifications of vegetation alliances in areas that will be subject to Project-related ground disturbance. Particularly sensitive environmental features may require additional reclamation actions to mitigate disturbance impacts associated with the Project and maximize the probability of reclamation success.

5.1 EPMs and Required Agency Directives

There are EPMs set forth in Appendix Z of this POD that apply directly to the reclamation actions described in Section 5.1 – ROW Preparation and Preconstruction Actions and Section 5.2 – Post-Construction Actions. As applicable, these EPMs are included under the appropriate action and identified by their EPM. A complete list of EPMs and their applicability by landownership is included in Appendix Z. There are

three general EPMs that apply Project-wide and are relevant to reclamation efforts. They are:

G-1 Resource Management Plan (as amended) design criteria, BMPs, and mitigation requirements will apply on BLM-managed lands.

G-2 Forest Plan Standards and Guidelines (as amended) will apply on NFS lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.

G-3 Third-party Environmental CIC Monitors approved by the Agencies will monitor construction activities. Monitoring activities will be structured in accordance with the Environmental Compliance Management Plan included as Appendix C of the POD.

In addition, on March 27, 2012, the Wyoming BLM issued Instruction Memorandum (IM) No. WY-2012-032 that describes the Wyoming BLM Reclamation Policy (BLM 2012a). The policy sets forth 10 reclamation requirements that must be addressed when developing reclamation plans for all surface-disturbing activities. The policy provides reclamation actions under each of the 10 requirements that will ensure a reclamation plan adequately addresses the requirements. All 10 of the Wyoming BLM Reclamation Policy requirements are addressed in this Plan. Reclamation actions from the policy that are included in this Plan are identified by citing their source immediately after the action.

Table 5-1. Reclamation Action Identification Table

	Reclamation Zone 1 (Shrublands)					**Reclamation Zone 2** (Grasslands)					**Reclamation Zone 3** (Forest and Woodland)					**Reclamation Zone 4** (Wetlands and Riparian)				
Reclamation Level	**RL1**	**RL2**	**RL3**	**RL4**	**RL5**	**RL1**	**RL2**	**RL3**	**RL4**	**RL5**	**RL1**	**RL2**	**RL3**	**RL4**	**RL5**	**RL1**	**RL2**	**RL3**	**RL4**	**RL5**
PRECONSTRUCTION ACTIONS																				
Weed plan implementation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Selective clearing/feathering													●	●	●			●	●	●
Topsoil segregation					●					●					●					●
Windrow vertical mulch			●	●	●								●	●	●			●	●	●
POSTCONSTRUCTION ACTIONS																				
Management of waste materials	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Subsurface integrity				●	●				●	●				●	●				●	●
Earthworks				●	●				●	●				●	●				●	●
Topsoil replacement					●					●					●					●
Seeding		●	●	●	●		●	●	●	●		●	●	●	●		●	●	●	●
Alternative seeding		●	●	●	●		●	●	●	●		●	●	●	●		●	●	●	
Vertical mulch replacement			●		●								●		●			●		●
Visual Composition		●	●		●		●	●		●		●	●		●		●	●		●
Signage		●	●		●		●	●		●		●	●		●			●		●
Monitoring		●	●	●	●		●	●	●	●		●	●	●	●		●	●	●	●

Notes:
RL – Reclamation level

5.2 ROW Preparation and Preconstruction Actions

Preconstruction actions are those that occur before construction of the Project is initiated, and includes activities associated with ROW preparation. ROW preparation includes general site preparation involving flagging of the ROW boundaries and construction areas. It also includes identification of weed infested areas, and storage areas for windrowed plant and soil materials. Monitoring sites will be established, as described in Section 6.2.2 – Site-Specific Reclamation Monitoring, and vegetation alliances will be field verified.

Preconstruction actions will focus on protection of environmentally sensitive areas and resources identified for preservation, field verification of vegetation alliances within areas that will be subject to disturbance, monitoring site selection and preconstruction data collection, and identification and pre-treatment of noxious weed infestations located within proposed Project disturbance. Preconstruction actions and ROW preparation are the responsibility of the Construction Contractor.

Disturbance related to Project construction may begin only after all ROW preparation and preconstruction actions have been completed for that segment.

5.2.1 Weed Plan Implementation

Noxious weeds and invasive plant species will be managed in conformance with the Framework Noxious Weed Plan (Appendix E of the POD). The following EPMs or required agency directives will be applied, as necessary, to this reclamation action and before any ground-disturbing activities occur. Measures that follow will be implemented where ground may be disturbed during construction:

- Perform an inventory of noxious weed and invasive species (IM WY-2012-032).
- Develop an approved noxious weed and invasive plant management plan (IM WY-2012-032).
- Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures will follow the principle of integrated weed management (EPM WEED-2).
- Develop an approved plan to monitor the success of treatments (see Section 6.0 of this Plan) (IM WY-2012-032).
- The Companies' personnel and their contractor will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations (EPM REC-1).
- Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species (EPM REC-2).
- Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a

schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly (EPM REC-3).

- Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable (EPM REC-4).
- All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (BLM 2007; http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and National Forest System (NFS) lands (EPM REC-5).
- Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved (EPM REC-6).
- All areas treated will be documented using global positioning system (GPS) technologies and included in the annual report (EPM REC-7).
- Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread (EPM REC-8).
- Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance (EPM REC-9).
- Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts,

underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative (EPM WEED-7).

- When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations (EPM WEED-8).
- Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment (EPM WEED-9).
- Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D – Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds (EPM WEED-10).
- When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the Final Reclamation Plan (EPM REC-10).
- Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagules. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations will not become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans (EPM VEG-4).
- Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the Stormwater Pollution Prevention Plans (SWPPPs) will also assist in preventing the establishment of weeds on exposed soils (EPM REC-12).

- Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner (EPM REC-13).
- Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Pesticides or other chemical control will be selected from the BLM and USFS's list of previously approved pesticides and in accordance with any pesticide plans. If the federal land managing agency determines that a previously approved pesticide and/or plan is unacceptable, they shall notify the Companies (EPM OM-13).
- To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified "noxious weed-free" and seed mix will be agreed to in advance by the landowner or land managing agency (EPM OM-15).
- Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential (EPM OM-20).

The Framework Noxious Weed Plan (Appendix E of the POD) contains specific information regarding noxious weed control measures and monitoring requirements. Appropriate site-specific control measures will be determined once preconstruction noxious weed surveys have been completed. Subsequent actions for ROW preparation may proceed for a given segment only after preconstruction weed treatment has been completed for that segment.

5.2.2 Monitoring Site Selection

As discussed below in Section 6.2.2 – Site-Specific Reclamation Monitoring, preliminary monitoring site locations will be established along the ROW during preconstruction surveys. A single monitoring site includes both a treatment site and a control site. The treatment site is an area expected to be disturbed during construction and that will be revegetated. The control site will be paired with the treatment site; meaning the control site will be in the vicinity of the treatment site and will have the same slope, aspect, and vegetation characteristics as the treatment site (prior to disturbance).

Monitoring sites will be selected for each of the vegetation types expected to be subject to Project-related surface disturbance.

5.2.3 Selective Clearing/Feathering (Wire Zone-Border Zone Technique)

Selective clearing and feathering is the normal practice for mitigating impacts in areas where trees or brush of high densities have been cleared due to Project activities. Additionally, selective clearing and feathering can be implemented to meet safety standards for conductor clearance for the Project. Selective clearing and feathering is

to be specifically considered in the forest and woodland reclamation zone (Z3) of the Project.

The following EPMs or required agency directives will be applied, as necessary, to this reclamation action:

- To reduce visual contrast in areas where overstory vegetation is removed for access, tower pads, or conductor clearance, specific sections of the ROW on federal land will have uneven edges (trees will be removed from the edge of the ROW out or away from the ROW boundary) to give a natural appearance, where not in conflict with regulatory requirements (e.g., North American Electric Reliability Corporation, Western Electricity Coordinating Council, and Occupational Safety and Health Administration requirements). This will be a one-time application (not applicable to operations and maintenance) and conducted with agency approval (EPM VIS-13).

5.2.4 Topsoil Segregation

Topsoil segregation includes the separation of topsoil from subsoil. Topsoil contains organic material, including the seeds of plants growing on the site. Topsoil segregation will be performed where earthworks cause disturbance to vegetation and soil. The Construction Contractor(s) will conduct topsoil segregation and include all rocks and vegetation as vertical mulch. Topsoil will be set aside for post-construction replacement. The goal of this activity is to maintain the biological, chemical, and physical integrity of the topsoil and subsoil (where appropriate).

The following EPMs or required agency directives will be applied, as necessary, to this reclamation action:

- The Wyoming BLM State Reclamation Policy (BLM 2012a) and applicable Agency management plan requirements for soil management will be followed on federal lands in the state of Wyoming (EPM SOIL-1).
- In order to meet Forest Plan Soil Standards on NFS lands, the Reclamation Plan (approved by the USFS) will describe on-site restoration using topsoil salvaging (EPM SOIL-7).
- In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction (EPM VEG-3).
- The Construction Contractor will identify, delineate, and segregate all topsoil salvaged based on a site-specific soil evaluation. The evaluation shall consider depth, chemical, and physical characteristics (IM WY-2012-032).
- The Companies will notify the USFS when topsoil salvage operations are scheduled and seek assistance with field identification of topsoil material (EPM VEG-7).
- Topsoil will be labeled properly and protected from erosion, degradation, contamination, and inadvertent use as fill (IM WY-2012-032).

- Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable (EPM REC-11).
- Certified weed-free straw, mulch, gravel, and other best management practices (BMPs), as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils (EPM REC-17).
- Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil will be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds (EPM REC-14).
- Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land management agency, soil stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the USFS or per private landowner request, stockpiles will not be covered with plastic (EPM WEED-3).
- The topsoil layer will be removed, taking care not to mix it with the underlying subsoil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile (EPM REC-16).
- In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process (EPM OM-25).

5.3 Post-Construction Actions

Post-construction actions occur after Project construction has terminated, and primarily focus on stabilizing permanent use areas and restoring temporary areas to allow reoccupation of vegetation. Construction reclamation actions that may be used are defined below and are organized by their sequence of implementation. The Construction Contractor shall incorporate the reclamation actions identified below in the Final Reclamation Plan that will be reviewed and approved by the BLM or USFS before post-construction actions commence.

If reclamation actions identified below cannot be implemented following construction, appropriate interim erosion control measures as proposed by the Construction Contractor and approved by the appropriate land management agency, landowner, and/or discussed in Appendix F – Framework SWPPP (and to be incorporated into the Construction Contractor SWPPPs) will be installed until revegetation can occur.

5.3.1 Management of Waste Materials

These activities will be performed in conformance with the Framework Hazardous Material Management Plan (Appendix P) and the Framework Spill Prevention, Containment, and Countermeasures Plan (Appendix G).

- Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including but not limited to: assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices will be left in place (EPM REC-22).

5.3.2 Earthworks

Earthwork activities will include the re-establishment of slope stability, surface stability, desired topographic diversity, and drainage features. Earthwork activities will include the recontouring, to the extent feasible, of areas that are not needed for operation and maintenance of the Project. Earthwork activities will also include application of appropriate hydrologic stabilization methods and soil erosion measures in conformance with the SWPPPs. Structure pads and permanent access roads will be reseeded, but will not be re-contoured.

The following EPMs or required agency directives will be applied, as necessary, to this reclamation action:

- Where it is necessary to spread soils (subsurface soils or waste rock resulting from excavations or foundation drilling), it will be done where practicable and in close proximity to where the disturbance occurred (within the ROW). Material will be spread uniformly to match existing contours, covered with topsoil when available, and reseeded (EPM REC-19).
- Temporarily disturbed lands within the ROW will be recontoured to blend with the surrounding landscape. Recontouring will emphasize restoration of the existing drainage patterns and landform to preconstruction conditions, to the extent practicable (tower pads will not be recontoured) (EPM REC-20).

5.3.3 Topsoil Replacement

The following EPMs or required agency directives will be applied, as necessary, to this reclamation action:

- Topsoil and subsurface soils will be replaced in the proper order during reclamation (EPM REC-18).
- In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs (EPM WQA-12).

- Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed-free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction stormwater inspector (EPM REC-15).
- The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application (EPM VEG-5).
- Decompaction: Areas within the ROW, laydown or multi-purpose areas, and other areas of extensive vehicle travel will typically contain compacted soils. These soils will be decompacted on a case-by-case basis through negotiation with the landowner or land management agency (EPM REC-21).
- Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent water bars, cross-ditching (e.g., rolling dips), or other methods to reduce compaction while preventing gully formation. Ripping pattern shall be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies (EPM SOIL-4).
- Reclamation of all temporary disturbances on NFS lands (such as road cuts) shall include replacement of material to original contours and re-compaction to pre-disturbance compaction percentage (as identified during reclamation at adjacent locations to the disturbance). Guidelines for streambank recompaction to maximize vegetative regrowth and mechanical stability are covered in U.S. Army Corps of Engineers publication ERDC TN-EMRRP-SR-26 (Goldsmith et al. 2001) (EPM SOIL-6).
- The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the Final Reclamation Plan and be consistent with the SWPPPs (EPM REC-23).

5.3.4 Seeding

Seeding involves planting new seed of indigenous native species to establish desired self-perpetuating native plant communities within Project-affected areas. It is important to establish a species composition, diversity, structure, and total ground cover appropriate for the desired vegetation community.

Seed mixes will be determined by soil type and vegetation alliance and provided to the Construction Contractor by a BLM or USFS specialist (e.g., botanist, range management specialist, or soil scientist designated by the BLM or USFS Authorized Officer or his/her designated representative). The BLM or USFS seed mix will be applied Project-wide to the appropriate vegetation alliance, unless directed otherwise by the land management agency and/or landowner.

However, in some cases, as determined by the land management agency and/or landowner, non-native species may be recommended in seeding mixes as a treatment

to improve chances of reclamation success when ecological site(s) have large quantities of invasive species, such as cheatgrass or red brome or other limiting factors such as precipitation variability and ecological site potential. Non-native plants shall be selected only as an approved short-term or non-persistent (sterile) alternative to native plant materials. Non-natives shall not be able to hybridize, displace, or offer long-term competition to endemic plants, and shall aid in the re-establishment of native vegetation communities. This treatment is identified as alternative seeding in this Plan and is discussed in Section 5.2.6 – Alternative Seeding.

Attachment D-1 – Agency Approved Seed Mixes includes a list of approved seed mixes provided by the BLM and USFS field offices crossed by the Project. The Construction Contractor will produce the Final Reclamation Plan in coordination with the land management agency or landowner. The Final Reclamation Plan will specifically correlate agency-approved seed mixes to the Project-identified reclamation zones and vegetation alliances.

The following EPMs or required agency directives will be applied, as necessary, to this reclamation action:

- To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed-free” and seed mix will be agreed to in advance by the landowner or land managing agency (EPM OM-15).
- The Companies shall consult with each appropriate local land management agency (USFS and BLM) office to determine appropriate seed mix and commercial seed source for revegetation. The Final Reclamation Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project (EPM WEED-1).
- Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives (EPM WEED-14).
- Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1 inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed to remove air pockets (EPM REC-24).
- Drill seeding will be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth (EPM REC-25).

- Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydroseeding/hydromulching, which is the spraying of seeds, mulch, and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25 percent (EPM REC-26).
- Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils (EPM REC-27).
- If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring (EPM REC-28).
- Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan) (EPM REC-29).

5.3.5 Alternative Seeding

Alternative seeding is employed to establish ground cover in disturbed or weed infested areas by seeding of annual grasses and/or forbs. The annual grasses are usually sterile rye or oats, since the regeneration of non-natives is not desirable. Annuals provide short-term soil cover, stabilization, and a source of organic litter until other vegetation can become established. Similar to regular seeding, alternative seeding mix compositions and seeding methods will be determined prior to construction through Construction Contractor coordination with the applicable land manager or landowner.

5.3.6 Vertical Mulch/Slash

Vertical mulch/slash is brush and limbs less than 6 inches in diameter removed during woody vegetation removal operations. Vertical mulch/slash is not entirely in contact with the soil surface; rather, parts of the mulch rise above the surface. Removed and stored trees and shrubs are the sources of vertical mulch/slash. For cleared areas, vegetation windrowed to the outside of the disturbance boundary will be replaced back onto the site. Vertical mulch/slash shall be placed randomly and in accordance with PacifiCorp's Transmission & Distribution Vegetation Management Program Specification Manual (PacifiCorp 2012).

5.3.7 Visual Composition

The following EPM will be applied, as necessary, to this reclamation action to achieve visual standards:

- To mitigate potential visual impacts on federal land, the construction and maintenance plan to be developed by the Companies will include measures to reduce ROW scarring and enhance restoration. The plan will be approved by the land management agency prior to ground clearing and construction (EPM VIS-14).

5.3.8 Signage

Reclamation areas will require informational signs to prevent further disturbance by humans within these recovering areas. All reclamation areas will have signs installed at locations where the ROW intersects permanent access roads to deter vehicular damage to the site. The sign shall read similar to “Restoration in Progress – No Vehicle Traffic Allowed” as indicated in Appendix U of the POD – Framework Flagging, Fencing, and Signage Plan.

The Construction Contractor will provide the reclamation signs and t-posts. Sign locations will be provided by the Construction Contractor to the BLM or USFS following completion of post-construction reclamation procedures and prior to the initiation of reclamation monitoring.

5.3.9 Reclamation Monitoring

Monitoring will be initiated prior to construction and continue through the post-construction phases of the Project. As required in IM WY-2012-032, compliance and effectiveness monitoring will be in accordance with the appropriate BLM or USFS approved monitoring protocol. Monitoring data will be evaluated for compliance with Section 6.3 – Data Collection of this Plan, and will be documented and reported to facilitate revised reclamation strategies, if applicable. Revised strategies shall be implemented as needed. Evaluation of reclamation success will be based on criteria as described in Section 6.4 – Reclamation Goals and Success Standards. The following EPM pertains to reclamation monitoring:

- The Companies are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit (EPM SOIL-5).

Reclamation monitoring and reporting will be required as described below in Section 6.2 of the Plan, regardless of land ownership.

5.4 Modifications and Field Changes

The reclamation actions described in this Plan shall be incorporated into the Final Reclamation Plan, to be developed by the Construction Contractor or reclamation subcontractor and subject to the approval of the land management agency and/or landowner. The Final Reclamation Plan will also be coordinated with the CIC.

Adjustments to RLs or actions by the Construction Contractor may be necessary if Project conditions change (e.g., disturbance levels change at a specific tower work site, access roads change based on Project needs, etc.). However, any changes to these levels of reclamation and the associated actions will be reviewed and approved by the CIC.

This Plan is intended to provide flexibility with respect to construction and unknown constraints that may be encountered in the field. Changes to the original disturbance level or duration, previously described, will be documented by the Construction

Contractor and reclamation level will be reassessed to ensure appropriate reclamation actions are implemented.

6.0 RECLAMATION SUCCESS STANDARDS, MONITORING, AND MAINTENANCE

This Plan requires post-construction reclamation monitoring to evaluate reclamation success of reclaimed areas associated with the construction of Project facilities, to identify the need for adaptive management measures, and to make a final determination regarding reclamation success to release the Companies (and the Construction Contractor by contractual obligation) from further monitoring and reclamation actions.

Reclamation success standards will be used by the BLM and USFS to determine if the implemented reclamation actions have adequately achieved the goals and objectives provided in the Final Reclamation Plan, with consideration for local site conditions. The Final Reclamation Plan will be developed by the Construction Contractor or their reclamation subcontractor and is subject to the approval of the BLM and USFS.

The monitoring practices include standard techniques for monitoring sites, data collection, as well as the quantitative (numerical) and qualitative (descriptive) measures to be used in monitoring reclamation success. Specific monitoring requirements, including the site-specific data analysis protocol, will be developed by the Construction Contractor or their reclamation subcontractor, in coordination with the CIC, BLM, and USFS prior to the start of preconstruction surveys and activities. Data will be collected as described below at both the treatment and control sites upon establishment of monitoring sites during preconstruction activities. The data will provide a baseline for comparison to post construction conditions and allow the land management agency and Companies to make more accurate conclusions pertaining to reclamation success based on site-specific conditions, such as biotic community and climatic conditions.

Reclamation monitoring will be conducted on an annual basis for 3 years following completion of construction. The first annual monitoring event will occur during the first growing season after reclamation actions for the entire Project have been completed. If after 3 years, post construction reclamation monitoring does not meet reclamation success as defined in Section 6.4, monitoring will continue for up to an additional 2 years (for a maximum reclamation monitoring period of 5 years).

If adjacent land uses are hindering reclamation success, the Companies will not be required to conduct remedial actions and/or monitoring for more than 3 years. The Companies and the appropriate land management agency/landowner will coordinate to make this determination.

The CIC or third-party contractor will prepare and submit a Reclamation Monitoring Report to the Companies, the BLM and USFS, and the Construction Contractor on an annual basis for 3 years (or up to 5 years as described above). The purpose of the Reclamation Monitoring Report is to provide a status update on progress towards meeting reclamation goals and success standards as described in the Final Reclamation Plan. The Reclamation Monitoring Report will, at a minimum, include:

- a reiteration of reclamation goals and success standards as described in the Final Reclamation Plan;
- a description of the monitoring practices implemented;
- a presentation of the reclamation monitoring data collected;
- a discussion of the demonstrated or lack of demonstrated progress toward the success standards;
- a discussion of adaptive management;
- a proposed list of sites to be released from further monitoring; and
- site-specific recommendations for remedial actions, as appropriate.

Adaptive management may be necessary to determine appropriate remedial actions, based on monitoring observations from any year, for sites that have not demonstrated progress toward reclamation success standards. If required, implementation of remedial actions will be determined by the land management agency based on the monitoring data and annual report. After a maximum of 5 years of post-construction monitoring, the last year's report will be submitted with a summary of monitoring data, observations, and the overall trend toward reclamation for each vegetation type.

The BLM or the USFS will release the Companies from further reclamation and monitoring requirements for specific areas upon acceptance of the annual monitoring report documenting that reclamation success criteria have been met. However, reclamation in soils with low moisture and high salt content may take longer than 3 years to re-establish satisfactory vegetative cover. The Companies will maintain responsibility for post construction monitoring for these areas for up to 5 years, as discussed above.

6.1 Monitoring Requirements

Monitoring requirements will vary according to RL as shown in Table 6-1. Category RL1 areas (e.g., at structure bases, existing and long-term access) are permanent disturbance areas that will not require reclamation monitoring. However, all reclamation areas will follow measures for noxious weed control as applicable and specified in Appendix E – Framework Noxious Weed Plan.

RL2, RL3, RL4, and RL5 are disturbance areas that will require reclamation actions and subsequent reclamation monitoring efforts. Reclamation monitoring includes both general reclamation monitoring and site-specific reclamation monitoring as described in Section 6.2.

The specific location of monitoring sites associated with these different activities in key areas will be identified by the Construction Contractor in coordination with the CIC and then reviewed and approved by the BLM and USFS prior to initiation of construction activities. Once monitoring sites have been approved, the Construction Contractor will establish the sites in the field and baseline data (i.e., photo points, biometrics, soil conditions) will be collected. The Construction Contractor or their reclamation subcontractor will conduct annual monitoring for a minimum of 3 years following post-construction activities. For disturbed areas affecting sensitive plants, at minimum,

photos from permanent photo points, percent cover of sensitive plants within the affected areas, and noxious weed presence and treatment data will be collected and reported annually.

Table 6-1. Reclamation Monitoring Requirements

Construction Component (activity areas)	Disturbance Level	Disturbance Duration		Reclamation Level	Monitoring
		Permanent	Temporary		
Structure work areas	D2		●	RL2	General
	D3		●	RL3	General
	D4	●		RL4	General
	D4		●	RL5	General, Site-specific
	D5		●	RL2	General
Wire-pulling and tensioning sites, wire-splicing sites, multi-use construction yards, staging areas, helicopter refueling sites, wash stations, guard structures, and other ancillary facilities that result in temporary disturbance	D2		●	RL2	General
	D3		●	RL3	General
	D4		●	RL5	General, Site-specific
Substation, regeneration sites and other ancillary facilities	D2		●	RL2	General
	D3		●	RL3	General
	D4	●		RL4	General
Existing paved roads, access roads (no improvement)	D1	●		RL1	None
Existing access roads (with improvements)	D4	●		RL4	General
New access roads	D2	●		RL4	General
	D2		●	RL2	General
	D3	●		RL4	General
	D3		●	RL3	General
	D4	●		RL4	General
	D4		●	RL5	General, Site-specific
	D5		●	RL2	General

6.2 Monitoring Practices (Methodology)

Delineation of monitoring sites and field verification of vegetation alliances will be accomplished in conjunction with preconstruction surveys. Delineation of monitoring sites (both a treatment site and control site) will include the collection of baseline data for comparison with subsequent post-construction monitoring. Post construction annual monitoring and collection of data will be conducted during the growing season after construction and reclamation actions are completed.

Reclamation monitoring in sensitive plant areas will be conducted during the blooming period for the species of interest. An annual Reclamation Monitoring Report will be prepared by the Construction Contractor or their reclamation subcontractor with oversight by the CIC and provided to the Companies, BLM, and USFS for review and discussion of reclamation conditions. Construction activities will result in varying disturbance levels that will require two types of monitoring:

1. **General reclamation monitoring**. General field reconnaissance (windshield survey) and reporting of conditions in areas disturbed during construction where reclamation actions have been implemented.
2. **Site-specific reclamation monitoring**. Detailed field data collection and reporting at designated reclamation monitoring sites as identified in the Final Reclamation Plan.

A description of the activities associated with these two monitoring methods (practices), and how these practices will be assigned to areas affected by construction of the transmission line and associated facilities, is presented below. The Construction Contractor or their reclamation subcontractor responsible for performing reclamation monitoring will consult with the BLM and USFS to adapt these protocols, as needed, to meet localized conditions and concerns.

6.2.1 General Reclamation Monitoring

A general field review of the entire transmission line layout, where accessible by vehicle, will be conducted in conjunction with annual site-specific reclamation monitoring. The intent of this review is to document overall recovery conditions associated with the Project. Conditions of concern to be documented may include establishment of noxious weed populations resulting from Project construction and/or significantly eroded soils. In lieu of establishing monitoring sites, documentation may include establishing single photo points at agreed upon locations with the BLM and USFS and/or recording the apparent cause of unsuccessful reclamation or remediation. Site locations may be documented by noting the direction and estimated distance to the nearest transmission line tower (by number) or GPS coordinates.

Adaptive management actions may be implemented based on findings of general reclamation monitoring as recommended by the BLM and USFS and described in Section 6.5 – Adaptive Management and Site Release. Each annual visit will be used to assess designated general reclamation monitoring locations and document new locations where appropriate.

6.2.2 Site-Specific Reclamation Monitoring

Preliminary site-specific reclamation monitoring locations will be established during preconstruction surveys within areas that will be disturbed by the Project. A single monitoring site includes both a treatment site and a control site. The treatment site is an area expected to be disturbed during construction and that will be reclaimed. The control site will be paired with the treatment site; meaning the control site will be in the vicinity of the treatment site and will have the same slope, aspect, and vegetation characteristics as the treatment site (prior to disturbance).

Sites will be selected for each of the reclamation zones and vegetation types traversed by the Project, in accordance with the processes identified below.

- Site selection will be prioritized to include sensitive plant areas and locations with high visual resource values.
- An average of two to five paired monitoring sites per vegetation type is recommended, based on the extent and diversity of vegetation alliances within the vegetation type.
- At least one paired monitoring site will be established for each area of disturbance affecting sensitive plants.
- Selection of monitoring sites will be stratified based on proportions of each vegetation type subject to reclamation activities (e.g., if 40 percent of the total area subject to disturbance and subsequent reclamation activities is sagebrush, then 40 percent of the total number of monitoring sites will be located in sagebrush).
- Selection of monitoring sites shall be further stratified based on the presence of noxious weeds, non-native, or invasive species infestations (e.g., if the total vegetation type area is approximately 70 percent cheatgrass, approximately 70 percent of the monitoring sites will be located in cheatgrass infested areas, and approximately 30 percent of the monitoring sites will be located in 'clean' areas).

Final determination of monitoring sites will be approved by the BLM and/or USFS prior to construction. Cooperation with the Construction Contractor may be necessary prior to construction if changes to construction work area(s) affect the location(s) of the preliminary monitoring site(s).

For each monitoring site, paired vegetation transects or plots will be installed and documented as treatment or control for quantitative monitoring. In general, the treatment transect or plot will be placed within an affected area (normally within the immediate ROW), and the control transect or plot will be placed immediately adjacent to the ROW, on undisturbed ground. Transect or plot size and quantity will be determined based on the final footprint of disturbed areas, in cooperation with the BLM and USFS. Transect or plot pairs shall be sized and oriented in a similar manner, for consistency, unless terrain or construction conditions require deviation. In addition, the location of monitoring sites shall avoid areas susceptible to future human disturbance (off-highway vehicles [OHV], transmission line maintenance, planned future utilities), where possible, to preserve the integrity of each monitoring site for the duration of the monitoring period.

Once monitoring site locations are finalized, photo points will be established prior to any construction-related disturbance. Photo points will be marked by a wooden stake or metal t-post and location recorded with GPS technology to ensure that subsequent photos taken are taken from the same location. The cardinal direction of photos taken will be recorded to allow recreation, to the extent possible, of the same view. Photos will be taken at each photo point (1) when the photo point is established, (2) when initial reclamation efforts have been completed, and (3) during each yearly monitoring visit. Photo points will be collected at the same time of year for each year of monitoring, and with the same camera, if possible. Each photo point will include:

- a close-up photo (0.5-meter by 0.5-meter photo plot) depicting soil surface characteristics and amount of vegetation and litter; and
- a general overview photo of the site and/or photos depicting north, south, east, and west views.

Site-specific reclamation monitoring sites will be examined annually, and a variety of vegetation data will be collected including quantitative and descriptive information. Parameters that will be used to measure reclamation success are presented in Section 6.4 – Reclamation Goals and Success Standards. Reclamation monitoring sites will also assess noxious weed, non-native, and invasive species establishment that may require remedial actions such as removal or treatment. However, it should be noted that post construction monitoring for Project-related impacts to noxious weeds may occur independently of reclamation monitoring, as outlined in Appendix E of the POD – Framework Noxious Weed Plan.

Reclamation monitoring will also include the consideration of erosion control as a key indicator to measure the trend toward reclamation success (where applicable), and remedial actions may be taken in conjunction with monitoring efforts to control erosion, as recommended by the land management agency. These remedial actions will also follow requirements as stipulated in the Framework SWPPP and Framework Erosion, Dust Control and Air Quality Plan of the POD (Appendices F and N, respectively). In conjunction with, and complimentary to, reclamation monitoring, the Companies are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit per EPM SOIL-5.

6.3 Data Collection

The collection of baseline data during preconstruction establishment of treatment and control monitoring sites and annual post construction reclamation monitoring will include both quantitative (numerical) and qualitative (descriptive) data collection. Quantitative monitoring will document the trend and degree of change at each site, and qualitative monitoring will enable investigation of potential reasons for reclamation success or lack thereof and identification of unanticipated issues. Additional baseline data to be collected during preconstruction establishment of treatment and control sites will include the collection of site characteristics that are not expected to change throughout the monitoring period. In addition to the qualitative and quantitative data described below, information to be collected and/or recorded during the initial establishment of monitoring sites may include location, slope, aspect, elevation, soil type, percent rock, and underlying geology.

Reclamation monitoring for the Project will use vegetation as the main indicator of recovery, but observations on soil conditions will also be collected and considered when assessing progress toward functionality. Measurements and descriptions will be accompanied by photographs that will be used to visually document the status of recovery at all monitoring sites. Sampling points will be mapped and relocated using GPS technology. Photo points and field notes will be the primary methods of qualitative monitoring for the Project. A protocol for taking photographs and a standardized data-recording form will be developed

by the reclamation subcontractor and approved by the BLM and USFS to ensure consistency of monitoring. Qualitative and quantitative information to be obtained during general reclamation monitoring and site-specific monitoring is described in detail below.

6.3.1 Qualitative (Descriptive) Information

Qualitative data collection will occur annually for both general and site-specific monitoring. The goal of qualitative monitoring is to describe site conditions and assess the need for remedial actions to ensure sites are progressing toward the success standards to be established by the reclamation subcontractor in consultation with the applicable land management agency. The Project area typically has unpredictable weather patterns that may affect reclamation success within the allotted 3- to 5-year post construction monitoring timeframe. Comparing annual qualitative evaluations within similarly disturbed areas in the same vegetation type will allow for identification of sites that are demonstrating a comparative lack of reclamation success and may require remedial action. Any non-Project-related disturbances that could affect reclamation will also be documented and described during the collection of qualitative information.

Reclamation success may be assessed by the presence or condition of certain site characteristics that encourage recruitment of native vegetation. If reclamation actions for a given site are implemented successfully, they will contribute to the stabilization of soils, native species seedling or seedbank recruitment, and prevention of noxious weeds establishment. The following items should be considered when establishing a qualitative monitoring worksheet for use during monitoring:

- *Evidence of seed germination.* Are seeds germinating? Are seedlings emerging?
- *Waste materials management.* Is the site free of trash and construction material? Is the area free of undesirable materials that may inhibit reclamation success?
- *Evidence of soil stabilization and lack of erosion.* Indicators that soils have not stabilized and erosion is negatively affecting reclamation success include rills greater than 2 inches, sheet flow, head cutting in drainages, slopes occurring on or adjacent to reclaimed areas, and any signs showing accelerated erosion is occurring and soils are not being held by plants on site.
- *Occurrence of noxious weeds.* Noxious weeds compete with native species, and relatively high abundances can have negative effects on site conditions. Are noxious weeds on site? Are they inhibiting reclamation success beyond their level of influence at the control site?
- *Evidence of good reproductive capability.* Is seed production evident? How does the amount of tillers, rhizomes, flowers, and/or seed stalk compare to the control site or the expectations of the particular seed mix utilized for reclamation?
- *Evidence of wildlife use.* Wildlife presence can indicate that habitat conditions are improving; however, herbivory can negatively affect reclamation success if unmanaged. Are wildlife species over-browsing the site?

- *Visual appearance.* Does the visual appearance compare similarly to surrounding habitats? Visual comparison with general patterns of established vegetation documented during preconstruction conditions or as observed in the control site will help to determine whether large bare areas are indicative of site conditions or simply a result of the innate patchiness of the vegetation alliance or type.
- *Plant vigor.* Are seedlings displaying vigorous growth? Do they appear healthy? Are they dead or in poor, fair, good, or excellent condition?

Each of these site characteristics will help determine trends that relate to reclamation success.

6.3.2 Quantitative (Numerical) Information

Desirable vegetation cover and composition will be quantitatively assessed at site-specific reclamation monitoring sites during the second and third growing seasons (and in subsequent monitoring events if deemed necessary) to determine if there is progress toward reclamation success standards based on comparison with preconstruction conditions and the control site of each monitoring site. Quantitative assessment during the second and third years will enable early identification of potential reclamation issues, and ensure that vegetation establishment of the affected areas is occurring as expected based on climatic trends for the area. The following items should be considered when establishing a quantitative monitoring methodology:

- *Plant species list.* Record a complete plant list for each monitoring site. This provides a relative measure of diversity at the site. Each species should be categorized as woody or herbaceous, and native, non-native, or listed as a noxious weed. Sensitive species will be indicated as such.
- *Total canopy cover.* A line-point intercept method (Herrick et al. 2009) is a rapid and accurate method for quantifying soil cover, including vegetation, litter, rocks, and biotic crusts. This method provides measures for foliar cover, basal cover, and bare ground.
- *Vegetation type structure and composition.* Indicate percent cover of woody, herbaceous, native, non-native, and noxious weed species. This will allow for an assessment of whether treatment sites are trending towards achievement of the target vegetation type structure and composition.
- *Percent cover of dominant species.* The percent cover for the five species with the highest percent cover at each monitoring site will be recorded. This information will enable comparison with control site vegetation communities and provide an indicator of whether the treatment site is developing similar proportional cover of desirable dominant species.
- *Percent cover of sensitive plant species.* The percent cover for sensitive plant species will be recorded, regardless of whether they are most numerous or not.

Diversity, composition, and cover data will be recorded on standard field data sheets to be developed by the reclamation subcontractor and approved by the BLM/USFS.

6.3.3 Baseline Information

Site characteristics that are not expected to change throughout the monitoring period will be collected during the initial visit. These characteristics should be as similar as possible between control and treatment (i.e., paired) sites. In addition to the qualitative and quantitative information to be collected as described above, data to be collected and/or recorded during the establishment of control and treatment sites may include the following:

- *Location.* Record the location of the site with a GPS. The location of photo points will also be recorded.
- *Slope.* Slope of the site will be recorded. This may include a range if slope is not generally uniform throughout the monitoring site.
- *Aspect.* Record the aspect of the site (cardinal direction the site faces).
- *Elevation.* Record the elevation of the site.
- *Soil type.* Record the soil type(s) based on site-specific conditions (soil pit) and Natural Resources Conservation Service-mapped soil type.
- *Percent rock.* Record the percent rock within the treatment or control site area.
- *Underlying geology.* Characterize and describe the underlying geology at the site.

6.4 Reclamation Goals and Success Standards

As stated in Section 1.1, "The purpose of this Plan is to provide a framework for reclamation treatments to be applied to Project-related disturbance, prevent unnecessary degradation of the environment during construction, operation and maintenance, and reclaim temporary use areas and disturbed areas such that these areas are ecologically functional and visually compatible with the surrounding environment, to the greatest extent practicable." Reclamation success, as presented in this Plan, is defined by the progression of vegetation and soils toward control site and/or preconstruction conditions. Once reclamation success standards have been met, established vegetation is anticipated to contribute to the maintenance and functionality of the community to ensure continued success after monitoring has concluded.

The Companies will be responsible for monitoring reclamation efforts for the Project. Reclamation success will be evaluated by the land management agency by comparing monitoring sites in terms of desirable species cover. Reclamation of treatment sites will be considered successful if each site is within a specified percentage of the mean native species cover of the control site. Control sites will be representative areas that exhibit the same target vegetation type located adjacent to, or near the Project-affected treatment sites. Control sites will be selected with the same slope, aspect, and elevation as the treatment sites, to the extent practicable. The establishment of control sites within undisturbed vegetation will allow the monitor to compare the reclamation progress of the treatment site against the control site.

Reclamation success is highly dependent on vegetation type, environmental conditions (e.g., annual precipitation), avoidance of future disturbance, proper implementation of reclamation actions, and to a certain extent, reclamation zone. Recovery from

construction disturbance activities such as clearing and grading in the semi-arid and arid climactic zones in which the Project is located does not typically occur quickly.

Therefore, reclamation monitoring will assess the progress toward reclamation success standards presented in Table 6-2 - Reclamation Monitoring Success Standards. Success standards will be developed based on preconstruction data collected at each monitoring site and/or data collected at each control site.

Table 6-2 presents preliminary reclamation monitoring success standards for each reclamation zone identified in Section 4.1 of this Plan. These standards shall be considered the minimum requirement for each reclamation zone. Every zone (i.e., landscape cover type) includes a range of vegetation types and most vegetation types encompass multiple vegetation alliances that would need to be considered to determine final reclamation standards for each monitoring site identified during preconstruction surveys.

Table 6-2. Reclamation Monitoring Success Standards

Reclamation Zone	Percent Desirable Vegetation Cover
Z1 (Shrublands)	50
Z2 (Grasslands)	60
Z3 (Forest and Woodland)	50
Z4 (Wetland and Riparian)	70

Percent cover (amount of vegetation canopy per unit) reclamation monitoring success standards will be based on quantitative data collected (discussed Section 6.3 – Data Collection) during preconstruction baseline data collected at the treatment site. For example, the preconstruction baseline of the treatment site has an average of 80 percent native vegetation cover with 60 percent cover of native woody vegetation and 20 percent cover of native herbaceous vegetation. If the success standard determined for the monitoring site is 50 percent, the monitoring site will be considered a reclamation success once the percent native cover reached 40 percent, composed of 30 percent native woody vegetation and 10 percent native herbaceous vegetation.

If the annual monitoring report concludes (with agency concurrence) that typical environmental conditions, proper implementation of reclamation actions, and lack of disturbance is evident, reclamation success will be based on desirable vegetation cover for each vegetation type. If reclamation success is not evident by the last annual monitoring report (with agency concurrence), or if interim monitoring reports indicate that reclamation success is highly unlikely, adaptive management and/or remedial actions (Section 6.5 – Adaptive Management and Site Release) may be required by the land management agency.

Reclamation of permanent roads will be considered successful when perennial vegetation is established on BLM and USFS administered lands, as approved by BLM and USFS. Reclamation of permanent roads on private lands will be considered successful when perennial vegetation is established, or in coordination with the landowner. Quantitative success standards for permanent roads are not identified; however, some vegetative cover must be established for the protection of vegetation

and water resources, soil stabilization, and blending the road into the natural surroundings.

6.5 Adaptive Management and Site Release

An adaptive management approach will be required to allow frequent review and feedback on the progress of reclamation as a part of monitoring activities for the Project. Adaptive management greatly increases the potential for reclamation success by providing for early detection of problems and the opportunity to implement remedial actions to address these problems. Effective monitoring is an essential element of adaptive management because it provides reliable feedback on the effects of reclamation actions. If it has been determined adaptive measures are necessary, monitoring data (both qualitative and quantitative) will provide information on reclamation components that are deficient, such as desirable vegetation cover, soil compaction, or lack of parent soil material due to erosion. Based on this information, appropriate remedial reclamation actions may include measures such as supplemental seeding, mulching, weed treatment, access control, herbivory prevention, and/or erosion control measures. Recommendations could also include waiting to determine if favorable germination/establishment conditions are expected.

Progress toward reclamation success standards, as well as remedial/adaptive management actions (if necessary), will be identified in the annual Reclamation Monitoring Reports. Should remedial actions be required after year three, additional qualitative and quantitative monitoring in years four and five (as appropriate) will allow the effects of remedial actions or climatic events to be discerned. Adaptive management actions associated with unauthorized or excessive access, herbivory, or erosion may be appropriate on a case-by-case basis where feasible as early as a result of the year one or two monitoring data analysis, whereas adaptive management actions associated with supplemental planting or seeding may not be appropriate until the year three monitoring data analysis. Recommendations for adaptive management actions will be included in the annual Reclamation Monitoring Report and implemented by the Companies in coordination with the applicable land management agency.

All adaptive management actions will be subject to the review and approval of the land management agency or landowner. The Construction Contractor will use all reasonable methods to help the Companies ensure reclamation is progressing toward the success standards identified in Section 6.4 – Reclamation Goals and Success Standards. It is possible some sites will be incapable of supporting adequate vegetation to progress towards the success standards due to conflicting land management and/or environmental limitations not associated with the Project. For instance, reclamation may fail in areas with unmanaged OHV access, grazing of domestic livestock, natural disasters such as fire or flooding, and/or construction of other utility projects. If reclamation failure on federally managed or other cooperating agency (i.e., State of Wyoming) lands is determined by the CIC to be caused by these conditions, neither the Companies nor any of its construction or reclamation primary contractors or subcontractors will be held responsible for continued reclamation and monitoring of these sites.

7.0 LITERATURE CITED

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ATTACHMENT D-1
AGENCY-APPROVED SEED MIXES

The following seed mixes are examples provided by the BLM and USFS and shall be used by the Construction Contractor and/or subcontracted reclamation specialist when developing a Final Reclamation Plan. When choosing seed mixes and seed sources for reclamation activities, all EPMs will be followed as well as reclamation actions set forth under Seeding in Section 5.3.4.

Seed mixes shall be created for each reclamation zone, and for each vegetation type within the reclamation zone. Some vegetation types may contain such diversity in vegetation alliances that several seed mixes may be developed for each vegetation type. Some of the approved seed mixes shown here include recommended seeding rates (quantities), while others do not. Seeding rates will need to be included in the Final Reclamation Plan. When listed, seeding rates (quantities) are listed as pounds per acre of pure live seed and are assumed to be drill seeded. Seeding rates will be 1.5 times the rate identified if a hydroseed or broadcast method of application is used. The seed mixes may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. An alternative seeding rate may be applied in areas deemed appropriate by the land management agency or landowner. Agency-approved seed mixes include:

Attachment D-1.1: BLM Casper Field Office Approved Seed Mixes

Attachment D-1.2: BLM Rawlins Field Office Approved Seed Mixes

Attachment D-1.3: BLM Rock Springs Field Office Approved Seed Mixes

Attachment D-1.4: BLM Kemmerer Field Office Approved Seed Mixes

Attachment D-1.5: BLM High Desert District Approved Seed Mixes

Attachment D-1.6: Caribou-Targhee National Forest Approved Seed Mixes

Attachment D-1.7: Medicine Bow-Routt National Forest Approved Seed Mixes

ATTACHMENT D-1.1
BLM CASPER FIELD OFFICE APPROVED SEED MIXES

This is a recommendation of native species for the Project from the Casper Field Office. Based on the soil types the project passes through, the following seed mix would be applicable to all sites on BLM lands encompassed by the Casper Field Office.

By percent of pure live seed (pls) in the mix:

- Western wheatgrass 30%
- Blue bunch wheatgrass 25%
- Bottlebrush squirrel tail 10%
- Blue Grama 10%
- Prairie Junegrass 10%
- Big Wyoming Sagebrush 10%
- Winterfat 5%

Target pounds per acre of total seed mix would be approximately 10-12 pls/acre

BLM Contact:

Dustin Burger
Rangeland Management Specialist
BLM-Casper Field Office

ATTACHMENT D-1.2
BLM RAWLINS FIELD OFFICE APPROVED SEED MIXES

Commercially Available Seed

Partial list, by combined ecological sites
(not all inclusive for RFO—only the more common sites MLRA 34)

DRY LOAMY/CLAY SITES Site - *characterized as a sagebrush/wheatgrass community with less than 10 inches precipitation.* Includes: Dense clay, Impervious clay, Shale, Shallow loamy and Loamy ESD's.
Vegetative components, when generally undisturbed, for this ecological site: grasses 50%-70%; forbs 10%; bare ground < 25%; no noxious weeds and < 5% non-native invasives. Shallow soils will tend to be composed of 10-20% woody and deeper soils will tend to be composed of 20-30% woody. Contact RFO for Saltbush or birdsfoot sage dominated site specifications.

Species	Variety	SYMBOL
Grasses		
Streambank wheatgrass (*Elymus lanceolatus*)	Sodar	ELLA
Thickspike wheatgrass (*Elymus lanceolatus*)	Critana	ELLA3
Western wheatgrass (*Pascopyrum smithii*)	Rosana	PASM
Indian ricegrass (*Achnatherum hymenoides*)	Rimrock (Nez Par)	ACHY
Bottlebrush squirreltail (*Elymus elymoides*)	Sand hollow	ELEL
Slender wheatgrass (*Elymus trachycaulus*)	Pryor (San Luis)	ELTR
Little bluegrass "Sandberg" (*Poa secunda*)	High plains	POSE
Bluebunch wheatgrass (*Pseudoroegneria spicata*)	Secor	PSSP6
Galleta grass (*Pleuraphis jamesii*)	Viva	PLJA
Shrubs		
Big sagebrush (*Artemisia tridentata wyomingensis*)		ARTRW8
Gardner's saltbush (*Atriplex gardneri*)		ATGA
Fourwing saltbush (*Atriplex canescens*)	Wytana	ATCA2
Shadscale (*Atriplex confertifolia*)		ATCO
Rabbitbrush (*Ericameria nauseosa*) "green or rubber" (*Chrysothamnus viscidiflorus*) "Gray, yellow, or Douglas"		ERNA10 CHVI8
Winterfat (*Krascheninnikovia lanata*)	Open Range	KRLA
Forbs		
Lewis' flax (*Linum lewisii*)		LILE
Rocky Mountain beeplant (*Cleome serrulata*)	Appar	CLSE
Western yarrow (*Achillea millefolium* L. var. *occidentalis*)		ACMI2
Firecracker penstemon (*Penstemon eatonii*)	Yakima	PEEA
Textile onion (*Allium textile*)		ALTE
Scarlet globemallow (*Sphaeralcea coccinea*)		SPCO
Western wallflower (*Erysimum capitatum*)		ERCA14
Scarlet gilia (*Ipomospis aggregata*)		IPAGA3
Spiny phlox (*Phlox hoodii*)		PHHO
Desert biscuitroot (*Lomatium foeniculaceum*)		LOFO
Dotted gayfeather (*Liatris punctata*)		LIPU

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DRY SANDY SITES - *characterized as a sagebrush/bunchgrass community with less than 10 inches precipitation.* Includes Sandy, Sands, Shallow sandy ESDs
Vegetative components, when generally undisturbed, for this ecological site: grasses 45-55%; forbs10-20%; bare ground < 20%; no noxious weeds and < 5% non-native invasives. Shallow soils will tend to be composed of 10-20% woody, and deeper soils will tend to be composed of 20-30% woody.

Species	Variety	SYMBOL
Grasses		
Indian ricegrass (*Achnatherum hymenoides*)	Rimrock (Nez Par)	ACHY
Needleandthread (*Hesperostipa comata*)		HECO
Slender wheatgrass (*Elymus trachycaulus*)	Prior	ELTR
Sandhill muhly (*Muhlenbergia pungens*)		MUPU
Western wheatgrass (*Pascopyrum smithii*)	Rosana	PASM
Thickspike wheatgrass (*Elymus lanceolatus*)	Critana	ELLA3
Threadleaf sedge (*Carex filifolia*)		CAFI
Galleta grass (*Pleuraphis jamesii*)	Viva	PLJA
Shrubs		
Rubber rabbitbrush (*Ericameria nauseosa*) "green" (*Chrysothamnus viscidiflorus*) "Gray, yellow, or Douglas"		ERNA10 CHVI8
Gardner's saltbush (*Atriplex gardneri*)		ATGA
Big sagebrush (*Artemisia tridentata wyomingensis*)		ARTRW8
Spiny hopsage (*Grayia spinosa*)		GRSP
Fourwing saltbush (*Atriplex canescens*)	Wytana	ATCA2
Silver sage (*Artemisia cana*)		ARCA13
White sage (*Artemisia ludoviciana*)		ARLU
Forbs		
Scarlet globemallow (*Sphaeralcea coccinea*)		SPCO
Lewis' flax (*Linum lewsii*)	Appar	LILE
Rocky Mountain beeplant (*Cleome serrulata*)		CLSE
Western wallflower (*Erysimum capitatum*)		ERCA14
Scarlet gilia (*Ipomospis aggregata*)		IPAGA3
Textile onion (*Allium textile*)		ALTE
Dotted gayfeather (*Liatris punctata*)		LIPU

LOAMY/CLAY SITES - *characterized as a sagebrush/wheatgrass community with 10 or greater inches of precipitation.* Includes: Dense clay, Impervious clay, Shale, Overflow, Shallow loamy and Loamy ESD's. Vegetative components, when generally undisturbed, for this ecological site: grasses 60-70%; forbs 10-15%; bare ground <30%; no noxious weeds and < 5% non-native invasives. Shallow soils will tend to be composed of 10-20% woody, and deeper soils will tend to be composed of 20-30% woody.

Species	Variety	SYMBOL
Grasses		
Western wheatgrass (*Pascopyrum smithii*)	Rosana	PASM
Thickspike wheatgrass (*Elymus lanceolatus)*	Critana	ELLA3
Indian ricegrass (*Achnatherum hymenoides)*	Rimrock (Nez Par)	ACHY
Green needlegrass (*Stipa viridula*)	Lordon	NAVI4
Prairie Junegrass (*Koeleria macrantha*)		KOMA
Bottlebrush squirreltail (*Elymus elymoides*)	Sand Hollow	ELEL
Mutton bluegrass (*Poa fendleriana*)		POFE
Streambank wheatgrass (*Elymus lanceolatus)*	Sodar	ELLA
Bluebunch wheatgrass (*Pseudoroegneria spicata)*	Secor	PSSP6
Basin wildrye (*Leymus cinereus)*	Trailhead, Magnar	LECI
Galleta grass (*Pleuraphis jamesii*)	Viva	PLJA
Idaho fescue (*Festuca idahoensis*)	Nezperce/Joseph	FEID
Mountain brome (*Bromus marginatus*)	Garnet	BRMA4
Muttongrass (*Poa fendleriana*)		POFE
Shrubs		
Big sagebrush (*Artemisia tridentata wyomingensis*)		ARTRW8
Big sagebrush (*Artemisia tridentata vaseyana) sites > 7,000'*		ARTRV
Fourwing saltbush (*Atriplex canescens*)	Wytana	ATCA2
Antelope bitterbrush (*Purshia tridentata*)		PUTR2
Snowberry (*Symphoricarpos oreophilus*) and/or (*S. albus)*	Maybell	SYOR2
Winterfat (*Krascheninnikovia lanata)*		KRLA
Shadscale saltbush (*Atriplex confertifolia*)		ATCO
Mountain mahogany (*Cercocarpus montanus*)	Montane	CEMO2
Forbs	Open Range	
Lewis' flax (*Linum lewsii*)	Appar	LILE
Scarlet globemallow (*Sphaeralcea coccinea*)		SPCO
American vetch (*Vicia americana*)		VIAM
Lupine (*Lupinus sericeus)*		LUSE4
Blanketflower (*Gaillardia aristata)*		GAAR
Western yarrow (*Achillea millefolium* L. var. *occidentalis)*	Yakima	ACMI
Firecracker penstemon (*Penstemon eatonii)*	Richfield	PEER
White sage (*Artemisia ludoviciana*)		ARLU
Giant evening primrose *(Oenothera hookeri)*		OEELH
Textile onion (*Allium textile*)		ALTE
Arrowleaf balsamroot (*Balsamorhiza sagittata)*		BASA3
Balsam groundsel *(Packera paupercula)*		PAPA20
Dotted gayfeather (*Liatris punctata*)		LIPU

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SANDY SITES - *characterized as a sagebrush/bunchgrass community with 10 or greater inches of precipitation.* Includes Sandy, Sands, Shallow sandy ESDs
Vegetative components, when generally undisturbed, for this ecological site: grasses 70%; forbs 10%; and woody 20%; bare ground < 40%; no noxious weeds and < 5% non-native invasives. Sand dunes will tend to have a higher woody component. Sand Dunes will have a higher shrub component

Species	Variety	SYMBOL
Grasses		
Western wheatgrass (*Pascopyrum smithii*)	Rosana	PASM
Thickspike wheatgrass (*Elymus lanceolatus*)	Critana	ELLA3
Blowout grass (*Redfieldia flexuosa*)		REFL
Praire sandreed (*Calamovilfa longifolia*)	Goshen	CALO
Indian ricegrass (*Achnatherum hymenoides*)	Rimrock (Nez Par)	ACHY
Green needlegrass (*Nassella viridula*)		NAVI4
Needleandthread (*Hesperostipa comata*)		HECO
Mutton bluegrass (*Poa fendleriana*)		POFE
Sand dropseed (*Sporobolus cryptandrus*)	**Borden County**	**SPCR**
Canby bluegrass (*Poa secunda*)	Canbar	POSE
Galleta grass (*Pleuraphis jamesii*)	Viva	PLJA
Idaho fescue (*Festuca idahoensis*)	Nezperce/Joseph	FEID
Mountain brome (*Bromus marginatus*)	Garnet	BRMA4
Prairie Junegrass (*Koeleria macrantha*)		KOMA
Spike muhly (Muhlenbergia wrightii)	El Vado	MUWR
Shrubs		
Silver sagebrush (*Artemisia cana*)		ARCA13
Fourwing saltbush (*Atriplex canescens*)		ATCA2
Antelope bitterbrush (*Purshia tridentata*)		PUTR2
Winterfat (*Krascheninnikovia lanata*)	Open Range	KRLA
White sage (*Artemisia ludoviciana*)		ARLU
Spiny hopsage (*Grayia spinosa*)		GRSP
Big Sage (*Artemisia tridentata wyomingensis*)		ARTRW8
Basin Sage (*Artemisia tridentata tridentata*)		ARTRT
Forbs		
Firecracker Penstemon (*Penstemon eatonii*)		PEEA
Lewis' flax (*Linum lewsii*)	Appar	LILE
Rocky Mountain beeplant (*Cleome serrulata*)		CLSE
Western yarrow (*Achillea millefolium* L. var. *occidentalis*)		ACMI
Slimflower scurfpea (*Psoralidium tenuiflorum*)		PSTE5
Dotted gayfeather (*Liatris punctata*)		LIPU

WET ALKALINE/SALINE SITES - *characterized as a Gardner's saltbush /bunchgrass or greasewood community.* Includes Saline lowland, Saline upland, and Saline upland drained ESDs

Vegetative components, when generally undisturbed, for this ecological site: grasses 40-50%; forbs 5-10%; woody 45-65%; bare ground < 40%; no noxious weeds and < 5% non-native invasives. Note: Ripping the top soil on wet alkaline or saline sites can cause significant damage to future reclamation from soil mixing. Saline upland and Saline upland drained ESD's include: Indian ricegrass

Species	Variety	SYMBOL
Grasses		
Western wheatgrass (*Pascopyrum smithii*)	Rosana	PASM
Little bluegrass "Sandberg" (*Poa secunda*)	High plains	POSE
Alkali sacaton (*Sporobolus airoides*)		SPAI
Inland saltgrass (*Distichlis spicata*)		DIST
Basin wildrye (*Leymus cinereus*)	Trailhead, Magnar	LECI
Prairie cordgrass *(Spartina pectinata)*		SPPE
Slender wheatgrass (*Elymus trachycaulus)*	Prior (Revenue)	ELTR
Indian ricegrass (*Achnatherum hymenoides*)	Rimrock (Nez Par)	ACHY
Shrubs		
Fourwing saltbush (*Atriplex canescens*)	Wytana	ATCA2
Greasewood (*Sarcobatus vermiculatus)*		SAVE
Gardner's saltbush (*Atriplex gardneri*)		ATGA
Shadscale saltbush (*Atriplex confertifolia*)		ATCO
Forbs		
Textile onion (*Allium textile*)		ALTE
Desert biscuitroot *(Lomatium foeniculaceum)*		LOFO
Hoods phlox *(Phlox hoodii)*		PHHO

MOUNTAIN SHRUB SITES - *characterized as shrub community with deep loamy soils and greater than 14 inches of precipitation.*
Vegetative components, when generally undisturbed, for this ecological site: grasses 40%; forbs 20%; woody 40%; bare ground < 20%; no noxious weeds and < 5% non-native invasives.

Species	Variety	SYMBOL
Grasses		
Idaho fescue (*Festuca idahoensis*)		FEID
Green needlegrass (*Nassella viridula*)		NAVI4
Mountain brome (*Bromus marginatus*)	Garnet	BRMA
Oniongrass (*Melica bulbosa*)		MEBU
Basin wildrye (*Leymus cinereus*)	Trailhead	LECI
Bluebunch wheatgrass (*Pseudoroegneria spicata*)	Goldar (Secor)	PSSP6
Elk sedge (*Carex garberi*)		CAGA3
Shrubs		
Mountain sagebrush (*Artemisia tridentata vaseyana*)		ARTRV
Silver sagebrush (*Artemisia cana*)		ARCA
Antelope bitterbrush (*Purshia tridentata*)	Maybell	PUTR2
Serviceberry (*Amelanchier alnifolia*)		AMAL2
Chokecherry (*Prunus virginiana*)		PRVI
Snowberry (*Symphoricarpos oreophilus*) and/or (*S. albus*)	Maybell	SYOR2
Winterfat (*Krascheninnikovia lanata*)	Open Range	KRLA
Mountain mahogany (*Cercocarpus montanus*)	Montane	CEMO2
Forbs		
Arrowleaf balsamroot (*Balsamorhiza sagittata*)		BASA
Lewis' flax (*Linum lewsii*)	Appar	LILE
American vetch (*Vicia americana*)		VIAM
Lupine (*Lupinus sericeus*)		LUSE4
Blanketflower (*Gaillardia aristata*)		GAAR
Western yarrow (*Achillea millefolium* L. var. *occidentalis*)	Yakama	ACMIO
Firecracker penstemon (*Penstemon eatonii*)	Richfield	PEEA
Balsam groundsel (*Packera paupercula*)		PAPA20
Sulfur-flower buckwheat (*Eriogonum umbellatum*)		ERUM
Rocky Mountain penstemon-Bandera (*Penstemon strictus*)		PEST2

ATTACHMENT D-1.3
ROCK SPRINGS FIELD OFFICE APPROVED SEED MIXES

ROCK SPRINGS FIELD OFFICE SEED MIXES FOR TYPICAL UPLAND AND LOWLAND SITES

Note: These mixes are intended as an initial recommendation for the plan of development and will be adjusted as needed on a project-specific basis. They are only intended for areas within the Rock Springs Field Office. Introduced or non-native species are not to be used in seed mixes.

Geographic Area	Soil Type 7-9"and 10-14" Ppt Zone			
	Sandy	Clay	Lowlands	Mtn shrub
N. BAXTER-HIAWATHA		A		
BLUE FOREST		A		
NITCHIE GULCH-PINE CANYON	B	A	C	
ROCK SPRINGS-S. BAXTER-TABLE ROCK		A		
ASPEN MTN-HICKEY MTN-PINE MTN--LOWER ELEV	B	A	C	
WIND RIVER FRONT-PINE MTN LITTLE MTN--HIGHER ELEVATIONS				D

Seed mixes should be chosen based on precipitation zone, soil type and species present on-site prior to disturbance.

Big sagebrush and other specified shrubs which have high wildlife value will be planted in **big game winter range areas**.
Sagebrush debris bladed off the soil surface during project construction activities may be spread across the ROW in these areas to provide a seed source.

Planting will be done in the fall. Site preparation will consist of leaving a rough surface, which provides microsites where moisture catchment and wind protection will be maximized. Seeding will be accomplished either by seed drill (no more than 1/2" deep), or broadcast seeding. **Shrubs should be planted in separate, alternating rows with grasses and forbs.** Successful plantings of **antelope bitterbrush** have been obtained by seeding with shadscale and lightly raking into soil on suitable sites.

Seeds from a local source have the highest chance of success because of their adaptability and insect and disease resistance. If the project is planned more than one season in advance of construction, we recommend that seeds be collected from the site and used in reclamation. Otherwise, seeds must be bought from the closest source to the project area. Seeds used in reclamation must be CERTIFIED WEED-FREE. Seed tags and other verification must be sent to the authorizing BLM party for inspection.

Planting a mixture of species expedites the natural sequence of plant succesion. Variation in size and type of cover is required by big game, small mammals and birds. **Inclusion of broadleaf herbs with shrubs and grasses improves the forage production, herbage quality, biodiversity, and soil stability of treated sites.**

SEED MIX A--Loamy Clay

Grasses--USE ALL

Thickspike wheatgrass	6 LBS/ACRE
Indian ricegrass	2
Sandberg bluegrass or bluebunch wheatgrass	6
Bottlebrush squirreltail	2

Shrubs--USE TWO (IN WINTER RANGE--USE BIG SAGEBRUSH)

Basin or Wyoming big sagebrush	1 LBS/ACRE
shadscale (esp important on winter range)	1
winterfat	2
Gardners saltbush	2

Forbs--USE TWO

scarlet globemallow	1/2 LBS/ACRE EACH
lupine	
blue flax	1/4 LBS/ACRE
Rocky Mountain penstemon	

Globemallow is a native pioneer species; very drought tolerant; very successful in sagebrush areas; relished by antelope, deer and small mammals; maintains summer succulence for wildlife in arid areas; and produces large amounts of seed. Generally available.

Lupines are nitrogen fixers (soil builders); have the superior ability to establish and persist on harsh sites; and are important for deer and antelope (seed pods). Variety of species available.

Blue flax is a drought tolerant, very vigorous, highly competitive forb which is successful on well drained soils. Initiates growth in early spring, foliage highly palatable to livestock and wildlife; seeds eaten by birds and rodents. Available.

Rocky Mountain penstemon is an easily established rhizomatous forb with good stabilization value. The forage is palatable to antelope and deer.

SEED MIX B--Sandy

Grasses--USE ALL

Needle and thread grass	6 LBS/ACRE
Thickspike wheatgrass	6
Indian ricegrass	3
Bottlebrush squirreltail	2
Bluebunch wheatgrass	2

Shrubs--USE TWO

shadscale	1 LBS/ACRE
spiny hopsage	

Forbs--USE TWO

Northern sweetvetch	1/2 LBS/ACRE EACH
Rocky Mountain beeplant	
Louisiana (Prairie) sagebrush (Artemisia ludoviciana var ludoviciana)	

Northern sweetvetch is a nitrogen-fixing soil builder, drought tolerant, and highly palatable to big game and livestock. Good seed producer, well adapted. Several varieties available.

Rocky Mountain beeplant is a good pioneering species and short-term stabilizer, produces copious seeds, is attractive to small mammals, upland game birds and insects. Available.

Louisiana (prairie) sagebrush establishes quickly, does very well on coarse soils in sagebrush, rabbitbrush and juniper communities. Drought and cold tolerant. Used by sheep and mule deer. Serves as an excellent nurse crop. It is a very good non-leguminous nitrogen-fixer. Available.

SEED MIX C--Saline (alluvial bottoms and clay flats)

Grasses--USE ALL

Thickspike wheatgrass	6 LBS/ACRE
Western wheatgrass	6
Bottlebrush squirreltail	4
Indian ricegrass	2-3
Basin wildrye	2
Sandberg's bluegrass	2

Shrubs--USE TWO (IN WINTER RANGE USE WINTERFAT)

Black greasewood	2 LBS/ACRE EACH
Gardner's saltbush	2
winterfat	3
shadscale	2

Forbs--USE ONE

scarlet globemallow	1/2 LBS/ACRE EACH
blue flax	1/4

SEED MIX D--Mountain shrub (15-19"PPT ZONE)

Grasses--USE ALL	
Bluebunch wheatgrass	6 LBS/ACRE
Letterman needlegrass	6
Mountain brome	6
Canby bluegrass OR	4 LBS/ACRE EACH
Sandberg bluegrass OR	
prairie junegrass OR	
mutton bluegrass	
Shrubs--USE TWO (REPLACE SPECIES REMOVED)	
Mountain Big Sagebrush	1 LBS/ACRE
Mountain mahogany	3
Bitterbrush	3
Forbs--USE TWO	
Arrowleaf balsamroot	1 LBS/ACRE
Silky or mountain lupine	
Rocky Mountain penstemon	

Arrowleaf balsamroot is a drought tolerant, long-lived perennial. Its foliage provides important early spring forage, and is sought after by elk, deer and antelope. Seed should be covered to prevent loss to rodents.

Lupines are nitrogen fixers (soil builders); have the superior ability to establish and persist on harsh sites; and are important for deer and antelope (seed pods).

EXTREMELY HARSH SITES: **Western yarrow, Basin wildrye, Indian ricegrass, Mountain brome, Louisiana sagebrush, sulfur buckwheat (especially rocky sites)**. These species compete very well against invaders, grow under adverse conditions, and improve the soil conditions, but are rather site-specific. Therefore seed should be obtained as close to the site as possible. **Yarrow** is an especially aggressive species, so should be used sparingly, and only on extremely difficult sites.

References:

Nonleguminous forbs for rangeland sites. Shaw and Monsen in Managing Intermountain Rangelands-Improvement of Range and Wildlife Habitats. US Forest Service 1983.

Ecology and Culture of Selected Species Useful in Revegetating Disturbed Lands in the West. C. Wasser. Western Energy and Land Use Team, Office of Biological Services, US Fish and Wildlife Service. 1982

Plants and Treatment for Revegetation of Disturbed Sites in the Intermountain Area. Stephen B. Monsen and A. Perry Plummer. Chapter 8 in The Reclamation of Disturbed Arid Lands, ed. Robert Wright. University of New Mexico Press 1978.

American Wildlife and Plants: A Guide to Wildlife Food Habits. Martin, Zim and Nelson. Dover Publications 1951.

Seed catalogs from: Wind River Seed Company, Manderson, Wyoming and Granite Seed Company, Lehi, Utah. Mountain West Seeds, Cheyenne, Wyoming.

ATTACHMENT D-1.4
KEMMERER FIELD OFFICE APPROVED SEED MIXES

Table 5.2-1. Seed mix for Salt Desert Shrub Vegetation Type.

Species	Cultivar	Pure Live Seed; Pounds per acre
Western wheatgrass	'Rosana'	2.0
Indian ricegrass	'Nezpar'	2.0
Thickspike wheatgrass	'Critana'	1.0
Slender wheatgrass		1.0
Fourwing saltbush		2.0
Gardner's saltbush		2.0
Winterfat		1.0
Common yarrow		0.5
Scarlet globemallow		0.5
TOTAL		**12.0**

FROM RON MITCHELL – Summer 2010

Table 5.2-2. Seed mix for Grassland, Low Sagebrush, Wyoming Big Sagebrush and Basin Big Sagebrush Plant Communities.

Species	Cultivar	Pure Live Seed; Pounds per acre
Bluebunch wheatgrass	Goldar	4.0
Basin wildrye	Magnar	2.0
Thickspike wheatgrass	Critana	1.0
Western wheatgrass	Rosana	1.0
Indian ricegrass	Nezpar	2.0
Needle-and-thread		2.0
Wyoming big sagebrush		2.0
Winterfat		0.25
Scarlet globemallow		0.25
Fourwing saltbush		1.0
Lewis' flax		0.15
Yarrow		0.05
TOTAL		**15.7**

BEAR RIVER DIVIDE – from R. Mitchell 2010

Table 5.2-3. Seed mix for Mountain Big Sagebrush Plant Community.

Species	Cultivar	Pure Live Seed; Pounds per acre
Bluebunch wheatgrass	Goldar	4.0
Basin wildrye	Magnar	2.0
Thickspike wheatgrass	Critana	1.0
Western wheatgrass	Rosana	1.0
Indian ricegrass	Nezpar	2.0
Needle-and-thread		2.0
Mountain big sagebrush		2.0
Winterfat		0.25
Scarlet globemallow		0.25
Fourwing saltbush		1.0
Lewis' flax		0.15
TOTAL		**15.7**

ATTACHMENT D-1.5
BLM HIGH DESERT DISTRICT APPROVED SEED MIXES

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HIGH DESERT DISTRICT POTENTIAL RECLAMATION SPECIES

Successful use of a particular species is dependent on site specific soil texture, soil pH, precipitation, elevation, and the length of growing season. All species listed may not be commercially available but are present in High Desert District and could be collected from native seed. This list is not all inclusive and is subject to change based on additional data collection and analysis. All reclamation seed mixes must have prior approval of the Authorized Officer.

GRASSES

COMMON NAME	SCIENTIFIC NAME	Reclamation Variety
Alkali sacaton	Sporobolus airoides	Salado
Alkaligrass	Puccinellia nuttalliana	Fults
American sloughgrass	Beckmannia syzigachne	Egan
Basin wildrye	Leymus cinereus	Magnar/Trailhead
Beardless wheatgrass	Pseudoroegneria spicata	Whitmar
Blue grama	Bouteloua gracilis	Bad River
Blue wildrye	Elymus glaucus	Arlington
Bluebunch wheatgrass	Agropyron spicatum	Secar/P7/Anatone
Bluejoint reedgrass	Calamagrostis canadensis	Sourdough
Bottlebrush squirreltail	Elymus elymoides	Sand Hollow
Buffalograss	Buchloe dactyloides	Cody/Tatanka
Galleta grass	Pleuraphis jamesii	Viva
Green needlegrass	Nassella viridula	Lodorm
Idaho fescue	Festuca idahoensis	Nexperce/Joseph
Indian ricegrass	Achnatherum hymenoides	Rimrock/Nezpar
Inland saltgrass	Distichlis spicata	
Mountain brome	Bromus marginatus	Garnet
Muttongrass	Poa fendleriana	
Needle and thread	Hesperostipa comata	
Oniongrass	Melica bulbosa	
Prairie junegerass	Koeleria macrantha	
Prairie sandreed	Calamovilfa longifolia	Goshen
Sand bluestem	Andropogon hallii	
Sand dropseed	Sporobulus cryptandrus	Borden County
Sandberg/Canby bluegrass	Poa secunda	High Plains
Sandhill muhly	Muhlenbergia pungens	
Slender wheatgrass	Elymus trachycaulus	Pryor/San Luis
Spike muhly	Muhlenbergia wrightii	El Vado
Streambank wheatgrass	Elymus lanceolatus	Sodar
Thickspike wheatgrass	Elymus lanceolatus	CritanaBannock
Tufted hairgrass	Deschampsia caespitosa	Peru Creek
Western wheatgrass	Pascopyrum smithii	Rosana

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FORBS

COMMON NAME	SCIENTIFIC NAME	Reclamation Variety
American bistort	Polygonum bistortoides	
American vetch	Vicia americana	
Arrowleaf balsamroot	Balsamorhiza sagittata	
Ballhead waterleaf	Hydrophyllum capitatum	
Bastard draba milkvetch	Astragalus drabelliformis	
Bigseed biscuitroot	Lomatium macrocarpum	
Bluebells	Mertensia ciliata	
Blueleaf/Gray aster	Aster glaucodes	
Broadbeard beardtongue	Penstemon angustifolius	
Canby's biscuitroot	Lomatium canbyi	
Cinquefoil	Potentilla sp	
Common blanketflower	Gaillardia aristata	
Cushion buckwheat	Eriogonum ovalifolium	
Cutleaf balsamroot	Balsamorhiza macrophylla	
Cutleaf daisy	Erigeron compositus	
Eaton's fleabane	Erigeron eatonii	
False dandelion	Agoseris glauca	
Fernleaf biscuitroot	Lomatium dissectum	
Firecracker penstemon	Penstemon eatonii	Richfield
Foothil arnica	Arnica fulgens	
Fremont penstemon	Penstemon fremontii	
Golden banner	Thermopsis sp	
Gooseberryleaf globemallow	Sphaeralcea grossulariifolia	
Goosefoot violet	Viola purpurea	
Granite prickly phlox	Phlox pungens	
Great Basin lupine	Lupinus alpestris	
Groundsel	Senecio sp	
Hollyleaf clover	Trifolium gymnocarpon	
Hooker's evening primrose	Oenothera elata	
Largeflower hawksbeard	Crepis occidentalis	
Lewis/Prairie flax	Linum lewisii	
Longleaf phlox	Phlox longifolia	
Mat penstemon	Penstemon caespitosus	
Mule ears	Wyethia amplexicaulis	
Munro globemallow	Sphaeralcea munroana	
Native yarrow	Achillea millefolium	
Nettleleaf giant hyssop	Agastache urticifolia	
Nineleaf biscuitroot	Lomatium triternatum	
Northern/Utah sweetvetch	Hedysarum boreale	
Pacific/Western aster	Symphyotrichum ascendens	
Painted milkvetch	Astragalus ceramicus	
Pale evening primrose	Oenothera pallida	
Palmer's penstemon	Penstemon palmeri	
Parry's primrose	Primula parryi	

Paysons milkvetch	Astragalus paysonii	
Pincushion beardtongue	Penstemon procerus	
Plains spring parsley	Cymopterus acaulis	
Prairie aster	Symphyotrichum falcatum	
Prairie coneflower	Ratibida Raf.	
Prairie dandelion	Nothocalais sp	
Princes plume	Stanleya pinnata	
Purple coneflower	Echinacea purpurea	
Purple milkvetch	Astragalus agrestis	
Sagebrush buttercup	Ranunculus glaberrimus	
Sagebrush violet	Viola vallicola	
Sandwort	Arenaria sp	
Scarlet globemallow	Sphaeralcea coccinea	
Sego lilly	Calochortus nuttallii	
Showy goldeneye	Heliomeris multiflora	
Silky lupine	Lupinus sericeus	
Silverleaf phacelia	Phacelia hastata	
Silvery lupine	Lupinus argenteus	
Silvery primrose	Primula incana	
Slender buckwheat	Eriogonum microthecum	
Spreading/Carpet phlox	Phlox diffusa	
Sulfur buckwheat	Eriogonum umbellatum	
Sweet anise	Osmorhiza occidentalis	
Tailcup lupine	Lupinus caudatus	
Tapertip hawksbeard	Crepis acuminata	
Tapertip onion	Allium acuminatum	
Thickleaf beardtongue	Penstemon pachyphyllus	
Threetooth ragwort	Packera tridenticulata	
Violet prairie clover	Dalea purpurea	
Western snowberry	Symphoricarpos oreophilus	
Western stoneseed	Lithospermum ruderale	
White prairie clover	Dalea candida	
White sagebrush	Artemisia ludoviciana	
White sand verbena	Abronia mellifera	
Woody aster	Xylorhiza sp	
Wooly groundsel	Packera cana	
Wyeth biscuitroot	Lomatium ambiguum	
Wyeth buckwheat	Eriogonum heracleoides	

SHRUBS

COMMON NAME	SCIENTIFIC NAME	Reclamation Variety
Antelope bitterbrush	Purshia tridentata	
Basin big sagebrush	Artemisia tridentata tridentata	
Birdsfoot sage	Artemisia pedatifida	
Black sagebrush	Artemisia nova	
Broom snakeweed	Gutierrezia sarothrae	
Bud sagebrush	Picrothamnus desertorum	
Chokecherry	Prunus virginiana	
Currant	Ribes sp	
Fourwing saltbush	Atriplex canescens	Wytana
Gardner's saltbush	Atriplex gardneri	
Greasewood	Sarcobatus vermiculatus	
Horsebrush	Tetradymia canescens	
Indian paintbrush	Castilleja sp	
Low/Alkali sagebrush	Artemisia arbuscula	
Mountain big sage	Artemisia tridentata vaseyana	
Prairie sagewort	Artemisia frigida	
Rubber rabbitbrush	Ericameria nauseosa	
Serviceberry	Amelanchier alnifolia	
Shadscale	Atriplex confertifolia	
Silver buffaloberry	Shepherdia argentea	
Silver sagebrush	Artemisia cana	
Snowberry	Symphoricarpos oreophilus	
Spiny hopsage	Grayia spinosa	
Winterfat	Ceratoides lanata	Open Range
Wyoming big sagebrush	Artemisia tridentata wyomingensis	

COVER CROPS*

Sterile Triticale
Sterile rye
Sterile barley
Sterile wheat
Sterile millet
Sterile sorghum
Slender wheatgrass

* Sterile cover crop may be approved on a case-by-case basis. Decomposition of the cover crop may cause a nitrogen deficiency in subsequent seedings and it is recommended that all cover crops be plowed under prior to regular seeding activities.

ATTACHMENT D-1.6
CARIBOU-TARGHEE NATIONAL FOREST APPROVED SEED MIXES

Westside - recommended seed mix

Common Name	Species	% mix	Desired Seeds/square foot	Seeds/lb.	PLS pounds /acre
bluebunch wheatgrass Goldar	*Pseudorogneria spicata*	15.0%	6	140,000	1.8669
thickspike wheatgrass Bannock or Critana	*Elymus lanceolatus ssp. lanceolatus*	10.0%	4	154,000	1.1314
slender wheatgrass Pryor	*Elymus trachycaulus ssp. trachycaulus*	30.0%	12	159,000	3.2875
mountain brome Bromar or Garnet	*Bromus marginatus*	25.0%	10	64,000	6.8063
Great Basin wildrye Magnar or Trailhead	*Leymus cinereus*	10.0%	4	130,000	1.3403
Triticale QuickGuard®	*Triticum asetivum x Secale cereale*	10.0%	4	13,000	13.4031
	Grand Totals	**100.0%**	**40**		**27.84**

Note:
*Insist that seed purchased have a complete seed analysis tag or label on each bag including results of a current germination test. Federal and State laws mandate that seed cannot be legally sold without a completed analysis label.

*Order by PLS.

*Seed is not certified unless there is an offical tag attached to or printed on the bag that clearly states CERTIFIED SEED (Blue tag), REGISTERED SEED (purple tag) or FOUNDATION SEED (white tag). If the seed is from a wild collection or field grown native plant, the seed certification tags may state SOURCE IDENTIFIED SEED (yellow tag), SELECTED CLASS SEED (green tag) or TEST CLASS SEED (blue tag).

ATTACHMENT D-1.7
MEDICINE BOW-ROUTT NATIONAL FOREST
APPROVED SEED MIXES

Revegetation Seed Mixes
for
Medicine Bow-Routt National Forests
and
Thunder Basin National Grassland

February 2006

Prepared by the Rangeland Management/Botany Cadres

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1

Introduction

The following seed mixes comply with our revegetation guidelines and are offered for routine revegetation projects such as timber sale landings and skid trails, structural range improvements, wildfire rehabilitation, road obliteration, road maintenance activities, campsite rehabilitation, weed control efforts, etc. This seed mix guide is considered a work in progress and may be updated as we gather more information on what works best, or as seed for some native species becomes more readily available. At present, forbs and shrubs have been excluded from these seed mixes due to concerns about negative effects from introduction of non-local genetic material.

For revegetation projects covered by specific regulations (such as mined land reclamation) and for special projects such as restoration or improvement of TES species habitat, customized seed mixtures will likely be required and the appropriate specialists should be consulted.

Guidance for deciding how and when to actively revegetate disturbed sites is contained in our Proposed Guidelines for Revegetation for the Medicine Bow-Routt National Forests and Thunder Basin National Grasslands. It is filed electronically in: *fsfiles/unit/rr/2070_biological_diversity/forest_reveg_policy/2004_proposed_reveg_guidelines.*

2

Before selecting a seed mix for your project consider the following!

Do I really need to seed the site or will natural revegetation likely meet my goals? *Remember that even with certified noxious weed free seed or mulch, there is a risk of introducing weed species not currently found on or near the site. This includes cheatgrass, which is highly invasive, not listed as a noxious weed in most states, and a common contaminant of cultivated seed.*

Will a non-persistent annual cover crop meet my needs better than a mix of native perennial species? *Sometimes all you need to do is prevent erosion and discourage establishment of weeds until surrounding native species fill in the site. Cover crops can work well for this purpose, though we have relatively little experience with their use on our Forests.* ***See pages 12-13 for information on cover crops.***

How can I minimize unintended introduction of undesirable plant species, such as noxious weeds and other invasives when I seed an area? *All seed purchased should be "Certified Seed" (blue tagged) when it is a documented variety. If it is VNS*

seed (Variety Not Stated) it cannot be blue tagged as certified, but then the company should have tested it themselves and be able to state that it is noxious weed seed free, and also how much other weed seed it may have. Select the cleanest seed available.

Also, in most cases you should not fertilize your seeded site. The extra nutrients usually do not help native perennial grasses much (and can even be harmful to some), but often favor growth of invasive species.

Perennial Seed Mixes

The proportions of different species given in the following mixes provide for approximately equal number of seeds/acre for each species included in a seed mix. These proportions may be altered if a larger proportion of a particular species is desired or if the high cost of one or more species in the mix would make the mix prohibitively expensive. Also, a species may be dropped from the mix if it is unavailable or too expensive at the time of purchase, but forbs, shrubs or other grass or grasslike species should NOT be substituted without checking with the appropriate specialist.

#1 Mountain District Broad Spectrum Upland Mix* (Brush Creek/Hayden, Hahn's Peak/Bears Ears, Parks, and Yampa districts, and the Snowy Range portion of Laramie District)

***This is the only seed mix in this booklet that work well for partially shaded sites, such as skid trails, landings and roads in forest stands.**

Suggested for the following sites: disturbed ground in aspen or coniferous cover types; mesic to dry mountain meadows; sagebrush or mixed mountain shrub sites with at least moderately deep soils. It can be used in foothill, montane and subalpine sites that meet the above criteria.

Suggested seeding rate: 20-25 lbs/ac

Species	Percent of Mix by Weight
Big bluegrass (*Poa ampla*) or Canby bluegrass (*Poa canbyi*)	4
Mountain bromegrass (*Bromus marginatus*)	40
Blue wildrye (*Elymus glaucus*)	33
Slender wheatgrass (*Elymus trachycaulus*, formerly *Agropyron trachycaulum*)	23
Total	100

5

#2 Mountain District Shallow Soil Foothill/Montane Nonforested Upland Mix

(Brush Creek/Hayden, Hahn's Peak/Bears Ears, Parks, and Yampa districts and the Snowy Range portion of Laramie District)

Suggested for the following sites: shallow soil non-forested sites such as sagebrush or mixed mountain shrub on ridgetops or sideslopes.

Suggested seeding rate: 20-25 lbs/ac

Species	Percent of Mix by Weight
Sandberg bluegrass (*Poa secunda*), or Canby bluegrass (*Poa canbyi*)	5
Prairie junegrass (*Koeleria macrantha*, formerly *Koeleria cristata*)	2
Bottlebrush squirreltail (*Elymus elymoides*, formerly *Sitanion hystrix*)	22
Western wheatgrass (*Pascopyrum smithii*, formerly *Apropyron smithii*)	40
Bluebunch wheatgrass (*Pseudoroegneria spicata*)	31
Total	100

6

#3 Laramie Peak/Pole Mtn. Upland Mix

Suggested seeding rate: 12-15 lbs/acre

Species	Percent of Mix by Weight
Western Wheatgrass (*Pascopyrum smithii*, formerly *Apropyron smithii*)	48
Prairie junegrass (*Koeleria macrantha*, formerly *Koeleria cristata*)	2
Bluebunch wheatgrass (*Pseudoroegneria spicata*, formerly *Agropyron spicatum*)	39
Idaho fescue (*Festuca idahoensis*)	11
Total	100

7

#4 Thunder Basin National Grassland Loamy or Clayey Site Upland Mix

Suggested seeding rate: 12-15 lbs/acre

Species	Percent of Mix by Weight
Western Wheatgrass (*Pascopyrum smithii*, formerly *Apropyron smithii*), suggested variety Rosanna	43
Green needlegrass (*Nassella viridula*, formerly *Stipa viridula*), suggested variety Lodorm	26
Slender wheatgrass (*Elymus trachycaulus*, formerly *Agropyron trachycaulum*)	29
Prairie junegrass (*Koeleria macrantha*, formerly *Koeleria cristata*)	2
Total	100

8

#5 Thunder Basin National Grassland Sandy Site Upland Mix

Suggested seeding rate: 12-15 lbs/acre

Species	Percent of Mix by Weight
Western Wheatgrass (*Pascopyrum smithii*, formerly *Apropyron smithii*), suggested variety Rosanna	32
Prairie sandreed *(Calamovilfa longifolia)* suggested variety Goshen	13
Indian ricegrass (*Achnatherum hymenoides*, formerly *Oryzopsis hymenoides*), suggested variety Paloma or Rimrock	25
Needle and thread (*Hesperostipa comata*, formerly *Stipa comata*)	30

#6 Alpine Meadow Mix

Suggested for the following sites: moderately moist alpine meadows and slopes. (for soils that are wet for a majority of the growing season see the Riparian Seed Mix, page 10)

Suggested seeding rate: 10-15 lbs/ac

Species	Percent of Mix by Weight
Alpine timothy (*Phleum alpinum*)	40
Alpine bluegrass (*Poa alpina*)	40
Tufted hairgrass (*Deschampsia cespitosa*)	20

#7 Riparian Area/Wetland Seed Mix

Suggested for the following sites: wet riparian sites with a high water table, such as the greenline along streams, lake margins, and wetlands. It is **not** suitable for dry terraces that may be along a stream but are high enough above the water table to have dry soils for much of the growing season. For such sites, seed mix #1 would be more appropriate.

Suggested seeding rate: 3 lbs/acre (this would be about 70-90 seeds/square foot, as these species all have very small seeds)

Species	Percent of Mix by Weight
Nebraska sedge (*Carex nebrascensis*)	67
Tufted hairgrass (*Deschampsia cespitosa*)	14
Baltic rush (*Juncus balticus*)	3
Bluejoint reedgrass (*Calamagrostis canadensis*)	16

See the note regarding riparian revegetation on the following page!

Note: Many disturbed sites in riparian areas revegetate well naturally due to the availability of moisture through most or all of the growing season. Also, many native riparian species are rhizomatous and will readily recolonize the disturbed area from the sides. For this reason, you may not need to seed such sites. Also, consider the possibility of covering small sites with mature vegetation hand cut from riparian vegetation nearby. This would provide both mulch and locally adapted native seed. Unique wetlands such as fens and peatlands often contain rare plant species and should not be seeded without first consulting a Forest botanist or ecologist.

Annual cover crops

It is acceptable to use a sterile hybrid or short-lived annual cover crops either instead of or in addition to the native seed mixes offered in this guide. These species can provide quick soil stabilization and produce a lot of plant litter to help keep weeds from becoming established. The litter layer can, however, slow establishment of native species in some cases. Cover crops have not been widely used on this Forest/Grassland, so we have little specific information on how well they work here. We can fine tune where/when/if use of these annuals is desirable if field units monitor and share their results. These species also have the advantage of being widely available and relatively low in cost. Some suitable non-persistent species include:

Cultivated weed-free oats (*Avena sativa*) - for sites below 7500 feet in elevation; plant in spring in areas where winters are long.

Cultivated weed-free barley (*Hordeum vulgare*) - for sites above 7500 feet in elevation; may plant spring or fall; better adapted to alkaline or saline soils than oats.

Cultivated weed-free soft white winter wheat (a variety of *Triticum aestivum*) - may plant spring or fall, ***BUT*** *should not be used in areas where farmers/ranchers are growing commercial wheat crops nearby due to cross pollination considerations.*

Regreen (*Triticum aestivum x Elytrigia elongata*) - a sterile hybrid; a good short-term cover crop, but generally more expensive than the common cereal grains listed above.

Triticale (*Triticum aestivum x Secale cereale*) - a hybrid, good as a short term cover crop or nurse crop for slower establishing perennials; but, like Regreen, more expensive than the cereal grains.

For best results with broadcast seeding, the seeding rate for these cover crops should be 40-45 lbs/acre. If mixed with perennial grass seed to serve as a nurse crop, the number of pounds per acre should be reduced to 15-20 lbs/acre.

Regional Seed Suppliers

Granite Seed
1697 W. 2100 North
Lehi, UT 84043
801 462-8483
FAX: 801 768-3967
www.graniteseed.com

Pawnee Buttes Seed, Inc.
P.O. Box 100
Greeley, CO 80632
800 782-5947
FAX: 970 356-7263
www.pawneebuttesseed.com

Sharp Brothers Seed Co., Inc.
104 E. 4th Street Road
Greeley, CO 80631
800 421-4234
FAX: 970 356-1267
www.sharpseed.com

Wind River Seed
3075 Lane 51 ½
Manderson, WY 82432
307 568-3361
FAX: 307 568-3364
www.windriverseed.com

APPENDIX E
FRAMEWORK NOXIOUS WEED PLAN

Appendix E

Framework Noxious Weed Plan

Gateway West Transmission Line Project

Prepared by:

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August 15, 2013

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1.0 INTRODUCTION

1.1 Background

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion of three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD), applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Noxious Weed Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

The format and content of this Plan are based on the principles and procedures outlined in the BLM Integrated Weed Management Manual 9015 (1992) and the USFS Noxious Weed Management Manual 2080 (USFS 1995). This Plan includes a discussion of 1) the Plan purpose, goals, and objectives, 2) the regulatory framework, 3) the noxious weed inventory, 4) noxious weed management practices, 5) monitoring, and 6) the use of pesticides.

Measures to inventory, prevent, and control noxious weeds are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Noxious Weed Plan, including documenting results of the preconstruction surveys, mapping noxious weed and invasive species infestations within areas to be disturbed, documentation of existing infestations adjacent to the survey area, providing a detailed control methodology for each noxious weed and invasive species, and mapping areas subject to preconstruction weed treatment. The Construction Contractor will also be responsible for reporting noxious weeds and invasive plants identified during preconstruction surveys to the applicable land-managing agencies, and submitting Pesticide Use Proposals (PUPs) prior to weed treatment on BLM or USFS lands.

1.2 Purpose

Noxious weed is a legal term meaning any plant officially designated or declared by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Sheley and Petroff 1999). The more general term *invasive species* refers to species that are non-native to the ecosystem under consideration and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health (NISIC 2013). Invasive plant species include those legally designated as noxious, as well as additional species that may be considered noxious in some areas but not others. Noxious weeds and invasive plants are opportunistic plant species that readily flourish in disturbed areas, are difficult to control and, thereby, can compete with and/or prevent native plant species from re-establishing. Soil disturbances, such as those caused by the construction, maintenance, and/or operation of the Project, could result in the establishment of new populations and spread of existing populations of noxious weeds and invasive plant species in and adjacent to the Project right-of-way (ROW).

The purpose of this Framework Noxious Weed Plan is to provide methods to prevent and control the potential occurrence and infestation of noxious weeds and invasive plants during and following construction of the Project. It is the responsibility of the Companies and/or the Construction Contractor, working in coordination with the Compliance Inspection Contractor (CIC) and applicable land management agencies, to ensure noxious weeds and invasive plants are identified and controlled during the construction, operation, and maintenance of Project facilities and to ensure all federal, state, county, and other local requirements are satisfied.

1.3 Goals and Objectives

The goal of this Plan is to implement prevention, early detection, containment, and control of noxious weeds and invasive plants during Project construction, operation, and maintenance. Information gathered during preconstruction surveys and provided by the BLM, USFS, BOR, states of Idaho and Wyoming, Wyoming Weed and Pest Districts, Idaho County Weed Superintendents, and Idaho Cooperative Weed Management Areas (CWMAs) will be used to monitor, prevent, and control the spread of noxious weeds and invasive plants during construction, operation and maintenance of the Project. General preventive and control measures, as well as specific environmental protection measures (EPMs), are described in Section 4.0 of this Plan.

The objectives of this Plan will be to prevent and control the spread of new infestations of noxious weeds and invasive plants resulting from the Companies' activities. The Companies are only responsible for the control of noxious weeds and invasive plants that are a result of surface-disturbing construction-, operation-, or maintenance-related activities. The Companies are not responsible for noxious weeds and invasive plants that occur adjacent to Project areas or for controlling or eradicating infestations of noxious weeds and invasive plants in the Project area that were present prior to the Project. However, preconstruction treatments may be conducted at the Construction Contractor's discretion to minimize the spread of existing infestations through Project activities, where applicable and as agreed upon with the land management agency or landowner.

2.0 REGULATORY FRAMEWORK

The following provides a brief overview of federal and state legislation and regulatory compliance applicable to noxious weeds and invasive plants in the Project area that have been considered in the development of this Plan. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined in consultation with applicable agencies, including the BLM, BOR, USFS, Wyoming Weed and Pest Districts, and Idaho County Weed Superintendents and CWMAs, within the Project area.

2.1 Wyoming Weed and Pest Control Act

The purpose of the Wyoming Weed and Pest Control Act (Wyoming Statute Title 11; Chapter 5) is to control designated and declared weeds and pests in the State of Wyoming. As defined under the act, a "designated noxious weed" means a plant species having seeds or other plant parts determined to be detrimental to the general health or welfare of the state based upon the following: 1) has demonstrated the ability to aggressively invade native plant communities and agricultural crops; 2) is injurious or poisonous to livestock; 3) is a carrier of disease or parasites; 4) or can, by virtue of either its direct or indirect effect, negatively impact management of agricultural or natural ecosystems. A "declared weed" is defined as "any plant species which the board and the Wyoming Weed and Pest Council have found, either by virtue of its direct or indirect effect to negatively impact management of agricultural or natural ecosystems, or as a carrier of disease or parasites, to be detrimental to the general welfare of persons residing within a district." The Wyoming Weed and Pest Council comprises 23 Weed and Pest Districts that are associated with the boundaries of each county. Weeds are designated by the Board of Agriculture in conjunction with the Wyoming Weed and Pest Council or by emergency declaration by the Director of the Department of Agriculture.

2.2 Idaho Noxious Weed Law

The Idaho State Department of Agriculture (ISDA) regulates noxious weeds under Idaho Code Title 22, Chapter 24, Noxious Weeds, which mandates that all landowners will control noxious weeds on their land and property. This statute dictates that noxious weed control must be for prevention, eradication, rehabilitation, control, or containment

efforts. However, areas may be modified from the eradication requirement if the landowner is a participant in a county-approved weed management plan or county-approved cooperative weed management area. Under this statute (Idaho Code 22-2401–22-2413), a noxious weed is defined as "any plant having the potential to cause injury to public health, crops, livestock, land or other property; and which is designated as noxious by the Director of the Department of Agriculture." The ISDA is responsible for administration of the State Noxious Weed Law. In addition to county control of noxious weeds, Idaho has over 30 CWMAs where landowners and land managers work cooperatively to control noxious weeds. Idaho's noxious weeds are divided into three categories: Statewide Early Detection and Rapid Response (EDRR) Noxious Weed List, Statewide Control Noxious Weed List, and Statewide Containment Noxious Weed List (ISDA 2013).

2.3 USFS Manual 2080

USFS Manual 2080 directs each Forest Supervisor to manage noxious weeds on national forest system lands to achieve goals and objectives identified in forest land and resource management plans. Per the manual, the USFS will determine the risk of spreading noxious weeds associated with proposed USFS ground-disturbing activities and must identify and implement control measures for moderate to high risk activities in the USFS project decision document. USFS Manual 2080 also authorizes contract and permit clauses to prevent the introduction or spread of noxious weeds by contractors or permittees, and requires weed prevention provisions to be included in all special use permits, road use permits, and easements.

2.4 BLM Manual 9015

The BLM defines a noxious weed as "a plant that interferes with management objectives for a given area of land at a given point in time." BLM Manual 9015 directs the BLM to manage noxious weeds and undesirable plants on BLM lands by preventing establishment and spread of new infestations, reducing existing population levels, and managing and controlling existing stands. Required management for ground-disturbing actions includes determining the risk of spreading noxious weeds associated with the Project and ensuring contracts contain provisions which hold contractors responsible for the prevention and control of noxious weeds caused by their operations if the activity is determined to be moderate to high risk.

2.5 BOR Reclamation Manual

The BOR is responsible for identification and proper management of pests on BOR lands in accordance with federal, state, and local policies, laws, and standards. The BOR's Reclamation Manual (BOR 1996a, 1996b) includes standards and directives for pest management and Integrated Pest Management (Reclamation Manual ENV-01). Additionally, the Department of Interior (DOI) Departmental Manual (609 DM 1; DOI 1995) states that "it is the DOI's policy to control undesirable plants on the lands, waters, or facilities under its jurisdiction to the extent economically practicable and as needed for resource/environmental protection and enhancement, as well as the accomplishment of resource management objectives and the protection of human

health." This manual also provides directives and standards for control of undesirable plants and implementation of Integrated Pest Management programs on DOI lands including BOR land. In keeping with this policy, the use of Integrated Pest Management (IPM) techniques is emphasized. These techniques combine the use of chemical controls (pesticides), mechanical controls (mowing, pulling), environmental controls (cultural methods), and biological controls (insects).

2.6 Federal Noxious Weed Act of 1974 (as amended 1990)

The Federal Noxious Weed Act (7 United States Code 2801-2813) defines a noxious weed as "a plant which is of foreign origin, is new to, or is not widely prevalent in the United States, and can directly or indirectly injure crops or other useful plants, livestock, or the fish and wildlife resources of the United States, or the public health." This act directs each federal agency to develop and coordinate a management program for control of undesirable plants on federal lands under the agency's jurisdiction.

3.0 NOXIOUS WEEDS IN THE PROJECT AREA

The Wyoming Weed and Pest Council and the ISDA have identified noxious weeds of concern to the states of Wyoming and Idaho, some of which have the potential to occur within the Project ROW. Table 3-1 contains a list of the noxious weed species known or expected to occur within the Project area based on their recorded presence in the counties where the Project is located. This list is based primarily on information gained from publicly available sources, including Wyoming Weed and Pest Council weed distribution maps (Wyoming Weed and Pest Council 2013c), Idaho's 64 Noxious Weeds (ISDA 2013), the INVADERS database (University of Missoula-Montana 2013), and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) PLANTS database (NRCS 2013). Additional information was also gained through direct coordination with county weed districts. The BLM, BOR, and USFS use the most current Idaho and Wyoming state noxious weed lists for managing weeds and invasive species on federal lands.

3.1 Wyoming Noxious Weed Lists

The State of Wyoming has designated 26 plant species as noxious weeds (Wyoming Weed and Pest Council 2013a). All 26 of these designated species have the potential to occur within the Project area (Table 3-1). Additionally, each weed district, which, as stated above, corresponds to county boundaries, can declare additional weed species for their district. An additional 43 plant species are listed as "declared weeds" in counties crossed by the Project in Segment D (Wyoming Weed and Pest Council 2013b).

3.2 Idaho Noxious Weed List

The ISDA has designated 64 plant species as noxious in the State of Idaho. Idaho's noxious weeds are divided into three categories (ISDA 2013; Idaho Administrative Rules 02.06.22):

- Statewide EDRR List: If weeds on this list are identified, they will be reported to ISDA within 10 days and eradicated in the same growing season as identified.
- Statewide Control List: This list contains species that are known to exist throughout the state. When identified, a control plan will be developed by the county, with active control methods to be employed in no more than 5 years.
- Statewide Containment List: This list contains species that are known to exist throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding populations, while known populations may be managed by any approved weed control methodology, as determined by the county.

Thirty-six of the Idaho State designated noxious weed species have the potential to occur within Segment D of the Project (Table 3-1). While Idaho State management priorities are as outlined above, all noxious weeds in the Project area will be treated as outlined in this Plan.

Table 3-1. Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area

Common Name	Scientific Name	Invasive Non-native Species?[1/]	Listed as Noxious[2/]			Segments in Which Known or Likely to Occur[3/]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4/]	Wyoming	Idaho
Species on Wyoming Designated or Declared List and/or Idaho Noxious Weed List							
Black henbane	*Hyoscyamus niger*	Yes	–	Converse, Carbon, Lincoln, Natrona, Sweetwater	Control	1W, 2, 3, 4	4
Buffalobur	*Solanum rostratum*	Native	–	Converse, Natrona	Control	1W, 2, 3, 4	4
Canada thistle	*Cirsium arvense*	Yes	X	–	Containment	1W, 2, 3, 4	4
Common burdock	*Arctium minus*	Yes	X	–	–	1W, 2, 4	4
Common crupina	*Crupina vulgaris*	Yes	–	Converse	Control	–	–
Common reed	*Phragmites australis*	Yes/Native[5/]	–	–	Control	1W, 3, 4	4
Common St. Johnswort	*Hypericum perforatum*	Yes	X	–	–	4	–
Common Tansy	*Tanacetum vulgare*	Yes	X	–	–	1W, 2, 4	4
Curlyleaf pondweed	*Potamogeton crispus*	Yes	–	–	Containment	3	4
Dalmatian toadflax	*Linaria dalmatica*	Yes	X	–	Containment	1W, 2, 3, 4	4
Diffuse knapweed	*Centaurea diffusa*	Yes	X	–	Containment	1W, 2, 3, 4	4
Dyer's woad	*Isatis tinctoria*	Yes	X	–	Control	1W, 2, 3, 4	4
Field bindweed	*Convolvulus arvensis*	Yes	X	–	Containment	1W, 2, 3, 4	4
Hairy whitetop, Hoary cress	*Cardaria pubescens*	Yes	X	–	–	1W, 2, 3, 4	4
Houndstongue	*Cynoglossum officinale*	Yes	X	–	Containment	1W, 2, 4	4
Japanese knotweed	*Polygonum cuspidatum*	Yes	–	–	Control	–	4
Jointed goatgrass	*Aegilops cylindrica*	Yes	–	Converse	Containment	1W	4
Leafy spurge	*Euphorbia esula*	Yes	X	–	Containment	1W, 2, 3, 4	4
Musk thistle	*Carduus nutans*	Yes	X	–	Control	1W, 2, 3, 4	4
Orange hawkweed	*Hieracium aurantiacum*	Yes	–	Converse	Control	–	4
Oxeye daisy	*Leucanthemum vulgare*	Yes	X	–	Containment	1W, 2, 4	4

Table 3-1. Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area (continued)

Common Name	Scientific Name	Non-native Invasive species?[1/]	Listed as Noxious[2/]			Segments in Which Known or Likely to Occur[3/]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4/]	Wyoming	Idaho
Perennial pepperweed	*Lepidium latifolium*	Yes	X	–	Containment	1W, 2, 3, 4	4
Perennial sowthistle	*Sonchus arvensis*	Yes	X	–	Control	1W, 2, 3, 4	4
Plumeless thistle	*Carduus acanthoides*	Yes	X	–	Containment	1W, 2	–
Poison hemlock	*Conium maculatum*	Yes	–	Converse, Lincoln	Containment	1W, 2	4
Puncture vine	*Tribulus terrestris*	Yes	–	Converse, Natrona	Containment	1W, 2	4
Purple loosestrife	*Lythrum salicaria*	Yes	X	–	Containment	3	4
Quackgrass	*Elymus* (*Agropyron*) *repens*	Yes	X	–	–	1W, 2, 3, 4	4
Rush skeletonweed	*Chondrilla juncea*	Yes	–	Converse	Containment	4	–
Russian knapweed	*Acroptilon repens*	Yes	X	–	Control	1W, 2, 3, 4	4
Russian olive	*Elaeagnus angustifolia*	Yes	X	–	–	1W, 2, 3	4
Salt cedar, tamarisk	*Tamarix* spp.	Yes	X	–	Containment	1W, 2, 3, 4	4
Scotch broom	*Cytisus scoparius*	Yes	–	Converse	Control	–	4
Scotch thistle	*Onopordum acanthium*	Yes	X	–	Containment	1W, 2, 3, 4	4
Skeletonleaf bursage	*Ambrosia tomentosa*	Yes	X	–	–	1W, 2, 3, 4	–
Spotted knapweed	*Centaurea stoebe* ssp. *micranthos* (*C. maculosa*)	Yes	X	–	Containment	1W, 2, 3, 4	4
Syrian beancaper	*Zygophyllum fabago*	Yes	–	Converse	EDRR	–	–
Tansy ragwort	*Senecio jacobaea*	Yes	–	Converse	Containment	–	4
White bryony	*Bryonia alba*	Yes	–	–	Containment	–	4
Whitetop, hoary cress	*Cardaria draba*	Yes	X	–	Containment	1W, 2, 3, 4	4
Yellow flag iris	*Iris pseudacorus*	Yes	–	–	Containment	–	4
Yellow starthistle	*Centaurea solstitialis*	Yes	–	Natrona	Containment	–	4
Yellow toadflax	*Linaria vulgaris*	Yes	X	–	Containment	1W, 2, 4	4

Table 3-1. Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area (continued)

Common Name	Scientific Name	Non-native Invasive species?[1/]	Listed as Noxious[2/]			Segments in Which Known or Likely to Occur[3/]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4/]	Wyoming	Idaho
Species on Wyoming Declared List							
Absinth wormwood	*Artemisia absinthium*	Yes	–	Converse	–	1W	–
Baby's breath	*Gypsophila paniculata*	Yes	–	Converse	–	–	–
Black medic	*Medicago lupulina*	Yes	–	Natrona	–	1W, 2, 3, 4	4
Bull thistle	*Cirsium vulgare*	Yes	–	Converse, Lincoln	–	1W, 2, 3, 4	4
Bur buttercup	*Ranunculus testiculatus* (*Ceratocephala testiculata*)	Yes	–	Converse	–	1W, 2, 3, 4	4
Cheatgrass/downy brome	*Bromus tectorum*	Yes	–	Converse, Natrona	–	1W, 2, 3, 4	4
Chicory	*Cichorium intybus*	Yes	–	Converse	–	1W	4
Common cocklebur	*Xanthium strumarium*	Yes	–	Carbon, Converse	–	1W, 2, 3, 4	4
Common mullein	*Verbascum thapsus*	Yes	–	Converse, Lincoln	–	1W, 2, 3, 4	4
Common sunflower	*Helianthus annuus*	Native	–	Converse	–	1W	–
Curly dock	*Rumex crispus*	Yes	–	Converse	–	1W, 2, 3, 4	4
Curlycup gumweed	*Grindelia squarrosa*	Native	–	Converse, Natrona	–	1W	–
Dames rocket	*Hesperis matronalis*	Yes	–	Converse	–	1W, 2, 3, 4	4
Foxtail barley	*Hordeum jubatum*	Native	–	Natrona, Sweetwater	–	1W, 2, 3, 4	–
Geyer larkspur	*Delphinium geyeri*	Native	–	Carbon, Converse	–	1W, 2, 3, 4	–
Goatsrue	*Galega officinalis*	Yes	–	Converse	–	–	–
Gorse	*Ulex europaeus*	Yes	–	Converse	–	–	–
Halogeton	*Halogeton glomeratus*	Yes	–	Carbon, Converse, Natrona	–	1W, 2, 3, 4	–
Iberian starthistle	*Centaurea iberica*	Yes	–	Converse	–	1W	–
Italian thistle	*Carduus pycnocephalus*	Yes	–	Converse	–	–	–

Table 3-1. Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area (continued)

Common Name	Scientific Name	Non-native Invasive species?[1/]	Listed as Noxious[2/]			Segments in Which Known or Likely to Occur[3/]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4/]	Wyoming	Idaho
Japanese brome	*Bromus japonicus*	Yes	–	–	–	1W, 2, 3, 4	4
Lady's bedstraw	*Galium verum*	Yes	–	Sweetwater	–	2, 3, 4	–
Meadow knapweed	*Centaurea nigrescens* (*C. pratensis*)	Yes	–	Converse	–	–	–
Medusahead	*Taeniatherum caput-medusae*	Yes	–	Converse	–	–	–
Mountain thermopsis	*Thermopsis montana*	Native	–	Sweetwater	–	3, 4	–
Musk mustard, blue mustard	*Chorispora tenella*	Yes	–	Converse	–	1W, 2, 3, 4	All
Plains pricklypear	*Opuntia polyacantha*	Native	–	Carbon	–	1W, 2, 3	–
Purple starthistle	*Centaurea calcitrapa*	Yes	–	Converse	–	–	–
Redstem filaree	*Erodium cicutarium*	Yes	–	Converse	–	–	4
Sandbur	*Cenchrus* (*incertus*) *spinifex*	Native	–	Converse	–	–	–
Scentless chamomile	*Tripleurospermum inodorum* (*Matricaria perforata*)	Yes	–	Converse	–	1W, 2, 3, 4	–
Showy milkweed	*Asclepias speciosa*	Native	–	Converse, Natrona	–	1W, 2, 3, 4	–
Squarrose knapweed	*Centaurea virgata*	Yes	–	Converse	–	–	–
Sulfur cinquefoil	*Potentilla recta*	Yes	–	Converse	–	–	4
Teasel	*Dipsacus fullonum*	Yes	–	Converse		–	4
Wayleaf thistle	*Cirsium undulatum*	Native	–	Converse	–	1W, 2, 3, 4	–
Western sticktight	*Lappula occidentalis*	Native	–	Converse	–	1W, 2, 3, 4	–
Western water hemlock	*Cicuta douglasii*	Native	–	Lincoln	–	–	–
Wild licorice	*Glycyrrhiza lepidota*	Native	–	Converse, Natrona, Sweetwater	–	1W, 2, 3, 4	–
Wild oats	*Avena fatua*	Yes	–	Lincoln	–	1W, 2, 3, 4	4
Wyeth's lupine	*Lupinus wyethii*	Native	–	Carbon,	–	1W, 2, 4	–

Table 3-1. Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area (continued)

Common Name	Scientific Name	Non-native Invasive species?[1/]	Listed as Noxious[2/]			Segments in Which Known or Likely to Occur[3/]	
			State of Wyoming (Designated)	Wyoming Counties (Declared)	State of Idaho[4/]	Wyoming	Idaho
Yellow hawkweed	*Hieracium fendleri*	Native	–	Converse	–	–	–

1/ As included in INVADERS database (University of Montana-Missoula 2013).
2/ Source for status: ISDA 2013; Wyoming Weed and Pest Council 2013a and 2013b. ”—“= not listed.
3/ Distribution based on INVADERS database (University of Montana-Missoula 2013), PLANTS database (NRCS 2013), Wyoming Noxious Weed Distribution Maps (Wyoming Weed and Pest Council 2013a) and ISDA (2013). Distribution of native species (with the exception of buffalobur) is only shown for Wyoming counties where listed as noxious.
4/ Idaho listing categories are explained in text.
5/ Both native and non-native lineages of this species exist in Idaho and Wyoming. The non-native form is considered invasive and is listed as noxious in Idaho (Swearingen and Saltonstall 2010).

4.0 NOXIOUS WEED AND INVASIVE PLANT MANAGEMENT

Noxious weeds and invasive plants will be monitored and controlled during both construction and operation of the Project. The Companies will eradicate any new population that is demonstrated to be the result of Project construction, operation, or maintenance (i.e., a new infestation in an area disturbed by Project activities that cannot be attributed to adjacent existing infestations or introduction by a source outside the control of the Companies).

If construction, operation, and/or maintenance of the Project cause an existing noxious weed or invasive plant infestation to exceed the extent identified and delineated within areas subject to disturbance during preconstruction surveys, the Companies will be required to monitor and control the infestation. However, the Companies will not be responsible for eradication of pre-existing noxious weed and invasive plant populations outside of Project-related disturbance areas, unless done so at the Companies' or Construction Contractor's discretion to minimize the spread of existing infestations through Project activities, where applicable and as agreed upon with the land management agency and/or landowner. In addition, the Companies will not be responsible for noxious weeds and invasive plants introduced into the Project area by activities other than Project construction, operation, and maintenance (e.g., recreational use, grazing, other construction projects, etc.); natural occurrences (e.g., fire); noxious weeds and invasive plants outside the Project ROW; or noxious weeds and invasive plants along existing access roads not improved by the Project.

This section of the Plan describes the steps the Companies will take in preventing and controlling establishment and spread of noxious weed and invasive plant species as a result of Project activities. The management of noxious weeds and invasive plants will be considered throughout all stages of the Project and will include:

- Educating all construction personnel regarding locations of noxious weed and invasive plant infestations and the importance of noxious weed preventive measures and treatment methods.
- Implementing applicable environmental protection measures (EPMs) to prevent the spread of noxious weeds and invasive plants during construction, operation, and maintenance activities.
- Treating noxious weed and invasive plant infestations both before and after Project construction.

The following is a description of the measures that will be implemented for noxious weed and invasive plant management. Weed control and prevention measures shall adhere to all agency standards and guidelines. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

4.1 Education and Personnel Requirements

As part of start-up activities, and to help facilitate the avoidance of infestations and identification of new infestations, the Construction Contractor will provide information and training to all construction personnel regarding noxious weed and invasive plant

identification and management. The importance of preventing the spread of noxious weeds and invasive plants in areas not currently infested, and controlling the proliferation of noxious weeds and invasive plants already present in the Project area, will be emphasized.

REC-1 The Companies' personnel and their contractor will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.

The Construction Contractor will ensure that weed management actions will be carried out by specialists with the following qualifications:

- Training and experience in native plant taxonomy/identification;
- Training and experience in field ecology and plant community mapping;
- Possession of a Professional Applicator's License for pesticides from the Idaho Department of Agriculture and/or Commercial Applicator's License from the Wyoming Department of Agriculture (if chemical control is used).
- Training in weed management or IPM with an emphasis in weeds;
- Experience in coordination with agency and private landowners; and,
- Recent attendance at a BLM-approved noxious weed training course.

4.2 Preconstruction Surveys and Delineation of Infestations

The Construction Contractor will be responsible for performing a noxious weed and invasive plant inventory in the Project area prior to construction. This inventory will include 1) identification of weed species designated as noxious by the states of Wyoming (Wyoming Weed and Pest Council 2013a) and Idaho (ISDA 2013) that have the potential to occur within the Project area; 2) background review of information regarding known noxious weed and invasive plant populations in the Project area (see Table 3-1 – Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area), including previously mapped populations (Wyoming Weed and Pest Council 2013c, ISDA 2013); and 3) preconstruction surveys within Project areas that will be subject to ground disturbance for noxious weeds and invasive plants listed in Table 3-1 – Wyoming and Idaho State Listed Noxious Weed Species Potentially Present in the Project Area.

The preconstruction surveys will be conducted using the protocol established by the BLM's Integrated Weed Management Manual 9015 (BLM 1992) and as required by the BOR, USFS, or state Weed Districts or Management Areas. During the noxious weed and invasive plant inventory, data will also be collected to inform reclamation activities as described in Appendix D – Framework Reclamation Plan, including field verification of vegetation alliances and establishment of reclamation monitoring sites.

The Construction Contractor will conduct the preconstruction noxious weed and invasive plant surveys within all areas expected to be subject to ground disturbance during the appropriate growing season. Adjacent existing infestations of noxious weeds and/or invasive species adjacent to the Project will be documented during preconstruction surveys, as will adjacent land uses, which can contribute to the proliferation of noxious weeds and/or invasive species. These surveys will provide

baseline data to plan for weed control efforts, as well as, provide additional information to guide short- and long-term reclamation efforts.

The locations of all noxious weeds and invasive plant species within the survey area will be documented with a hand-held Global Positioning System (GPS) instrument and will be used to develop a preconstruction weed map. The preconstruction weed map will be used to delineate the infected area(s) prior to construction and will serve as the basis for the post construction conditions comparison to document any weed infestations that have been introduced or spread as a result of Project activities.

Prior to construction, areas of noxious weed and invasive plant infestations identified during these surveys will be flagged by the Construction Contractor and reviewed by the CIC. This flagging will alert construction personnel to the presence of noxious weeds and invasive plants and will prevent access to these areas until management control measures, as described below in Section 4.4, have been implemented.

The results of the preconstruction surveys will be included in the Final Noxious Weed Plan. Noxious weeds and invasive plants identified within the Project area during preconstruction surveys will be reported to the applicable land-managing agency in whose jurisdiction the weeds occur once the surveys are completed in a format agreed upon between the Construction Contractor and the applicable land-managing agencies.

4.3 Prevention

The Construction Contractor will treat existing noxious weed and invasive plant species prior to Project construction. In Idaho, weed species on the EDRR list will be treated prior to the start of ground-disturbing activities. For other weed species, the decision to treat prior to the start of construction activities will be based on the nature and extent of the infestation, surrounding conditions, landowner permission, and the construction schedule.

REC-2 Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.

REC-3 Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.

Measures will be implemented to prevent the spread of noxious weeds and invasive plants during construction activities, reclamation efforts, and operation and maintenance activities. Detailed information regarding reclamation, including the control of noxious weeds and invasive plant species, is contained in Appendix D – Framework Reclamation Plan of the POD. The Construction Contractor will apply preventive measures on a case-by-case basis, where necessary. The Construction Contractor will depict the application of preventative measures on Volume II – Map Sets 1 and 2, which will be approved by the BLM, BOR, USFS, and CIC. EPMs implemented during construction, reclamation, and/or operation and maintenance activities to help prevent noxious weed infestations are listed below.

WEED-2 Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures will follow the principle of integrated weed management.

WEED-3 Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land management agency, soil stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the USFS or per private landowner request, stockpiles will not be covered with plastic.

WEED-4 Gravel and other materials used for road construction on federally managed lands shall come from certified weed-free sources.

WEED-5 Where feasible, construction will begin in weed-free areas before operating in weed-infested areas. The feasibility of this measure will be determined after survey data is completed to identify weed-free and weed-infested areas.

WEED-6 All movement of construction vehicles outside of the ROW will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads, including overland access routes, will be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed their activities must be confined within the marked or flagged areas.

WEED-7 Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative.

WEED-8 When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations.

WEED-9 Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment.

WEED-12 Implement preventive measures, such as quarantine and closure, to reduce and contain existing noxious weed populations. Flagging will alert personnel and prevent access into areas where noxious weeds occur. Construction disturbance will be minimized in these areas until control measures have been implemented (with the exception of reclamation treatments, as applicable).

REC-8 Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread.

REC-9 Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.

REC-10 When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the Final Reclamation Plan.

REC-11 Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.

REC-12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the Stormwater Pollution Prevention Plan will also assist in preventing the establishment of weeds on exposed soils.

REC-13 Project-related storage and mullet-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.

REC-14 Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil will be returned to the area it was taken from and will not be spread in adjacent areas. If the

topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.

REC-15 Straw or hay that may be used as a best management practice (BMP) to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

VEG-4 Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagules. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations would not also become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans.

VEG-5 The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.

OM-14 Before beginning an Operations and Maintenance (O&M) project on federal or state land, the Companies or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an off-site location.

OM-15 To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed free” and seed mix will be agreed to in advance by the landowner or land managing agency.

FISH-3 All wetlands and waters in the project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.

SOIL-11 Prior to construction, soils will be evaluated to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the Project's geotechnical engineer, such as excavation and replacement of the expansive soils with compacted backfill, will be required. If imported backfill material is used, it must be from a BLM/USFS-approved source and certified as free of invasive weeds and propagules (i.e., seeds and root fragments).

SOIL-12 Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.

4.4 Control Measures

Methods to control noxious weeds and invasive plants associated with Project activities may include mechanical, cultural, biological, or chemical measures. Prior to all ground-disturbing activities, the Construction Contractor's qualified weed specialist will survey the proposed disturbance area. Based on the preconstruction weed inventory and working in conjunction with the BLM, BOR, USFS, state Weed Districts, and CIC, the Construction Contractor will identify areas where noxious weed and invasive plant control measures will be implemented. These measures will be described in the Final Noxious Weed Plan.

Noxious weed and invasive plant control measures will be implemented in accordance with existing state and county regulations and BLM, BOR, and USFS requirements. Control measures will be based on species-specific and site-specific conditions (e.g., proximity to water or riparian areas, agricultural areas, and season of application) and will be coordinated with the BLM, BOR, or USFS Authorized Officer or his/her designated representative, state Weed District officers and County Weed Superintendents, the CIC, and the Construction Contractor's weed management specialist. The Companies will be responsible for providing the necessary personnel or hiring a contractor, with qualifications as described in Section 4.1, to implement noxious weed and invasive plant control procedures. In the event new noxious weed and invasive plant populations are identified on the Project in the future, the protocols and methods outlined in this Plan will be followed.

Treatment of noxious weeds and invasive plants in the Project area will continue for three years post-construction or until preconstruction conditions are reestablished. EPMs to control of noxious weeds and invasive plants include:

REC-4 Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable.

REC-7 All areas treated will be documented using GPS technologies and included in the annual report.

VEG-8 Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Companies only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years, post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Companies will not be required to treat noxious weeds for more than 3 years.

WEED-15 Additional weed and/or erosion control measures recommended during monitoring will follow the preventive and control measures outlined in the Noxious Weed Plan. Continued cooperation with the current BLM, BOR, or USFS noxious weed coordinator and local weed management areas is also encouraged.

The Construction Contractor's weed management specialist will provide a detailed control methodology for each noxious weed and invasive plant species which will be documented in the Final Noxious Weed Plan. The BLM, BOR, and USFS Authorized Officer or his/her designated representative will review and approve the Final Noxious Weed Plan prior to implementation. Control measures may include mechanical, cultural, biological, and/or chemical methods. Each of these control methods is briefly described below.

4.4.1 Mechanical

Mechanical methods rely on removal of plants and/or cutting roots with a shovel or other hand tools or equipment that can be used to remove, mow, or disc weed populations. Mechanical methods are useful for smaller, isolated populations of noxious weeds and invasive plants in areas of sensitive habitats, or if larger populations occur in agricultural lands, where tillage can be implemented. Some rhizomatous plants can spread by discing or tillage; therefore, implementation should be species specific. If such a method is used in areas to be reclaimed, subsequent seeding will be conducted to re-establish a desirable vegetative cover that will stabilize the soils and slow the potential re-invasion of noxious weeds and invasive plants.

WEED-11 Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.

WEED-13 If discing or tilling is an appropriate and feasible weed treatment method, it will only be permitted in bladed areas.

4.4.2 Cultural

Cultural control methods rely on preventive education of the public and construction, operation, and maintenance personnel. Cultural control of noxious weeds and invasive plants can also include the minimization of personnel and vehicular travel through areas of known weed populations. To avoid spreading noxious weed and invasive plant seed or plant materials, noxious weed and invasive plant populations identified during preconstruction surveys or by BLM, BOR, USFS, and/or state weed control officials will be cordoned off and flagged and to alert construction personnel of the presence of noxious weeds (see Section 4.2). Access to these areas will be prevented until weed management control measures have been implemented. Additionally, prior to the initiation of construction activities all construction personnel will be instructed on the importance of controlling noxious weeds and invasive plants and will be provided information and training regarding noxious weed and invasive plant identification and management (see Section 4.1).

4.4.3 Biological

Biological control involves the use of living organisms (insects, diseases, and livestock) to control noxious weeds to achieve management objectives. Many noxious weed and invasive plants species have been introduced recently into North America and have few natural enemies to control their population. The biological control agent is typically adapted to a specific species and selected for their ability to attack critical areas of the plant that contribute to its persistence. The use of biological control methods is not expected for this Project.

4.4.4 Chemical

Chemical control can effectively remove noxious weeds and invasive plants through use of selective pesticides. Pesticide treatment can be temporarily effective for large populations of noxious weeds and invasive plants where other means of control may not be feasible. If pesticides are considered for use to control noxious weeds and invasive plants, the type of pesticide and methods of use shall be approved by the applicable land-managing agency prior to their use. On private and state lands, pesticides approved for use in the PacifiCorp's *Transmission and Distribution Vegetation Management Program Specification Manual* (PacifiCorp 2012) and/or Idaho Power Company's *Framework for Managing Noxious Weeds* (IPC 2011) will be used.

The *Final Programmatic Environmental Impact Statement on Vegetation Treatment on BLM Land in Seventeen Western States* lists pesticides acceptable for use on BLM-administered lands (BLM 2007). Pesticides listed in Attachment E-1 – Agency-Approved Pesticides may be used in the Project area after coordination with the CIC. Application of pesticides on BLM or USFS land will also require submittal of PUPs, which document the pesticide proposed for use, maximum application rate, number and timing of applications, targeted and non-targeted species at the treatment site, and other characteristics (BLM 2007). PUPs may also be required for treatment on BOR-managed lands. Pesticides approved for use on the Project will be reviewed and approved by the BLM, USFS, and Wyoming Weed District Supervisors and Idaho County Weed Superintendents prior to beginning construction and/or prior to use. A detailed control methodology for each noxious weed and invasive species identified in

areas that will be subject to ground disturbance will be included by the Construction Contractor in the Final Noxious Weed Plan.

Before construction, pesticides approved by the land management agency or landowner shall be applied to applicable noxious weed and invasive plant populations to reduce their spread. Annual pesticide spraying shall be planned and coordinated with the applicable agencies (based on the results of the prior years' survey data) to ensure spraying is conducted only where necessary, in areas approved for pesticide use, during the proper growing period, during favorable environmental conditions, and using only the appropriate and agency-approved chemicals to control targeted species. In areas of dense noxious weed populations, a broader application will be used and a follow-up seeding program will be implemented.

Pesticide applications will be controlled, as described in Section 6.0 – Pesticide Application, Handling, Spills, and Cleanup, to minimize the impacts on the surrounding vegetation. Specific EPMs related to chemical control include:

REC-5 All pesticide applications will comply with label restrictions, federal, state, and/or county regulation, the Companies' specifications, and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (BLM 2007). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used; target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands (also see Attachment E-1 of this Plan).

REC-6 Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.

WEED-16 A certified pesticide applicator, approved in the states of Wyoming or Idaho, will perform the application using pesticides selected and approved by BLM or USFS in accordance with applicable laws,

regulations, and permit stipulations. All pesticide applications must follow U.S. Environmental Protection Agency label instructions. Application of pesticides will be suspended in accordance with the Companies' vegetation management specifications (e.g., strong winds, etc.).

WEED-17 Pesticides will be transported to the Project site daily with the following provisions:

- Only the quantity needed for that day's work will be transported.
- Concentrate will be transported only in approved containers in a manner that will prevent tipping or spilling, and in a location isolated from the vehicle's driving compartment, food, clothing, and safety equipment.
- Mixing will be done offsite, over a drip catching device and at the following distances from open or flowing water, wetlands, or other sensitive resources: 100 feet for practically non-toxic to slightly toxic pesticides; 250 feet for moderately toxic or label advisory for ground/surface water; and 250 feet for highly toxic to very highly toxic pesticides. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies.
- All pesticide equipment and containers will be inspected for leaks daily.
- Disposal of spent containers will be in accordance with the pesticide label.

WEED-18 Pesticide contractors will be state-certified to apply pesticides and will obtain, and have readily available, copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.

OM-13 Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Pesticides or other chemical control will be selected from the BLM and USFS lists of previously approved pesticides and in accordance with any pesticide plans. If the federal land managing agency determines that a previously approved pesticide and/or plan is unacceptable, they shall notify the Companies.

OM-20 Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.

4.5 Reclamation Actions

As specified in Appendix D – Framework Reclamation Plan of the POD, the primary goal of conducting reclamation activities is to reclaim temporarily disturbed areas to preconstruction conditions to the extent practical, which includes noxious and invasive

weed prevention and control. In addition to the measures outlined in Sections 4.3 and 4.4 above, the following will be implemented to achieve reclamation goals:

- Perform preconstruction weed control treatments in areas of large weed infestations within or adjacent to the Project ROW identified during preconstruction weed surveys.
- Conduct post-construction weed monitoring for a minimum of 3 years.
- Perform post-construction weed treatment until site meets pre-disturbance conditions.

Reclamation actions will also be subject to the following specific EPMs:

WEED-1 The Companies shall consult with each appropriate local land management agency (USFS, BOR, and BLM) office to determine appropriate seed mix and commercial seed source for revegetation. Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The Final Reclamation Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.

WEED-10 Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D – Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds.

WEED-13 If discing or tilling is an appropriate and feasible treatment method, it will only be permitted in bladed areas.

WEED-14 Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives.

REC-27 Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils.

REC-28 If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring.

REC-29 Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).

5.0 MONITORING

The Construction Contractor's weed management specialist(s), the CIC, or a third-party contractor will monitor areas of Project-related disturbance for a minimum of 3 years. Monitoring will be conducted annually in the late summer or early fall when noxious weeds and invasive plants located during the preconstruction surveys are still identifiable. Growing seasons will vary from year to year, and consequently the timing of seasonal monitoring will vary as well.

Monitoring of previously identified affected/disturbed areas will be initiated during the first summer following construction. Noxious weed and invasive plant monitoring will occur annually for a minimum of 3 years following completion of each segment of the Project. Noxious weed and invasive species conditions will be included in the evaluations of revegetation success as described in Appendix D of the POD.

5.1 Reporting

Noxious weed and invasive plant conditions will be included in the Reclamation Monitoring Report as described in Appendix D. The purpose of the report is to provide a status update on progress towards meeting reclamation goals, including prevention of noxious weed or invasive species spread and establishment of desirable native vegetation communities. Noxious weeds and invasive species will be documented in plant species lists recorded for each site-specific reclamation monitoring site. General monitoring will include documentation of overall recovery conditions associated with the Project, including concerns such as noxious weed populations resulting from Project construction. General reclamation monitoring also will include collection of photos at established photos points at agreed upon locations with the BLM and USFS. The Construction Contractor will document their observations and make these monitoring reports available to the CIC and Companies, as required.

Further evaluation of areas where the spread of a noxious weed infestation is noted, particularly in previously unaffected locations, will determine if these areas require remedial action and additional treatment. The Construction Contractor will identify such areas in the annual report and will document any additional noxious weed and invasive plant control treatments. The annual report documenting noxious weed and invasive plant control activity will be submitted to the CIC and Companies for appropriate distribution.

5.2 Ongoing Monitoring and Control

After the Construction Contractor has obtained appropriate approvals from the land management agencies and/or landowners, and the Companies release the Construction Contractor, the Companies will consult with the land management agency and/or landowner should issues arise pertaining to noxious weeds and invasive plants. The agencies may also contact the Companies to report on the presence of noxious weeds and invasive plants within the Project area.

The Companies' operations personnel will be trained in the identification of predominant noxious weed populations, and the Companies will control the weeds on a case-by-case basis in consultation with the land management agency and/or landowner, as

appropriate. If determined necessary, a report on actions taken will be provided to the BLM and USFS on a predetermined schedule.

6.0 PESTICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

6.1 Pesticide Application and Handling

The list of agency-approved pesticides to be used is provided in Attachment E-1. Before application, all required permits from the local authorities (e.g., the Wyoming Weed and Pest Districts, Idaho County Weed Superintendents or CWMAs, BLM, BOR, and/or USFS) will be obtained. Permits may contain additional terms and conditions that go beyond the scope of this Plan. Application of pesticides will follow the EPMs listed in Section 4.4 – Control Measures.

6.2 Pesticide Spills and Cleanup

All reasonable precautions will be taken to avoid pesticide spills. EPMs describing pesticide spills and cleanup, worker safety, and spill reporting include:

WQA-13 Construction industry standard practices and BMPs will be used for spill prevention and containment.

WQA-21 Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

WQA-30 In the event of a spill, cleanup will be immediate. The Construction Contractor will keep spill kits in their vehicles to allow for quick and effective response to spills. Items to be included in the spill kit at a minimum are:

- Protective clothing and gloves
- Absorptive clay, “kitty litter,” or other commercial absorbents
- Plastic bags and a bucket
- Shovel
- Fiber brush and screw-in handle
- Dust pan
- Caution tape
- Highway flares (use on established roads only)
- Detergent

WQA-31 The response to a hazardous material spill will vary with the size and location of the spill, but general procedures include:

- CIC and BLM, BOR, or USFS notification
- Traffic control
- Dressing the cleanup team in protective clothing

- Stopping any leaks
- Containing spilled material
- Cleaning up and removing spilled pesticide and contaminated absorptive material and soil
- Transporting spilled pesticide and contaminated material to an authorized disposal site

WQA-34 In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Companies.

WQA-35 If construction activity occurs within a wetland with standing water or a flowing stream prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and “wet” wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F –Framework Stormwater Pollution Prevention Plan).

WQA-36 Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations:

- Shovels
- Absorbent pads/materials
- Personal protective gear
- Medical first-aid supplies
- Bung wrench (nonsparking)
- Phone list with emergency contact numbers
- Storage containers
- Communications equipment

WQA-37 The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel. Persons accountable for carrying out the procedures specified herein will be designated prior to construction and informed of their specific duties and responsibilities with respect to

environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous Materials Management Plan. At a minimum, this training shall include the following:

- An overview of regulatory requirements
- Methods for the safe handling/storage of hazardous materials
- Spill prevention procedures
- Emergency response procedures
- Use of personal protective equipment
- Use of spill cleanup equipment
- Procedures for coordinating with emergency response teams
- Procedures for notifying agencies
- Procedures for documenting spills
- Identification of sites/areas requiring special treatment, if any

WQA-44 During the Project's operation and maintenance phase, the Companies will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Companies and all operations and maintenance subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.

Additional information regarding the handling of hazardous materials may be found in Appendix P – Framework Hazardous Materials Management Plan and Appendix G – Framework Spill Prevention, Containment, and Countermeasures Plan of the POD. Specifically, the Framework Spill Prevention, Containment, and Countermeasures Plan states:

- Storing of fuel, lubricant, or hazardous materials within 500 feet of streams, 400 feet of public wells, 200 feet from private wells, 100 feet of wetland boundaries, or within a designated municipal watershed shall be prohibited, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas.
- No potentially hazardous materials, other than essential equipment fuels (e.g., gasoline, diesel, etc.) or standard lubricants (e.g., engine oils, grease, etc.) shall

be transported onto the ROW or construction area without coordination and approval.

6.3 Worker Safety and Spill Reporting

All pesticide contractors will obtain and have readily available copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills would be reported in accordance with applicable laws and requirements. In addition to the EPMs presented in Section 6.2, EPMs describing worker safety and spill reporting include:

WQA-32 Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will:

- Attempt to identify the source, composition, and hazard of the spill.
- Notify appropriately trained personnel immediately.
- Isolate and stop the spill, if possible, and begin cleanup (if it is safe).
- Initiate evacuation of the area, if necessary.
- Initiate reporting actions.

WQA-33 Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.

WQA-38 Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.

WQA-39 Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Construction Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be

submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible, including:

- current threats to human health and safety, include known injuries, if any
- spill location, including landmarks and nearest access route
- reporter's name and phone number
- time spill occurred
- type and estimated amount of hazardous materials involved
- potential threat to property and environmental resources, especially streams and waterways
- status of response actions

WQA-40 The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site.

- Wyoming DEQ (24 hours) at (307) 777-7781.
- Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610.
- If spill threatens human health, call 911, and the appropriate county response center.
- National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171.

The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.

WQA-41 When a spill poses a direct and immediate threat to health and safety and/or property, the land management agency and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.

WQA-42 The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.

WQA-43 The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident):

- time and date of each log entry
- name of individual recording log entry
- list of all agencies notified, including name of individual notified, time, and date
- type and amount of material spill
- resources affected by spill
- list of response actions taken, including relative success
- copies of letters, permits, or other communications received from government agencies throughout the duration of the spill
- copies of all outgoing correspondence related to the spill
- photographs of the response effort (and surrounding baseline photographs if relevant)

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ATTACHMENT E-1
AGENCY-APPROVED PESTICIDES

Including:

- BLM-Approved Pesticides
- USFS Caribou-Targhee-Approved Pesticides
- USFS Medicine Bow-Routt-Approved Pesticides

BLM-APPROVED PESTICIDES

- 2,4-D
- Bromacil
- Chlorsulfuron
- Clopyralid
- Dicamba
- Diuron
- Glyphosate
- Hexazinone
- Imazapyr
- Metsulfuron methyl
- Picloram
- Sulfometuron methyl
- Tebuthiuron
- Triclopyr

USFS CARIBOU-TARGHEE-APPROVED PESTICIDES

Herbicide (Active Ingredient)	Maximum Label Application Rate (lbs. AI/AC*)	Proposed Typical Application Rate (lbs. AI/AC)	General Application
2,4-D amine	4.0 lb./ac.	0.5-1.5 lb./ac.	Upland-Riparian
Aminopyralid	0.11 lbs. AI/AC	0 .05 to .11 lbs. AI/AC.	Upland-Riparian
Chlorsulfuron	3.0 oz./ac.	0.25-3.0 oz./ac.	Upland-Riparian
Clopyralid	0.5 lb./ac.	0.1-0.375 lb./ac.	Upland-Riparian
Dicamba	4.0 lb./ac.	0.25-2.0 lb./ac.	Upland
Glyphosate	5.5 lb./ac.	0.5-2.0 lb./ac.	Upland-Riparian
Imazapic	0.75 lb./ac.	0.06-0.2 lb./ac.	Upland
Metsulfuron-methyl	2.0 oz./ac.	0.25-0.75 oz./ac.	Upland-Riparian
Picloram	1.0 lb./ac.	0.125-0.5 lb./ac.	Upland
Sulfometuron methyl	2.25 oz./ac.	0.25-0.75 oz./ac.	Upland-Riparian
Triclopyr: triethylamine salt (TEA)	9.0 lb./ac.	0.25-9 lb./ac.	Upland-Riparian

USFS MEDICINE BOW-ROUTT-APPROVED PESTICIDES

- Atrazine
- Bromacil
- Bromacil + Diuron
- Chlorsulfuron
- Clopyralid
- 2,4-D
- Dicamba
- Dicamba + 2,4-D
- Diuron
- Glyphosphate
- Glyphosate
- Glyphosate + 2,4-D
- Hexazinone
- Imazapyr
- Mefluidide
- Metsulfuron Methyl
- Picloram
- Picloram + 2,4-D
- Simazine
- Sulfometuron Methyl
- Tebuthiuron
- Triclopyr

APPENDIX F
FRAMEWORK STORMWATER POLLUTION PREVENTION PLAN

Appendix F

Framework Stormwater Pollution Prevention Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation at Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Stormwater Pollution Prevention Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

In compliance with criteria in the U.S. Environmental Protection Agency's (USEPA's) Clean Water Act, all construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more must obtain a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges (Code of Federal Regulations, Title 40, Parts 122 and 123). NPDES permits (also called Construction General Permits) are issued by the USEPA or similar authorized state entity following submittal of Notices of Intent (NOIs) for construction activities and

preparation of Stormwater Pollution Prevention Plans (SWPPPs) that describe how erosion and sediment transport to adjacent waterbodies will be minimized.

Measures to ensure that construction activities comply with state and USEPA requirements for stormwater are outlined in this Plan. The Construction Contractor will be responsible for development of the Final SWPPPs, including all mapping as required by applicable stormwater permits.

2.0 PURPOSE

SWPPPs are needed to minimize the volume of contaminated runoff, including sediment runoff, and to implement mitigation measures in a manner minimizing environmental impacts. Temporary stabilization methods (silt fences, straw bales, etc.) are not guaranteed or fail-safe measures without regular maintenance and field inspection throughout construction activities. In addition to conventional methods of erosion control, there are numerous new and improved products available, and the Construction Contractor is encouraged to review these progressive or improved materials in the development and implementation of the SWPPPs that will be required for the Project.

The proper implementation of mitigation measures associated with the SWPPPs is imperative during all construction activities. These activities will be conducted in an environmentally sensitive and responsible manner so no discharge of sediment or contaminants may be conveyed as either direct or indirect discharge to wetlands, waters of the United States, or waters of the States of Wyoming or Idaho.

Development, implementation, and maintenance of the Final SWPPPs will provide the Construction Contractor with the plans for reducing soil erosion and minimizing pollutants in stormwater during construction. The SWPPPs will:

- Define the characteristics of the site and the type of construction that will be occurring;
- Describe the practices that will be implemented to control erosion and the release of pollutants in stormwater;
- Create an implementation schedule to ensure the practices described in the SWPPPs are in fact implemented, and to evaluate the SWPPPs' effectiveness in reducing erosion, sediment, and pollutant levels in stormwater discharge from the Project sites; and
- Describe the final stabilization/termination design to minimize erosion and prevent stormwater impacts after construction is complete.

3.0 NOTIFICATION REQUIREMENTS AND IMPLEMENTATION

Before construction begins, the Construction Contractor will be responsible for developing Final SWPPPs and obtaining coverage under the applicable NPDES Construction General Permits by filing NOIs and appropriate fees with the USEPA Region 10 for Idaho and the Wyoming Department of Environmental Quality (WDEQ) for a Large Construction General Permit in accordance with NOI instructions. The

Construction Contractor will be responsible for implementing site-specific SWPPPs and is required to perform routine inspections throughout the duration of construction activities.

The primary intent of erosion and sediment control measures is to control and minimize erosion at the source. For the Project, the main source of potential stormwater contamination will be erosion of soils from construction activities. It will be the responsibility of the Construction Contractor to implement erosion control measures where necessary, in order to minimize pollutants in stormwater, and to keep the Project in compliance with USEPA, WDEQ, and Idaho Department of Environmental Quality regulations.

Several SWPPPs may be needed for the Project as follows:

- Wyoming SWPPP
- Idaho SWPPP
- Detailed erosion control plans for substations or other areas that will require permanent erosion and sediment control structures

A copy of the applicable SWPPP shall remain with the Construction Manager on the construction site or at a staging area(s), and be readily available while the Project is under construction, from the start of construction activities until completion of reclamation activities.

The Construction Contractor must retain a set of construction site maps for the duration of the Project, and for 3 years after the Notice of Termination is submitted, that delineates the following items:

- Areas of soil disturbance that have been stabilized,
- Areas to be graded along with a time schedule,
- Areas of potential soil erosion where control practices will be implemented,
- Types of control practices and schedule for implementation,
- Locations of any post-construction projects, and
- Copies of all inspections performed for the duration of the Project.

4.0 PROJECT MODIFICATIONS

The Construction Contractor is responsible for maintaining up-to-date SWPPPs and shall amend the SWPPP(s) whenever there is a change in construction or operations that may affect the discharge of pollutants to surface waters or groundwater. The SWPPPs shall also be amended if they are in violation of the General Permits or have not achieved the general objective of eliminating pollutants in stormwater discharges. Amendments shall be implemented in a timely manner, and in no case shall 14 days elapse before the SWPPPs are amended. All amendments should be dated and directly attached to the applicable SWPPP(s). The USEPA or WDEQ may also require the discharger to amend a SWPPP, in which case the same requirements of timeliness apply.

5.0 ENVIRONMENTAL PROTECTION MEASURES

Environmental protection measures (EPMs) to ensure construction, operation, and maintenance activities comply with state and USEPA requirements for stormwater management to be incorporated into the SWPPPs are listed below. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

G-1 Resource Management Plan (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements will apply on BLM-managed lands.

G-2 Forest Plan Standards and Guidelines (as amended) will apply on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.

G-3 Third-party Environmental Compliance Inspection Contractor (CIC) Monitors approved by the Agencies will monitor construction activities. Monitoring activities will be structured in accordance with the Environmental Compliance Management Plan included as Appendix C of the Plan of Development.

OM-2 Roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves), significant grade changes, and as requested by the federal or state agency.

OM-3 All access road drainage structures, constructed and installed for the Companies' use only, will be maintained or repaired by the Companies during O&M activities or emergency response.

OM-9 Where possible, low-growing vegetation and small tree species within the right-of-way (ROW) that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other "hot spots" (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.

OM-10 Any vegetation control method may be used for vegetation maintenance on access roads; this is typically scheduled at the same time as vegetation maintenance within the ROW. However, in cases where vegetation grows quickly, removal may occur annually. Vegetation that will not interfere with the safe operation of vehicles and equipment will be left in place.

OM-17 Woody vegetation management within 50 feet of streams will be conducted by hand crews.

OM-18 Herbaceous plants and low-growing shrubs will be left in place if they do not interfere with the safe O&M of Project lines and equipment as described in Appendix R of the Plan of Development.

OM-19 The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.

OM-20 Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.

REC-12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.

REC-15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction stormwater inspector.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

REC-20 Temporarily disturbed lands within the ROW will be recontoured to blend with the surrounding landscape. Recontouring will emphasize restoration of the existing drainage patterns and landform to pre-construction conditions, to the extent practicable. (Tower pads will not be re-contoured.)

REC-22 Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including, but not limited to, assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices will be left in place.

REC-23 The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the Final Reclamation Plan and be consistent with the SWPPPs.

VEG-1 During construction, blading of native plant communities will be minimized, consistent with safe construction practices. Where

feasible, shrubs will be cut at or near ground level to facilitate re-growth after construction. The footprint of construction and operations facilities should be kept to the minimum necessary. Blading near watercourses will be minimized and BMPs identified in the SWPPPs will be implemented to reduce the risk of materials entering watercourses.

VEG-2 Where feasible, locate new access roads to minimize the number of trees removed during construction. However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed).

VEG-3 In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.

VEG-5 The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.

WET-1 Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (Resource Management Plans, Management Framework Plans, and Land and Resource Management Plans [Forest Plans]) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.

FISH-1 On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.

GEO-2 A site-specific soil analysis shall be conducted prior to construction to verify any areas identified as unstable or marginally unstable on federal lands. A site-specific geotechnical analysis shall be conducted of federal lands prior to construction to locate areas where there is landslide risk. If such areas are identified, the Companies will develop mitigation and submit a report to the appropriate land management agency.

SOIL-1 The Wyoming BLM State Reclamation Policy and applicable Agency management plan requirements for soil management will be followed on federal lands in the state of Wyoming.

SOIL-2 The Companies will submit a Compaction Monitoring Plan for review and Agency approval prior to construction that specifies the conditions under which construction will either not start or will be shut down due

to excessively wet soils. Conditions will be measurable in the field and easy to demonstrate to construction workers.

SOIL-4 Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent water bars, cross-ditching (e.g., rolling dips) or other methods to reduce compaction while preventing gully formation. Ripping pattern should be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies.

SOIL-5 The Companies are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit.

SOIL-6 Reclamation of all temporary disturbances on NFS lands (such as road cuts) should include replacement of material to original contours and re-compaction to pre-disturbance compaction percentage (which should be identified during reclamation at adjacent locations to the disturbance). Guidelines for streambank re-compaction to maximize vegetative regrowth and mechanical stability are covered in U.S. Army Corps of Engineers publication ERDC TN-EMRRP-SR-26.

SOIL-12 Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.

SOIL-14 Slope and berm graded material, where possible, to reduce surface water flows across the graded area.

SOIL-16 Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.

SOIL 17 Re-establish native vegetation cover in highly erodible areas as quickly as possible following construction where determined necessary (refer to Appendix D – Framework Reclamation Plan).

SOIL-20 To prevent accelerated wind or water erosion on dirt roads, gravel mulches may be added if other mitigation measures are not adequate or if the area is not in a sensitive receptor zone. Gravel of approximately 0.75 to 1.5 inches in diameter should be used and cover a minimum of 90 percent of the soil surface. Slopes steeper than 3:1 may require additional sediment and erosion control structures.

SOIL-21 Surface roughening aids establishment of vegetative cover, reduces runoff velocities, increases infiltration, and reduces erosion by providing sediment trapping. Graded areas with smooth surfaces increase the potential for accelerated erosion; therefore, surfaces should be left in a roughened condition whenever possible.

SOIL-22 On steep slopes (greater than 30 percent) or in areas of concentrated flows (e.g., waterways) erosion control matting or riprap may be used to stabilize the surface and increase infiltration times.

SOIL-23 Areas graveled for stabilization will be inspected to ensure depressions caused by vehicle traffic are filled and runoff is not being directed toward wetlands or other receiving waters.

SOIL-24 Roughened surfaces should be periodically inspected for rills and washes. Areas exhibiting accelerated erosion will be filled and reseeded as necessary or determined by the BLM or USFS Authorized Officer or his/her designated representative.

SOIL-25 Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.

WQA-1 The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.

WQA-2 NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.

WQA-3 One or more responsible persons will be designated to manage stormwater issues, conduct the required stormwater inspections, and maintain the appropriate records to document compliance with the terms of the NPDES permit.

WQA-4 The SWPPPs will be modified as necessary to account for changing construction conditions.

WQA-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.

WQA-6 Stormwater BMPs will be inspected and maintained on all disturbed lands during construction activities, as described in the SWPPP and appropriate NPDES permit.

WQA-7 Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.

WQA-8 Temporary BMPs will be used to control erosion and sediment at multi-purpose areas (equipment storage yards, fly yards, laydown areas) and substations.

WQA-9 The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.

WQA-10 Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP and appropriate NPDES permit.

WQA-11 Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs and appropriate NPDES permit.

WQA-12 In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.

WQA-23 Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.

WQA-24 On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.

WQA-27 On non-federal lands, culvert placement should comply with state BMPs.

WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

TRANS-13 Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during the design stage.

6.0 MITIGATION MAINTENANCE, INSPECTION, REPAIR, AND MONITORING

The Construction Contractor shall at all times properly operate and maintain any facilities and systems of treatment and control (and related appurtenances). Proper operation and maintenance also include appropriate quality assurance procedures. Proper operation and maintenance may require the operation of backup or auxiliary facilities or similar systems if construction takes place in an above average precipitation year.

The Construction Contractor will be required to conduct routine maintenance and emergency repair on any structural controls, including the maintenance of erosion and sediment control measures and any required subsequent reporting. As part of the SWPPP, the Construction Contractor will be required to develop an inspection schedule and conduct routine inspections to identify conditions that could lead to discharges of

chemicals or contact of stormwater with storm drainages or surface waters. Schedules will be established for regular inspections of equipment and areas. Inspections of the construction site shall occur in accordance with the General Permit applicable to each state to identify areas contributing to a stormwater discharge and to evaluate whether industry standards are in place and functioning properly. For storm events of extended durations, observations shall be performed every 24 hours. During inspections, the Construction Contractor will also determine if the industry standards identified in the SWPPPs are adequate and whether additional control practices are needed. All monitoring and inspection records which have been produced in association with the SWPPPs will be retained by the Construction Contractor for a period of at least 3 years.

To monitor EPM effectiveness and to evaluate whether additional mitigation measures are required a monitoring program and reporting system will be followed. As part of this program, weather conditions should be monitored to prepare for precipitation events. It is recommended that weather forecasts be checked at least every week.

7.0 TRAINING

The Construction Contractor will be responsible for the SWPPPs' implementation, amendments, and revisions. On-site construction personnel will be responsible for installation and maintenance of on-site mitigation measures.

Properly trained personnel are more capable of preventing spills, responding safely and effectively to accidents, and recognizing situations that could lead to stormwater contamination. The Construction Contractor will be responsible for familiarizing their personnel with the information contained within the SWPPPs. Training meetings will need to be held for new personnel who join the Project after the initial training has been provided. The purpose of these meetings will be to review the proper installation methods and maintenance of all erosion and sedimentation control measures to be used for the Project. The monitoring/inspection program and all required maintenance and repair will be conducted by trained personnel.

8.0 POST-CONSTRUCTION STORMWATER MANAGEMENT

Mitigation measures used to reduce pollutants in stormwater discharges after all construction phases have been completed at the sites should take into account local post-construction stormwater management requirements, policies, and guidelines, as well as site-specific and seasonal conditions. Post-construction mitigation measures will be assessed during future line maintenance. During line maintenance, any areas disturbed by the Project that are observed to be eroding sediment into drainages will be assessed for appropriate permanent mitigation measures to control sediment movement off the disturbed area. Disturbed areas will also be reclaimed per Appendix D – Framework Reclamation Plan.

9.0 LITERATURE CITED

BLM (U.S. Department of the Interior, Bureau of Land Management) and USFS (U.S. Department of Agriculture Forest Service). 2007. Surface and Operating Standards

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APPENDIX G
FRAMEWORK SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURES PLAN

Appendix G

Framework Spill Prevention, Containment, and Countermeasures Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall locations of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Spill Prevention, Containment, and Countermeasures Plan (SPCC Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to ensure protection of water resources are outlined in this Plan. The Construction Contractor will be responsible for development of the Final SPCC Plan, including mapping of all storage, refueling, and lubrication areas.

2.0 PURPOSE

The purpose of this Plan is to provide preventive procedural actions, environmental protection measures (EPMs), and other specific stipulations and methods to minimize

the environmental impact associated with spills or releases of fuel, lubricants, or other hazardous materials, during construction and refueling activities and during special refueling activities within 100 feet of waterbodies, wetland boundaries, or within municipal watersheds.

This document will provide a template for the development of a detailed Final SPCC Plan to be developed by the Construction Contractor, which differs from the SPCC plans designed and developed for substations or areas where large volumes of hazardous materials (e.g., oils, fuels, etc.) are stored.

3.0 RESPONSIBILITY OF IMPLEMENTATION

The Companies, through their Construction Contractor and environmental inspectors, shall be responsible for the implementation of the procedural actions, EPMs, and other specific stipulations and methods. The Construction Contractor will comply with applicable federal, state, and local regulations applicable to the location of refueling, storage, waste removal, and other activities involving fuels and hazardous materials.

4.0 PREVENTIVE PROCEDURAL ACTIONS

The following preventive actions and procedures shall be accomplished prior to construction.

4.1 Storage, Refueling, and Lubrication Areas

Prior to the start of construction in an area, the Construction Contractor shall designate locations for storage, refueling, and lubrication of equipment and materials, minimizing the environmental and safety impacts associated with releases of fuel, lubricants, or hazardous substances. These areas will be designated using the following actions:

- Storing of fuel, lubricant, or hazardous materials within 500 feet of streams, 400 feet of public wells, 200 feet from private wells, 100 feet of wetland boundaries, or within a designated municipal watershed shall be prohibited, unless the location is designated for such use by an appropriate governmental authority. This applies to storage of these materials and does not apply to normal operation or use of equipment in these areas.
- No potentially hazardous materials, other than essential equipment fuels (e.g., gasoline, diesel) or standard lubricants (e.g., engine oils, grease), shall be transported onto the right-of-way (ROW) or construction area without coordination and approval.
- Heavy equipment used in the Project area will be inspected daily for leaks.
- To prevent introduction of petrochemicals into the waters of Wyoming and Idaho, fuel, oil, hydraulic fluid, lubricants, and other petrochemicals stored within a floodplain must have an appropriately sized impervious secondary containment system to prevent spills. The permittee shall contain and remove any petrochemical spills, including contaminated soil, and dispose of these materials at an approved disposal site.

4.2 General Petroleum Products, Quantities, and Storage

Typical fuels used in the Project area include diesel and gasoline. Typical lubricants used include engine oil, transmission/drive train oil, hydraulic oil, gear oil, and general lubricating grease. Typical coolants used are glycols (antifreeze).

The quantity of fuel storage varies, but is usually approximately 6,000 to 12,000 gallons, stored in tanks or tankers at contractor yards. Smaller quantities are sometimes stored temporarily in the construction area along the ROW. Fuel transport is typically accomplished by the use of fuel trucks for larger quantities, and by pickup trucks transporting smaller quantities from 5 to 100 gallons. Lubricants and coolants are generally stored in bulk or retail packaging at contractor yards in quantities typically less than 500 gallons and transported in trucks to the construction area as needed.

Fuel and lubricant containers of all volumes will be stored within secondary containment. Secondary containment will be able to hold 110 percent of the volume of the largest container stored within the containment structure.

4.2.1 Special Refueling Activities

When unique conditions require refueling within 100 feet of a waterbody, wetland boundary, or within designated municipal watersheds, a determination of necessary emergency response actions shall be conducted prior to refueling activities. In addition, absorbent materials or other spill containment materials shall be available for immediate application prior to commencing refueling activities. Fuel trucks transporting fuel to on-site equipment will travel only on approved access roads.

Each construction crew shall have on hand sufficient supplies of absorbent, barrier materials, and U.S. Department of Transportation (USDOT)–approved containers to allow for rapid containment and recovery of any hazardous material spill.

4.2.2 Waste Removal

Procedures and individual responsibilities regarding excavation, transportation, and off-site disposal of any soil-contaminated material from a hazardous material spill shall be established prior to construction.

Whenever any spill of a hazardous or potentially hazardous substance occurs, the Companies shall be notified. The Companies will help direct further response actions in accordance with U.S. Environmental Protection Agency (USEPA) and other regulatory requirements and assist throughout the cleanup and disposal of wastes.

4.3 Spill and Emergency Response for Hazardous Substances

The Framework Hazardous Materials Management and Construction Emergency Preparedness and Response Plans are included as Appendices P and Q of the POD, respectively. Prior to construction, the Construction Contractor will prepare final plans. The plans shall comply with all applicable federal, state, and local regulations and shall reference the applicable regulations.

The plans will include measures and procedures for characterizing, storing, handling, and disposing of hazardous substances and for emergency response operations.

The plans will include, but not be limited to, spill control, cleanup, notification, characterization, and disposal procedures. All Construction Contractor supervisors and personnel handling hazardous substances shall be familiar with these procedures.

- Spill Control: Following a spill, efforts shall be made to immediately control the source of the discharge and contain the spill. Absorbent materials shall be deployed with efforts directed to limiting the area of contamination. Every effort shall be made to prevent any spill from reaching wetlands or waterbodies. If a spill should reach surface waters, straw bales, booms, and absorbent materials shall be immediately deployed to contain and reduce downstream migration of the spilled material.
- Cleanup: Once a spill is contained, cleanup activities shall begin immediately. All spilled material, contaminated soil, and absorbent material shall be picked up and contained for disposal. In the event of a large spill or a spill that migrates into surface waters, waste cleanup specialists shall be called to assist in cleanup efforts. Prior to beginning construction the contractor shall be required to submit a list of cleanup contractors for approval.
- Spill Report Form: Following any spill, the Construction Contractor shall submit a spill report form for distribution to the Companies' Environmental Coordinator.
- Disposal: The Companies will provide a list of commercial disposal facilities for the Construction Contractor's reference. The Construction Contractor is responsible for arranging disposal with these facilities or other approved facilities as appropriate.
- Waste Identification: All waste identification/characterization, handling, labeling, storage, manifesting, transportation, record-keeping, and disposal shall be in accordance with all applicable federal, state, and local regulations and ordinances and shall be the responsibility of the Construction Contractor.
- Documentation: The Construction Contractor will be required to provide the Companies with copies of sample results, shipping manifests, chain-of-custodies, and bills-of-lading for wastes transported for disposal upon request. The documentation will also describe the type and quantity of waste material disposed of.
- Material Safety Data Sheets: The contractor shall maintain Material Safety Data Sheets (MSDS) for diesel fuel, gasoline, lubrication oil, and other hazardous materials used on the Project at each location where these materials are stored.
- Field Notification: As soon as possible after beginning spill control and cleanup activities, the Construction Contractor shall notify the Companies, who will determine if the spill is reportable. Notification of appropriate agencies will be the responsibility of the Construction Contractor.
- Any amount of any material in such quantity as may, with reasonable probability, injure or be detrimental to human health, animal or plant life, property, or may unreasonably interfere with the public welfare or the use of property must be reported. This includes chemical, biohazardous, petroleum product, and sewage spills and incidents. In addition to recent spills, the discovery of evidence of

previous unauthorized discharges, such as contaminated soil or groundwater, also must be reported.

- Agency Notification: Agency notification will be made of reportable spills. Written reports of oil or hazardous substance and/or material spills into state waters will be provided as directed.

5.0 REPORTABLE QUANTITIES

Pursuant to Chapter 4 of the Wyoming Water Quality Rules and Regulations (WWQRR), the following spills/releases are reportable to the Wyoming Department of Environmental Quality (WDEQ):

- Releases of "oil" and "hazardous substances" which enter waters of the state.
- Releases that are determined to be a threat to enter waters of the state and are: a) considered a "hazardous substance", or b) any amount greater than either 10 barrels of any combination of crude oil/petroleum condensate/produced water OR 25 gallons of refined crude oil products.
- Suspected releases from above or underground storage tanks are regulated by Chapter 17, WWQRR.
- Please note that non-reportable spill events are still required to be addressed immediately by containing, removing, and disposing of the released product according to WDEQ regulations.

Idaho follows federal reporting requirements. The USEPA has established requirements to report spills to navigable waters or adjoining shorelines. The USEPA has determined that discharges of oil in quantities that may be harmful to public health or the environment include those that:

- Violate applicable water quality standards;
- Cause a film or "sheen" upon, or discoloration of, the surface of the water or adjoining shorelines; or
- Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

For releases of hazardous substances, the federal government has established Superfund Reportable Quantities (RQs). If a hazardous substance is released to the environment in an amount that equals or exceeds its RQ, the release must be reported to federal authorities.

6.0 ENVIRONMENTAL PROTECTION MEASURES

EPMs to prevent spills or releases of fuel, lubricants, or other hazardous materials into water resources to be incorporated into the Final SPCC Plan are listed below. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

WQA-13 Construction industry standard practices and best management practices (BMPs) will be used for spill prevention and containment.

WQA-14 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.

WQA-15 All multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC plan will specify BMPs.

WQA-16 If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site.

WQA-17 If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.

WQA-18 For spills in standing water or where spilled materials reach water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water. Other actions will be taken, as necessary, to clean up contaminated waters.

WQA-19 If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.

WQA-20 The SPCC Plan will include details on the types and quantities of absorbent and protective materials (e.g., visqueen, booms) that must be readily available to construction personnel and requirements for the restocking of materials.

WQA-21 Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

WQA-22 Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.

WQA-30 In the event of a spill, cleanup will be immediate. The Construction Contractor will keep spill kits in their vehicles to allow for quick and effective response to spills. Items to be included in the spill kit at a minimum are:

- Protective clothing and gloves
- Absorptive clay, “kitty litter,” or other commercial absorbents
- Plastic bags and a bucket
- Shovel
- Fiber brush and screw-in handle
- Dust pan
- Caution tape
- Highway flares (use on established roads only)
- Detergent

WQA-31 The response to a hazardous material spill will vary with the size and location of the spill, but general procedures include:

- CIC and BLM, BOR, or USFS notification
- Traffic control
- Dressing the cleanup team in protective clothing
- Stopping any leaks
- Containing spilled material
- Cleaning up and removing spilled pesticide and contaminated absorptive material and soil
- Transporting spilled pesticide and contaminated material to an authorized disposal site

WQA-32 Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will:

- Attempt to identify the source, composition, and hazard of the spill.
- Notify appropriately trained personnel immediately.
- Isolate and stop the spill, if possible, and begin cleanup (if it is safe).
- Initiate evacuation of the area, if necessary.
- Initiate reporting actions.

WQA-33 Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing

and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.

WQA-34 In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Companies.

WQA-35 If construction activity occurs within a wetland with standing water or a flowing stream, prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and “wet” wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F –Framework Stormwater Pollution Prevention Plan).

WQA-36 Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations:

- Shovels
- Absorbent pads/materials
- Personal protective gear
- Medical first-aid supplies
- Bung wrench (nonsparking)
- Phone list with emergency contact numbers
- Storage containers
- Communications equipment

WQA-37 The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel. Persons accountable for carrying out spill response activities will be designated prior to construction and informed of their specific duties and

responsibilities with respect to environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous Materials Management Plan. At a minimum, this training shall include the following:

- An overview of regulatory requirements
- Methods for the safe handling/storage of hazardous materials
- Spill prevention procedures
- Emergency response procedures
- Use of personal protective equipment
- Use of spill cleanup equipment
- Procedures for coordinating with emergency response teams
- Procedures for notifying agencies
- Procedures for documenting spills
- Identification of sites/areas requiring special treatment, if any

WQA-38 Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.

WQA-39 Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible, including:

- current threats to human health and safety, include known injuries, if any
- spill location, including landmarks and nearest access route
- reporter's name and phone number
- time spill occurred
- type and estimated amount of hazardous materials involved
- potential threat to property and environmental resources, especially streams and waterways
- status of response actions

WQA-40 The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site.

- Wyoming DEQ (24 hours) at (307) 777-7781.
- Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610.
- If spill threatens human health, call 911, and the appropriate county response center.
- National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171.

The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.

WQA-41 When a spill poses a direct and immediate threat to health and safety and/or property, the land management agency and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.

WQA-42 The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.

WQA-43 The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident):

- time and date of each log entry
- name of individual recording log entry
- list of all agencies notified, including name of individual notified, time, and date
- type and amount of material spill
- resources affected by spill
- list of response actions taken, including relative success
- copies of letters, permits, or other communications received from government agencies throughout the duration of the spill
- copies of all outgoing correspondence related to the spill

- photographs of the response effort (and surrounding baseline photographs if relevant)

WQA-44 During the Project's operation and maintenance phase, the Companies will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Companies and all operations and maintenance subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.

7.0 EMERGENCY CONTACTS

Table 6-1 contains a list of federal and state contacts in the event of a hazardous chemical emergency.

Table 6-1. Federal and State Emergency Contacts

Agency to be Contacted	Contact Name	Phone/Address
Federal		
USEPA Region 10 Emergency Response Center	–*	–*
USEPA Region 8 Emergency Response Center	–*	–*
BLM, Casper Field Office	–*	–*
BLM, Rawlins Field Office	–*	–*
BLM, Rock Springs Field Office	–*	–*
BLM, Kemmerer Field Office	–*	–*
BLM, Pocatello Field Office	–*	–*
USFS, Medicine Bow-Routt National Forests	-*	-*
USFS, Caribou-Targhee National Forest	-*	-*
State		
Wyoming Department of Environmental Quality	–*	–*
Idaho Department of Environmental Quality	–*	–*

* To be provided in Final SPCC Plan

APPENDIX H
PLANT AND WILDLIFE CONSERVATION MEASURES PLAN

Appendix H

Plant and Wildlife Conservation Measures Plan

Gateway West Transmission Line Project

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion of three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, show the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Plant and Wildlife Conservation Measures Plan (Plan) was prepared for Segment D because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

The Construction Contractor will be responsible for ensuring preconstruction surveys (see Section 5.0) and surveys to be performed to support variance requests (see Section 4.9) are performed, and maps are updated to reflect environmentally sensitive areas once surveys are complete.

1.1 Purpose and Objective

The purpose of this Plan is to assist the BLM, USFS, and the Companies in meeting their obligations to protect biological resources during the construction, operation, and

maintenance of the Project. The objective of this Plan is to present a comprehensive, Project-specific plant, fish, and wildlife conservation plan that does the following:

- Provides consistency across jurisdictions;
- Meets the intent of the current BLM and USFS management guidance for federal lands; and
- Balances cost, practicality, and feasibility of Project implementation with avoiding or minimizing environmental impacts.

1.2 Contents

The Plan includes information on (1) regulatory requirements and agency concerns pertaining to biological resources, (2) avoidance and minimization conducted during siting and routing of the Project to avoid impacts to biological resources, and (3) specific environmental protection measures (EPMs) to be implemented if state- or federally listed species, BLM sensitive species, or USFS sensitive species (collectively referred to as special status species or threatened, endangered, or sensitive [TES] species) or their habitats are identified within, or adjacent to, the Project right-of-way (ROW). In addition to special status species, EPMs also address general wildlife including big game, raptors, and migratory birds.

1.3 Project Description

Appendix B of the Plan of Development (POD), of which this plan is a part, provides detailed information regarding the components of the transmission system including the transmission structures, roads and other ancillary facilities, communications system, and the substations. It also provides detailed information on construction methods, construction schedule, operation and maintenance, and proposed decommissioning.

2.0 REGULATORY FRAMEWORK

The following provides a brief overview of federal and state legislation and regulatory compliance applicable to biological resources in the Project area that have been considered in the development of this plan.

2.1 Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) of 1973, the U.S. Fish and Wildlife Service (USFWS) has authority over actions that may affect the continued existence of a species federally listed as threatened or endangered. Take of federally listed species is prohibited without specific exceptions or permits issued under Sections 7 or 10 of the ESA. Under the ESA, the definition of “take” includes to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. The USFWS has further defined harm to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Federal agencies must consult with the USFWS under Section 7 of the ESA on actions they authorize, fund, or carry out to insure these actions are not likely to jeopardize the

continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

BLM, as the lead federal agency in preparation of the EIS for the Project, consulted with USFWS on the potential effects of the Project on federally listed species. A biological assessment (BA) was prepared to assess the effects of the Project on threatened and endangered wildlife, fish, and plant species identified by the USFWS.

2.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 United States Code [U.S.C.] 668) applies primarily to taking, hunting, and trading activities that involve bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*). The act prohibits the taking of any individuals of these two species, as well as any part, nest, or egg. The term “take” as used in the act includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb (16 U.S.C. 668).

2.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory bird, part, nest, or egg of such bird listed in wildlife protection treaties among the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former USSR. This act also contains a clause that prohibits baiting or poisoning of these bird species. A list of species covered by MBTA can be found in Title 50, Code of Federal Regulations, Section 10.13. The MBTA applies to many bird species, including raptors, and protects them from prohibited activities during construction, operation, and maintenance of the Project.

2.4 Land-Management Plans

Land management Plans (LMPs) provide management guidance and desired population and habitat conditions for biological resources on both BLM- and USFS-managed lands within the Project area (Table 2-1). BLM Resource Management Plans (RMPs) and USFS Land and Resource Management Plans (Forest Plans) that contain specific temporal and spatial restrictions for a given species are not always consistent across jurisdictions. LMPs from both Wyoming and Idaho contain phrases such as “avoidance where possible”, “request”, “recommend”, “review on a case-by-case basis”, and “exceptions may be made” indicating many of the stipulations and restrictions need to be reviewed on a species-by-species basis within each field office or national forest.

This Plan and Volume II, map sets 1 and 2, represent the current understanding of how specific biological resource temporal and spatial restrictions will be applied. However, the Construction Contractor will be responsible for confirming with the applicable agencies prior to implementation that the application of temporal and spatial restrictions, as shown in Volume II maps, is consistent with agency expectations.

Table 2-1. Land Management Plans for the Project

Segment/Alternative	Administrative Unit	Applicable Plan Name	Plan Year
Wyoming			
1W(a), 1W(c)	Casper BLM Field Office	Casper RMP	2007
1W(a), 1W(c)	Medicine Bow-Routt National Forests	Medicine Bow National Forest Revised Forest Plan	2003
1W(a), 1W(c), 2	Rawlins BLM Field Office	Rawlins RMP	2008
3, 4	Rock Springs BLM Field Office	Green River RMP	1997
4	Kemmerer BLM Field Office	Kemmerer RMP	2010
Idaho			
4	Pocatello Field Office	Pocatello RMP	2012
4	Caribou-Targhee National Forest	Revised Forest Plan for the Caribou National Forest	2003

BLM – Bureau of Land Management; RMP – Resource Management Plan; Forest Plan – Land and Resource Management Plan

2.5 Bureau of Land Management – Special Status Species Management Policy

BLM Manual 6840, Special Status Species Management Policy (BLM 2008a), authorizes each BLM State Director to designate and protect sensitive species on lands managed by the BLM. Under this authority, the BLM has developed lists of sensitive wildlife and plant species for BLM-administered lands in Wyoming and Idaho. Species designated as sensitive by the BLM may require specific protection measures.

2.6 Executive Order 13112 – Invasive Species

Executive Order (EO) 13112 (Invasive Species) requires federal agencies prevent the introduction and spread of invasive species and “not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.”

2.7 Executive Order 11990 – Wetlands

EO 11990 (Wetlands) requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

2.8 Executive Order 13186 – Migratory Birds

EO 13186 (Migratory Birds) requires federal agencies to protect migratory birds and to consider impacts on migratory bird species during Project planning.

2.9 Executive Order 13443 – Hunting Heritage

EO 13443 (Facilitation of Hunting Heritage and Wildlife Conservation) requires federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

2.10 Sections 401, 402, and 404 of the Clean Water Act

Sections 401, 402, and 404 of the Clean Water Act regulate drainage and discharge of dredged or fill materials into waters of the United States, including wetlands.

2.11 Federal Land Policy Management Act of 1976

In accordance with the Federal Land Policy Management Act, the BLM and USFS must make land use decisions based on principles of multiple use and sustained yield. As such, a grant of ROW must be limited to its necessary use and must contain terms and conditions that reflect BLM's and USFS's management responsibilities under the Federal Land Policy Management Act, including minimizing impacts on fish and wildlife habitat.

2.12 National Forest Management Act of 1976

The National Forest Management Act of 1976, as amended, and its implementing regulations under 36 Code of Federal Regulations 219, consolidate and articulate the USFS's management responsibilities for lands and resources of the National Forest System (NFS). The National Forest Management Act of 1976 requires each national forest to develop a management program and identify Management Indicator Species. The Management Indicator Species are used to establish forest plan objectives for wildlife and fish habitats and to estimate the effects of forest plans and projects on overall forest health.

2.13 BLM Instruction Memorandum UT-IM-2010-071

Instruction Memorandum (IM) UT-IM-2010-071 (BLM 2010a) identifies management actions necessary at some sites to ensure environmentally responsible exploration, authorization, leasing, and development of renewable and nonrenewable energy resources within the ranges of the Gunnison sage-grouse (*Centrocercus minimus*), which does not occur within the Project area, and the greater sage-grouse (*C. urophasianus*; sage-grouse), which does occur within the Project area.

2.14 BLM Instruction Memorandum 2012-043

IM 2012-043 (BLM 2011) supplements IM-2010-071 and provides interim conservation policies and procedures for activities that affect the greater sage-grouse and its habitat, including the introduction of the terms Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). PPH comprises areas that have been identified as having the highest conservation value, including breeding, late brood-rearing, and winter concentration areas. PGH comprises areas of occupied seasonal or year-round habitat outside of priority habitat.

2.15 BLM Instruction Memorandum WY-IM-2013-005 (Migratory Bird Conservation Policy)

Wyoming Instruction Memorandum (WY-IM)-2013-005 (BLM 2012b) provides interim management guidance for migratory bird conservation policy on Wyoming BLM-administered public lands, including the federal mineral estate. This IM states that the BLM may require additional mitigation for impacts to migratory bird habitat.

Implementation of this instruction memorandum is intended to ensure consistency across Wyoming BLM field offices in applying conservation and protection measures for BLM authorized activities affecting migratory birds and their habitats.

2.16 BLM Instruction Memorandum WO-IM-2008-204 (Off-site Mitigation)

This IM (BLM 2008c) outlines policy for the use of off-site mitigation for authorizations issued by the BLM. Off-site mitigation consists of compensating for resource impacts by replacing or providing substitute resources or habitat at a different location than the project area. Off-site mitigation is supplemental to on-site mitigation and is used to enhance the BLM's ability to fulfill its mission of providing multiple uses on the public lands, while ensuring its resource management objectives are met.

2.17 U.S. Forest Service Manual 2670

USFS Manual 2600, Chapter 2670 (USFS 2005) directs each Regional Forester to designate sensitive species on public lands administered by the USFS. Per the manual, sensitive species are defined "as plant or animal species identified by a Regional Forester for which population viability is a concern, as evidenced by a significant current or predicted downward trend in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce an existing distribution of the species."

USFS Manual 2670 also establishes the following management direction and objectives for USFS sensitive species:

- Maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on USFS-administered lands.
- Review programs and activities as part of the National Environmental Policy Act of 1969 process, through a biological evaluation, to determine their potential effect on sensitive species.
- Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.

The Project's compliance with these objectives and direction was evaluated in the Biological Evaluations for the Caribou-Targhee (USFS 2013a) and Medicine Bow-Routt (USFS 2013b) National Forests. The EPMs described in this Plan will ensure that the Project is constructed, operated, and maintained in compliance with USFS Manual 2670.

2.18 Memorandums of Understanding to Promote Conservation of Migratory Birds

BLM Memorandum of Understanding WO-230-2010-04 (BLM and USFWS 2010) directs the BLM to evaluate the effects of BLM's actions on migratory birds on a project level and implement approaches to reduce these effects.

USFS Agreement #08-MU-1113-2400-264 (USFS and USFWS 2008) identifies specific activities where cooperation between these parties will contribute to the conservation of migratory birds and their habitats.

2.19 State Comprehensive Wildlife Conservation Strategies

The Idaho Department of Fish and Game (IDFG) and Wyoming Game and Fish Department (WGFD) have published Comprehensive Wildlife Conservation Strategies (CWCS) aimed at encouraging land-management activities that conserve and enhance wildlife habitat (IDFG 2005; WGFD 2005). These State Conservation Strategies/Plans were established to create a conservation plan to conserve the states' Species of Greatest Conservation Need (SGCN) and to provide a common framework that would enable conservation partners (federal, state, and private) to jointly implement a long-term approach for the benefit of SGCN.

2.20 Idaho Key and Restoration Habitats

Idaho (in a combined effort between the BLM and IDFG) has identified Key Habitats, which are defined as areas of generally intact sagebrush that provide sage-grouse habitat during some portion of the year including winter, spring, summer, late brood-rearing, fall, transition sites from winter to spring, spring to summer, and summer/fall to winter. In addition to Key Habitats, Idaho has also identified Restoration (R)1, R2, and R3 habitats. These classifications are used for general sage-grouse conservation planning purposes.

2.21 Idaho Governor's Executive Order 2012-02 (Sage-Grouse Task Force)

On March 9, 2012, Idaho Governor's EO 2012-02 (State of Idaho 2012) was issued to establish the Idaho Sage-Grouse Task Force. The intent of the Task Force and EO 2012-02 is to provide long-term protection to Idaho's sage-grouse populations by addressing primary and secondary threats described in the EO. In addition to recommending conservation measures to avoid and minimize impacts to sage-grouse, the Task Force's recommendations include the establishment of new sage-grouse habitat designations (similar to the Idaho Key, PPH, and PGH discussed earlier; State of Idaho 2012). These new sage-grouse habitat designations by the Task Force include "Core Habitat" (CHZ), "Important Habitat" (IHZ), and "General Habitat" (GHZ). The Governor's Alternative was finalized in September 2012 and provided to BLM for inclusion as an alternative in the current national sage-grouse EIS process aimed at updating the BLM's RMPs (as part of the BLM's National Greater Sage-Grouse Planning Strategy). A decision on an alternative for BLM's National Greater Sage-Grouse Planning Strategy/ RMP amendment will not be made until later in 2014.

2.22 Wyoming Governor's Executive Order 2011-5 (Wyoming Sage-Grouse Core Areas)

The Governor of Wyoming established EO 2011-5 (State of Wyoming 2011), which designates Sage-Grouse Core Population Areas (Core Areas) and requires that new transmission lines be constructed within 0.5 mile of existing 115-kV or larger transmission lines, or within a 2-mile-wide corridor established by the Governor. The State of Wyoming views the use of these designated corridors as mitigation and

requires no additional mitigation for projects routed within these corridors. The Project is located within the Governor's corridor and is therefore in compliance with the Wyoming Governor's EO 2011-5.

2.23 Platte River Recovery Implementation Program

The Platte River Recovery Implementation Program (PRRIP) directs the USFWS to consider indirect effects of water withdrawals from the Platte River watershed. Water withdrawals may be necessary for construction dust control and concrete manufacture associated with the Project; however no new water depletions to the North Platte River Basin are proposed. Temporary water use agreements allowing for no new net depletions and/or water from wells considered not hydrologically connected to the North Platte River or its tributaries will be used. In the event the Construction Contractor proposes water withdrawals that may result in new water depletions, the Construction Contractor will be responsible for conducting any required agency consultation and abiding by the subsequent agency reevaluation.

Federally listed species that could be affected by flow depletion in the Platte River watershed are the pallid sturgeon (*Scaphirhynchus albus*), interior least tern (*Sterna antillarum*), whooping crane (*Grus americana*), piping plover (*Charadrius melodus*), and western prairie fringed orchid (*Platanthera praeclara*), as well as critical habitat for the whooping crane. The eastern end of the Project drains into the Platte River watershed. None of the ESA-listed wildlife species covered under the PRRIP or their critical habitat are found in the Project area (USFWS 1988, 1990b; CWS and USFWS 2007; 43 Federal Register 20938); however, they do occur downstream.

2.24 Upper Colorado Endangered Fish Recovery Program

The Upper Colorado Endangered Fish Recovery Program (UCEFRP) enacts conservation measures to minimize adverse effects to four endangered fish (Colorado pikeminnow [*Ptychocheilus lucius*], razorback sucker [*Xyrauchen texanus*], humpback chub [*Gila cypha*], and bonytail chub [*Gila elegans*]) and their critical habitat within the Colorado River. This program dictates effects on these four listed fish and their critical habitat from water withdrawals anywhere upstream of where these fish and their critical habitat occur. None of the four ESA-listed fish covered under the UCEFRP or their critical habitat are found in the Project area (USFWS 1990a, 2002a, 2002b, 2002c; 59 Federal Register 13374); however, they do occur downstream.

3.0 PLANT, FISH, AND WILDLIFE CONCERNS AND ISSUES

Biological resource concerns and issues were identified throughout the planning stages of the Project. Geographic information system (GIS) data and qualitative input from the USFWS, BLM, USFS, IDFG, and WGFD regarding known and potential locations of special status species and their habitats in the Project area were acquired and reviewed. Several biological resources of concern that potentially occur within the Project area were identified, including:

- Federally listed species;

- Wildlife, fish, and plant species managed by the agencies as sensitive or special status;
- Raptors and their nesting habitats;
- Crucial seasonal habitats for pronghorn antelope, bighorn sheep, moose, mule deer, and elk;
- Migratory birds; and
- Noxious weeds.

The following steps were taken by the Companies to determine which species and habitats to consider for avoidance, minimization, and conservation measures:

- Identified potential habitats and special-status species that may occur along the proposed corridor using available data from federal and state wildlife agencies, the BLM, and the USFS;
- Discussed habitat types and special status species at kickoff meetings with agency resource specialists to identify which species are of greatest concern in the Project area;
- Refined the list of species and habitats to be addressed in Project plans through several subsequent meetings with state and federal agency resource specialists; and
- Performed focused surveys along portions of the route for rare plants, raptors, sage-grouse, flammulated owls and northern goshawks.

These efforts identified the known or potential presence of BLM, USFS, and state sensitive plant, fish and wildlife species, federally listed and candidate species, active raptor nests, and big game habitats within the Project area. Federal agencies have required EPMs for some impacts identified to ensure the Project is consistent with management objectives for these resources.

3.1 General Project Impacts and Plan Priorities

EPMs for the Project were designed to reduce three basic types of Project-related impacts on plant, fish, and wildlife resources: (1) disturbance and displacement, (2) habitat loss and fragmentation, and (3) plant, fish, and wildlife mortality. This section describes the impact types evaluated for each resource, thereby identifying Plan priorities used to develop and apply EPMs.

3.1.1 Disturbance and Displacement

The Project will result in disturbance and displacement of plants, fish, and wildlife within and adjacent to the Project area. Disturbance and displacement of wildlife includes temporary changes in habitat use related to construction activities and potential for long-term changes related to the presence of Project features and increased human activity (annual inspections) associated with operation and maintenance of the Project and potential for increased public access. Disturbance and displacement of fish species includes temporary changes in habitat use related to increased turbidity associated with stream crossings. Disturbance and displacement of plant species includes effects

related to increases in erosion and dust associated with the Project, the creation of temporary work areas during construction, operation, maintenance, and physical disturbance associated with new public access.

3.1.2 Habitat Loss and Fragmentation

The Project will result in the permanent loss and fragmentation of plant and wildlife habitat due to clearing and grading for access roads, work areas, and substation sites; installation of transmission structures; and vegetation management within the ROW. These actions will remove or alter plant and wildlife habitat within the ROW to accommodate Project features. Habitats outside of the ROW could experience reduced suitability for plant and wildlife species as the linear Project may fragment previously connected populations. The Project may also impact plant and wildlife habitat by increasing the potential for the establishment and spread of noxious weeds and the frequency of human-caused wild fire. The Project may impact fish habitat by potentially introducing aquatic invasive species and reducing cover and organic input where riparian vegetation is removed. Improperly installed culverts may fragment stream habitats and compromise stream stability.

3.1.3 Plant, Fish, and Wildlife Mortality

Implementation of the Project will result in mortality of plants and wildlife in the Project area, and may result in mortality of fish in the Project area. Plant species and wildlife species with limited mobility will experience mortality during vegetation management, clearing, and grading operations associated with construction, operations, and maintenance of the Project. Wildlife species that occupy burrows may experience mortality if burrows are damaged by heavy machinery. The Project will also result in increased potential for avian mortality due to collisions with shield wires/fiber optical ground wire and/or conductors. The presence of transmission line structures will increase perching and roosting habitat for raptors and ravens, and may lead to increased predation of wildlife that are prey to these species. Use of pesticides for vegetation management within the ROW will result in plant mortality. Additionally, the creation of new access roads may increase public accessibility and associated plant mortality from trampling and vehicle trespass, and may increase wildlife mortality from hunting, poaching, and vehicle collisions. High levels of suspended sediment and associated high turbidity resulting from construction activities, as well as potential introduction of hazardous materials into surface waters, can cause mortality of aquatic organisms, including fish and their prey. Increased public accessibility may also increase fish mortality from fishing.

3.2 Avoidance and Minimization during Siting and Routing

The Companies approached avoidance and minimization of impacts through data collection, careful routing and siting of the proposed facilities, field surveys, habitat mapping, and construction scheduling. As discussed above, GIS data and qualitative input from the USFWS, BLM, USFS, IDFG, and WGFD regarding known and potential locations of special status species and their habitats in the Project area were acquired and reviewed. These data were used to develop the list of special status species of concern in the Project area.

At the request of the agencies, focused surveys were conducted along portions of the Project where suitable or potential habitat was identified for sage grouse and nesting raptors including owls and goshawks. A comprehensive Project-wide habitat mapping effort, which included aerial photography acquisition, identified habitats in the Project area for selected special status species. Based on the results of the habitat mapping, the Companies identified areas within the corridor where species-specific surveys may be necessary to either inform ROW refinement or specify where and when conservation measures apply. Other plant and wildlife resources (such as big game winter range and calving and fawning areas), as well as temporal avoidance of sensitive resources, were also taken into consideration during design of the Project.

The details of the Companies' environmental compliance program, including roles and responsibilities, monitoring, and reporting, are detailed in Appendix C – Environmental Compliance Management Plan.

3.3 Development of Conservation Measures

After taking into consideration Project impacts to wildlife, fish, and plant resources, the Companies recognized the need for additional measures to minimize the impact from construction, operation, and maintenance of the Project. The Companies used the following steps to develop the measures found in Section 4 of this Plan:

- Identified and reviewed the BLM and USFS LMPs applicable to the Project area (Table 2-1);
- For each LMP, surface-use stipulations specific to each species of concern were reviewed;
- Identified inconsistencies in requirements among jurisdictions;
- Determined exception or waiver criteria if applicable;
- Used USFWS avoidance recommendations when applicable;
- Incorporated IDFG and WGFD species-specific management recommendations; and
- Evaluated the stipulations on a resource-by-resource basis, developed the proposed Project-wide temporal and spatial restrictions, and identified where and when exceptions may need to be requested.

These measures and additional measures identified by the agencies were presented in the Draft Environmental Impact Statement (EIS). Based on public comments and additional agency review, a final list of EPMs was presented in the Final EIS. This Plan identifies EPMs that will be implemented to protect biological resources in the Project area. Additional EPMs, including stipulations to minimize disturbance levels and further detail regarding reclamation practices, can also be found in Section 5 – Environmental Protection Plans and Documents of the POD, Appendix D – Framework Reclamation Plan, Appendix E – Framework Noxious Weed Plan, Appendix F – Framework Stormwater Pollution Prevention Plan (SWPPP), and Appendix I – Framework Stream, Wetland, Well, and Spring Protection Plan.

4.0 BIOLOGICAL RESOURCE ENVIRONMENTAL PROTECTION MEASURES

This section of the Plan includes (1) responsibilities of biological monitors, (2) a discussion of how EPMs will be applied based on land ownership and associated geographical distribution, (3) EPMs designed to avoid or minimize Project impacts to plant, fish, and wildlife resources previously identified in Section 3.1 – General Project Impacts and Plan Priorities, and (4) a description of the process for making requests for exceptions to seasonal and spatial restrictions.

General EPMs applicable to many or all species groups are presented first, followed by EPMs tailored to species groups. Each section includes (1) an overview of each resource's presence in the Project area, (2) resource specific agency concerns and impacts for which EPMs were identified, and (3) EPMs to address concerns and reduce resource impacts during the design, construction, operation, and maintenance of the Project. A complete list of all EPMs and their applicability is included as Appendix Z of the POD. EPMs specific to biological resource protection are included as Attachment H-1.

4.1 Biological Monitoring

A third-party Compliance Inspection Contractor (CIC) will be hired by the Companies and will report to the BLM. The CIC will employ environmental and biological monitors to oversee resource-specific compliance. In addition, the Construction Contractor will employ Environmental Inspectors to ensure the Project maintains compliance with all Project-specific permitting documents and landowner agreements throughout Project construction and reclamation.

At a minimum, the CIC monitors are required to be on the ROW when construction activities have the potential for significant surface disturbance or harm to sensitive resources (see Appendix C – Environmental Compliance Management Plan of the POD, Section 3.2.3). Exceptions can be made should the CIC, using professional judgment and in consultation with the BLM, determines that reductions in presence would not adversely impact compliance oversight.

The Construction Contractor will employ Environmental Inspectors (see Appendix C – Environmental Compliance Management Plan of the POD, Section 3.3.5), who will be present on each active construction segment to ensure compliance with all environmental laws and regulations, including Project-specific permitting documents and landowner agreements, during Project construction. The number of Environmental Inspectors at a given construction spread may vary depending on the construction activity, size of the area subject to disturbance, and location.

The responsibilities of the Environmental Inspectors during construction would include, but not be limited to, the following:

- Identification of resource presence/absence in biologically sensitive areas;
- Daily briefing of construction crews outlining restrictions associated with biologically sensitive areas;

- Verification that construction work areas, access roads, and features such as wetlands or sensitive habitat are properly marked and flagged prior to ground disturbance in a given area; and
- Has the authority to stop work when construction activities violate environmental laws, regulations, or Project-specific permitting documents.

The Construction Contractor will be responsible for:

- Ensuring that EPMs which minimize impacts on plant and wildlife resources are implemented,
- Conducting preconstruction botanical and wildlife surveys,
- Conducting surveys to support variance requests, and
- Conducting biological monitoring of construction activities in biologically sensitive areas or during periods of heightened sensitivity.

The Construction Contractor will employ qualified biologists, approved the Companies and BLM, to conduct such tasks.

4.2 Applicability

The Companies plan to apply the biological resources EPMs as follows:

- The Wyoming segments of the proposed Project cross a relatively large percentage of federal land, and private lands tend to be unsigned and isolated sections of land in a checkerboard pattern. Therefore, in Wyoming, the EPMs will be applied to the entire segment (i.e., including the private and state land) except as follows:
    - Proposed substation and regeneration sites located on private land unless they are standard EPMs of the Companies;
    - EPMs that are only applicable to a specific BLM Field Office;
    - EPMs that are only applicable to NFS lands; and
    - Private property if different practices are requested by the property owner and do not violate the law.
- In Idaho, Segment 4 is predominantly private ownership in agriculture and other development, and for the most part, the federal land in this segment is clustered. In this segment, plant, fish, and wildlife EPMs will be applied based on ownership as identified in Table H-1-1 of Attachment H-1 of this Plan except as follows:
    - Proposed substation and regeneration sites located on private land unless they are standard EPMs of the Companies; and
    - Private property if different practices are requested by the property owner and do not violate the law.

4.3 General EPMs for Plants, Fish, and Wildlife

4.3.1 Background

Many Project EPMs are applicable across species groups, including those that address preconstruction surveys, restriction of public access, preservation of existing vegetation, use of existing stream crossings, proper application of pesticides and invasive species control, Project personnel training, avoidance areas, reclamation BMPs, minimization of ground disturbance, speed limits on Project roads, and protection of wetlands and water quality.

Disturbance and displacement, habitat loss and fragmentation, and mortality are general Project impacts that could apply to all plants, fish, and wildlife.

4.3.2 Environmental Protection Measures

G-4 All wildlife and plant surveys/preconstruction surveys will be considered as “casual use” activities and will not be restricted or prevented to occur due to overlapping season and temporal restrictions.

OM-6 The Agencies may restrict general public access to closed federal or state roads and access roads that the Companies maintain (the Companies will maintain access roads constructed for the Companies’ use only). In cases of restricted access, the Companies will physically close the road with a gate. Gates will be locked with both a lock supplied by the Companies and with a federal agency lock. Access management will be updated as necessary to reflect current road closures and gate locations.

OM-9 Where possible, low-growing vegetation and small tree species within the ROW that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other “hot spots” (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.

OM-19 The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.

OM-20 Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.

OM-21 Prior to the start of O&M activities, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant and wildlife species and habitats. If a contractor is used, the construction contract will address (a) the sensitive plant species that may be present in a particular area based on previous surveys and literature review; (b) the federal and state laws regarding protection of plants and wildlife; (c) the importance of these resources; (d) the purpose and necessity of protecting them; and (e) methods for protecting sensitive resources (e.g., Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and BLM wildlife policy).

OM-24 The Companies will provide crews and contractors with maps showing environmentally sensitive areas; these maps will include work zones as well as ROW areas where ground disturbance will be avoided.

REC-2 Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.

REC-3 Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.

REC-4 Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The final Reclamation Plan will discuss those options, as applicable.

REC-5 All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, an pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (BLM 2007a; http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.

REC-6 Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a

licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.

REC-7 All areas treated will be documented using GPS technologies and included in the annual report.

REC-8 Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread.

REC-9 Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.

REC-10 When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the final Reclamation Plan.

REC-11 Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.

REC-12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.

REC-13 Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.

REC-14 Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil would be returned to the

area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.

REC-15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

REC-16 The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

REC-18 Topsoil and sub-surface soils will be replaced in the proper order during reclamation.

REC-23 The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the final Reclamation Plan and be consistent with the SWPPP.

REC-24 Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1-inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed; to remove air pockets.

REC-25 Drill seeding will be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth.

REC-26 Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydroseeding/hydromulching, which is the spraying of seeds, mulch and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25 percent.

REC-27 Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils.

REC-28 If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring.

REC-29 Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).

VEG-1 During construction, blading of native plant communities will be minimized, consistent with safe construction practices. Where feasible, shrubs will be cut at or near ground level to facilitate re-growth after construction. The footprint of construction and operations facilities will be kept to the minimum necessary. Blading near watercourses will be minimized and BMPs identified in the SWPPPs will be implemented to reduce the risk of materials entering watercourses.

VEG-2 Where feasible, locate new access roads to minimize the number of trees removed during construction. However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed).

VEG-3 In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.

VEG-4 Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagates. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations would not also become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the final Reclamation and Noxious Weed Plans.

VEG-5 The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.

VEG-6 The Companies will consult with the appropriate land management agency to determine tree seedlings to be planted in decommissioned roadbeds and other temporarily disturbed areas on federally managed lands (where trees were removed) to assure seedlings are matched to site conditions.

VEG-7 The Companies will notify the USFS when topsoil salvage operations are scheduled and seek assistance with field identification of top soil material.

VEG-8 Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Companies only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years, post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Companies will not be required to treat noxious weeds for more than 3 years.

VEG-9 The Companies will meet the terms and stipulations within the timber sale contracts for timber removal operations on the Medicine Bow-Routt, Caribou-Targhee, and Sawtooth National Forests (NFs).

Note that the Sawtooth NF is not crossed by Segment D.

WET-1 Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH; USFS 1995) buffers will be followed.

WET-3 Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land managing agency. The Companies and/or Construction Contractor will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.

FISH-3 All wetlands and waters in the Project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any

equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.

WILD-1 Requests for exceptions from closure periods and areas will be submitted by the Companies or the Construction Contractor per the Companies' direction to the appropriate BLM Field Office in which the exception is requested through the Environmental CIC. Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Companies and approved by the agency will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed Action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The Authorized Officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the USFS.

WILD-11 Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.

WQA-23 Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.

WQA-24 On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.

WQA-25 All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.

WQA-26 Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region (USFS 2003c).

WQA-27 On non-federal lands, culvert placement should comply with state BMPs.

BLA-2 All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).

4.4 Raptors

4.4.1 Background

In addition to a review of publicly available data and coordination with the agencies regarding the presence of raptors in the Project area, aerial raptor nest surveys were conducted in 2008 along specific portions of the Project area for which the BLM and USFS determined that known nest location data were deficient. Additionally, ground-nesting raptor surveys were conducted within a limited area under the jurisdiction of the Rawlins Field Office during late spring/early summer of 2008 (Tetra Tech 2008). No active raptor ground nests were observed.

Surveys for the northern goshawk (*Accipiter gentilis*) and flammulated owl (*Otus flammeolus*) were conducted within the Caribou-Targhee National Forest and for the northern goshawk within the Medicine Bow-Routt National Forests (Tetra Tech 2010b, 2010c). Existing nests that were located during these surveys were determined to be inactive. No additional nests for either species, beyond those already identified within existing databases, were located during the northern goshawk and flammulated owl surveys.

The entirety of Segment D was subject to aerial nest surveys in April 2012. A total of 65 active raptor nests were observed within 1 mile of Segment D in 2012. The most common species observed actively nesting were red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), and prairie falcon (*Falco mexicanus*). Other species observed nesting within 1 mile of the Project include great-horned owl (*Bubo virginianus*), american kestrel (*Falco sparverius*), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), long-eared owl (*Asio otus*), and short-eared owl (*Asio flammeus*).

4.4.2 Concerns

Direct impacts on raptors during construction, operation, and maintenance could include collision with Project structures, electrocution on distribution lines, disturbance due to construction noise, fugitive dust, and visual disturbance. Raptors are particularly sensitive to disturbance while building a nest and brooding, and some construction activities could cause nest failure or abandonment (Richardson and Miller 1997). In order to minimize this risk, the Companies will adhere to temporal and spatial restrictions and monitoring requirements enforced by the agencies on federally managed land to reduce disturbance to nesting raptors. On private lands in Wyoming and Idaho, the Companies will apply timing restrictions and spatial buffers suggested by the USFWS (USFWS 2002d). The Construction Contractor shall adhere to the restrictions as presented in Attachment H-2 – Seasonal and Spatial Restrictions.

4.4.3 Environmental Protection Measures

In addition to the general EPMs listed in Section 4.3 – General EPMs for Plants, Fish and Wildlife, the following EPMs will be implemented to avoid and minimize Project impacts to raptors (see also Section 4.6 – Migratory Birds):

OM-27 All on-site personnel will be made aware that all birds of prey are protected by federal and state laws.

WILD-3 The Project will be designed and constructed in compliance with Avian Power Line Interaction Committee (APLIC) guidance (APLIC 2006, 2012) in order to reduce impacts to avian species. Any changes to the Project's design, as requested by federal, state, or local jurisdictions, as well as any changes considered by the Companies, will also be in compliance with APLIC guidance.

WILD-4 Preconstruction pedestrian or aerial nest surveys will be conducted in suitable habitat during the appropriate nesting time periods needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests. Appropriate buffers will be applied to active nests during construction. All encounters of nesting raptors in the survey area will be reported to the biological monitor and to appropriate agencies.

WILD-6 Guy wires will be marked with bird deterrent devices on federal lands to avoid avian collisions with structures, as directed by local land manager.

WILD-7 Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Table 4-1. Additional locations may be identified by the Agencies or the Companies. The flight diverters will be installed as directed in the Companies' approved Avian Protection Plans and in conformance with the MBTA and Eagle Acts as recommended in the current APLIC collision manual.

Table 4-1. River Crossings Where Flight Diverters Would Be Installed in Order to Reduce the Potential for Avian Collisions

Waterbody	Segment	Crossing Mileposts			
		First	Second	Third	Fourth
Platte River	Proposed 1W(a)	1.9	–	–	–
Platte River	Proposed 1W(c)	0.4			
Medicine Bow River	Proposed 2	0.9	–	–	–
Bear River	Proposed 4	125	149.9	150.5	173.9
Green River	Proposed 4	52.1	–	–	–
Hams Fork River	Proposed 4	104.9	–	–	–

WILD-8 Preconstruction pedestrian or aerial surveys will be completed during appropriate nesting time periods, needed to identify each raptor species. The Companies will provide survey results to the Authorized Officer for approval. (See WILD-1)

WILD-12 The Companies will annually document the presence and location of large stick nests on any towers constructed as a result of this Project. Nests will be categorized to species or species group (raptors or ravens), to the extent possible. This will begin following the first year of construction and continue through year 10 of operations. Results will be provided annually to the applicable land-management agency and to the USFWS.

Note that this is an agency imposed measure.

4.5 Big Game

4.5.1 Background

The Project area contains wintering habitat, including designated winter range for elk (*Cervus elaphus*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*). These areas are important to the health of large ungulate populations because the winters on the Wyoming steppe and in the Idaho foothills can be very harsh. Similarly, the Project would cross through important parturition areas, which the various large ungulate species use to give birth and hide their young.

4.5.2 Concerns

Direct impacts to big game from Project construction, operation, and maintenance could include vehicle collisions, noise, habitat loss, and visual disturbance, which is a change in the viewshed of the animal that is perceived as alarming.

4.5.3 Environmental Protection Measures

In addition to the general EPMs listed in Section 4.3 – General EPMs for Plants, Fish, and Wildlife, the following EPMs will be implemented to avoid and minimize Project impacts to big game:

OM-4 Although routine and corrective O&M is of limited duration and impact, the Companies will attempt to adhere to specific closure periods and

areas and are proposing not to conduct any routine and corrective O&M activities during the timeframes and at the locations identified in Appendix R of the POD to the greatest extent practical. The appropriate federal or state agency will notify the Companies of any spatial or temporal restrictions that are in effect for the Project area (e.g., fire restrictions) that would be applicable to corrective O&M activities.

WILD-2 Vehicular speeds during construction and operations will be limited to 25 mph on all unsurfaced access roads. Crew and vehicle travel will be restricted to designated routes while on state designated big game winter range (except for areas within the ROW).

4.6 Migratory Birds

4.6.1 Background

More than 230 species of birds occur regularly in the vicinity of the Project. Of these, nearly all are protected under the MBTA.

4.6.2 Concerns

Direct impacts to migratory birds could include collisions with construction, operation, and maintenance vehicles, other equipment, or structures; direct removal of nesting habitat; destruction of unoccupied nests; induced abandonment of nests due to disturbance; fugitive dust; and visual disturbance.

4.6.3 Environmental Protection Measures

In addition to the general EPMs listed in Section 4.3 – General EPMs for Plants, Fish, and Wildlife, the following EPMs will be implemented to avoid and minimize Project impacts to migratory birds (see also Section 4.4 – Raptors):

WILD-9 To the extent feasible, all vegetation clearing will be conducted prior to the onset of the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either preconstruction surveys or construction activities, the nest will be identified to species, inconspicuously marked, and vegetation left in place until any young have fledged.

WILD-10 Snags will be maintained along the outer portions of the Project's ROW in order to reduce the impacts to cavity nesting habitat to the extent practical and where not in conflict with the Companies' vegetation management specifications.

4.7 Special Status Fish and Wildlife Species

4.7.1 Background

The Project would pass through multiple habitats that could potentially support special status species. These species include threatened and endangered species listed under the ESA, candidate species and those formally proposed for ESA listing, those listed by the USFS and BLM as special status or sensitive, and USFS MIS. The identification and characterization of special status species within the Project area was completed through a review of available literature, federal and state databases, consultation with federal and state biologists, and the completion of limited biological surveys and remote habitat assessments. Table 4-2 – Speical Status Fish and Wildlife Species with the Potential to Occur in the Project Area, presents the special-status fish and wildlife species with the potential to occur in the Project area.

Aerial surveys were conducted for both sage-grouse and Columbian sharp-tailed grouse (*Tympanuchus phasianellus* ssp. *columbianus*) during April 2008. Locations of leks and raptor nests (discussed above in Section 4.4 – Raptors) detected during these surveys were provided to the state wildlife agencies for inclusion into their state-maintained databases. The entirety of Segment D was also aerially surveyed in 2012.

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Mammals			
American Marten	*Martes americana*	Mainly mature coniferous forests	1, 4
Bighorn Sheep	*Ovis canadensis*	grassy mountains, alpine meadows and foothill country near rocky cliffs that allow quick escape	N/A
Black-footed Ferret	*Mustela nigripes*	Grasslands, steppe, and shrub steppe used by prairie dogs (prey source)	1, 2, 3, 4
Black-tailed Prairie Dog	*Cynomys ludovicianus*	Arid grassland and shrub/grassland communities, usually with slopes less than 12 to 15 percent and diverse grass cover	1
Canada Lynx	*Lynx canadensis*	Douglas-fir and spruce/fir vegetation types	4
Cliff Chipmunk	*Tamias dorsalis*	Rocky, steep hillsides	1, 4
Fringed Myotis	*Myotis thysanodes*	Conifer forests, woodland-chaparral, caves and mines, snags, rock outcrops; foraging often occurring within riparian areas and open water	Forests - 1, 4 Species distribution 3
Gray Wolf	*Canis lupus*	Presence of native ungulates	1, 2, 3, 4
Grizzly Bear	*Ursus arctos horribilis*	Found most often in open mountainous habitats away from human developments	3, 4
Idaho Pocket Gopher	*Thomomys idahoensis*	Shallow stony soils in open sagebrush, sagebrush-grassland, and mountain meadow habitats	1, 2, 3, 4
Kit Fox	*Vulpes macrotis*	Semi-desert shrubland and margins of pinyon-juniper woodland with saltbush, shadscale, sagebrush, and greasewood presence	1, 2, 3, 4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Long-Eared Myotis	*Myotis evotis*	Coniferous forest and woodland, including juniper, ponderosa pine, and spruce-fir; forages over rivers, streams, and ponds ; roosts in cavities in snags, under loose bark, stumps, buildings, rock crevices, caves, and abandoned mines; probably hibernates primarily in caves and abandoned mines	1, 4
Preble's Meadow Jumping Mouse	*Zapus hudsonius preblei*	Heavily vegetated, shrub-dominated riparian habitats and immediately adjacent upland habitats along the foothills; occurs in Albany, Laramie, Platte, Goshen, and Converse counties in Wyoming	1, 2
Pygmy Rabbit	*Brachylagus idahoensis*	Dense, tall stands of big sagebrush, usually along intermittent streams or riparian areas in sagebrush-grasslands with deep, soft soils	2, 3, 4
River Otter	*Lontra canadensis*	Rivers, ponds, and lakes located adjacent to wooded areas	1, 2, 3, 4
Snowshoe Hare	*Lepus americanus*	Dense young woodlands with relatively deep winter snow accumulation	1, 4
Spotted Bat	*Euderma maculatum*	Wide variety of habitats typically adjacent to perennial water, from desert scrub to coniferous forest; most often observed in low deserts and basins and juniper woodlands; roosts in cracks and crevices in high cliffs and canyons, occasionally in buildings, caves, or abandoned mines	1, 2, 3, 4
Swift Fox	*Vulpes velox*	Grasslands; short and mixed grass prairie; dens in sandy soil on open prairies, in plowed fields, or along fences	1, 2, 3, 4
Townsend's Big-eared Bat	*Corynorhinus townsendii*	Shrub-steppe, juniper woodlands and dry coniferous forests; roosts in caves, mines, snags, rock outcrops, and human structures	1, 4
White-tailed Prairie Dog	*Cynomys leucurus*	Arid grassland and shrub/grassland communities, usually with slopes less than 12 to 15 percent with diverse grass and forb cover; typically higher elevations than the black tailed prairie dog	1, 2, 3, 4
Wolverine	*Gulo gulo luscus*	Remote forested areas, ranging over a variety of habitats	4
Wyoming Ground Squirrel	*Spermophilus elegans nevadensis*	Primarily valley bottoms, foothills, grasslands and semidesert shrublands	1, 2, 3, 4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Wyoming Pocket Gopher	*Thomomys clusius*	Limited information available; seems to prefer loose, gravelly, upland soils, often with greasewood; current known distribution is restricted to the south-central portion of Wyoming	2, 3, 4
Birds			
American Bittern	*Botaurus lentiginosus*	Nests near freshwater wetlands with tall, emergent vegetation or in grassy, upland areas in close proximity to such wetlands	1, 2, 3, 4
American White Pelican	*Pelecanus erythrorhynchos*	Variety of aquatic and wetland habitats, including rivers, lakes, reservoirs, and marshes.	1, 2, 3, 4
Bald Eagle	*Haliaeetus leucocephalus*	Typically near fish-bearing open water, including major rivers, lakes, and reservoirs; foraging habitat can include upland areas	1, 2, 3, 4
Baird's Sparrow	*Ammodramus bairdii*	Grasslands and weedy fields without a large woody vegetation component	1, 2, 3, 4
Black Tern	*Chlidonias niger*	Inland marshes and sloughs, typically with fairly dense cattail or other marsh vegetation and pockets of open water	1, 2, 4
Black-throated Sparrow	*Amphispiza bilineata*	Sparse, isolated desert environment; creosote bush and scrub; prefer terrain that is either steeply sloped or very flat; alluvial fans and hill slopes, usually with much exposed rock and gravel pavement; within the Project area, habitat most likely occurs within sagebrush communities	3, 4
Boreal Owl	*Aegolius funereus*	Mainly old-growth forests with woodpecker cavities for nesting; pure coniferous to pure deciduous forests; hunt in forest meadows and open forests	1, 4
Brewer's Sparrow	*Spizella breweri*	Closely associated with sagebrush, preferring dense stands broken up with grassy areas; can be found in sub-alpine fir, dwarf birch, or montane pinon-juniper woodlands	1, 2, 3, 4
Burrowing Owl	*Athene cunicularia*	Grasslands, basin-prairie shrub: owls use vacant rodent burrows, mainly associated with prairie dog habitat	1, 2, 3, 4
Calliope Hummingbird	*Stellula calliope*	Mostly montane communities, riparian forests to shrub-sapling secondary growth to open montane forests	1, 4
Chestnut-Collared Longspur	*Calcarius ornatus*	Native prairie obligate, prefers level to rolling native mixed-grass and shortgrass uplands; in drier areas can be found in moist lowlands	1, 2, 3

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Columbian Sharp-Tailed Grouse	*Tympanuchus Phasianellus columbianus*	Mountain-foothills shrub communities of serviceberry, snowberry, chokecherry, and Gambel oak; sagebrush-grassland; and willow riparian habitats; leks are typically located in areas with little slope and low, sparse vegetation, such as knolls, ridgetops, or benches	2, 3, 4
Ferruginous Hawk	*Buteo regalis*	Mixed-grass prairie communities; often associated with little bluestem, prairie June grass, green needle-grass, western wheatgrass, and Kentucky bluegrass; common nest sites include eastern cottonwoods, peachleaf willow, juniper, box elder maple, green ash, Chinese elm, and American elm; also uses sagebrush, saltbrush, and greasewood shrublands	1, 2, 3, 4
Flammulated Owl	*Otus flammeolus*	Mature and old-growth xeric ponderosa pine/Douglas-fir stands with with open canopy; nests in woodpecker holes made in mature aspen or ponderosa pine	1, 4
Golden Crowned Kinglet	*Regulus satrapa*	Dense, coniferous forests, especially where spruce or firs are present	1, 4
Grasshopper Sparrow	*Ammodramus savannarum*	Open grassland habitats	1, 2, 3, 4
Great Gray Owl	*Strix nebulosa*	Dense, mature coniferous forests with close proximity to meadows or open fields	1, 4
Greater Sage-Grouse	*Centrocercus urophasianus*	Basin-prairie shrub and mountain-foothill shrub communities; only found in areas where adequate sagebrush is available to meet habitat and biological needs	1, 2, 3, 4
Hammond's Flycatcher	*Empidonax hammondii*	Cool forests, especially coniferous or mixed forests with fir trees; favor old-growth Douglas-fir/ponderosa pine forests	1, 4
Interior Least Tern	*Sterna antillarum*	Interior least terns breed in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems; water withdrawals in the Platte River Watershed, regardless of location, could impact the species	N/A
Lewis's Woodpecker	*Melanerpes lewis*	Open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest	1, 4
Lincoln's Sparrow	*Melospiza lincolnii*	Habitat information is limited; seem to prefer riparian willow habitats at elevations between 2,050 and 2,260 m.	1, 2, 3, 4
Loggerhead Shrike	*Lanius ludovicianus*	Basin-prairie shrub and mountain-foothill shrub; prefers open habitat including shrub-steppe, deserts and grasslands with access to elevated perches and impaling stations	1, 2, 3, 4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Long-billed Curlew	*Numenius americanus*	Grasslands, plains, foothills, and wet meadows; open habitats year-round; prairies and grasslands, as well as plowed fields, meadows, and pastures are used during the breeding season	1, 2, 3, 4
McCown's Longspur	*Calcarius mccownii*	Shortgrass prairies with sparse vegetation coverage; can utilize agricultural areas	1, 2, 3
Mountain Plover	*Charadrius montanus*	Low, open habitats such as arid shortgrass and mixed grass prairies dominated by blue grama and buffalo grass with scattered clumps of cacti and forbs, and saltbush habitats of the shrub-steppe of central and western Wyoming; prefers to nest in large, flat grassland expanses with sparse, short vegetation and bare ground; adapted to areas that have been disturbed by prairie dogs, heavy grazing, or fire	1, 2, 3, 4
Mountain Quail	*Oreortyx pictus*	Mixed evergreen forests and woodlands with dense cover and scattered open areas on slopes in foothills and mountains; requires a source of water during summer	1, 2, 3, 4
Northern Goshawk	*Accipter gentilis*	Mature conifer and deciduous forests with an abundant prey base, possibly related to understory shrub development in forested habitat; will also inhabit mixed forests	1, 4
Northern Harrier	*Circus cyaneus*	Wide range of open wetland and upland habitats during the breeding season, including fresh to alkali wetlands, wet or dry grasslands, lightly grazed agricultural pastures, old fields, brushy areas, and cold desert shrub-steppe; in the nonbreeding season, uses open habitats with herbaceous cover, including freshwater and saltwater wetlands, grasslands, idle fields, agricultural pastureland, desert, and, to a lesser extent, cropland	1, 2, 3, 4
Olive-sided Flycatcher	*Contopus borealis*	Generally restricted to coniferous or mixed-coniferous forests; primarily occur in montane, subalpine, and boreal forests; often occur along wooded shores of lakes, rivers, and bogs where forest edges, variation in tree height, and standing dead trees are found; most often associated with forest edges and openings	1, 4
Peregrine Falcon	*Falco peregrinus*	Nests in tall, rocky cliffs and often hunts near water	1, 2, 3, 4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Piping Plover	*Charadrius melodus*	Wide, sparsely vegetated sand or gravel beaches adjacent to vast alkali lakes; can be found along the beaches near reservoirs, rivers, freshwater lakes, dry alkali lakes and industrial ponds, as well as sandpits and gravel mines; water withdrawals in the Platte River Watershed, regardless of location, could impact the species	N/A
Prairie Falcon	*Falco mexicanus*	Open treeless terrain including prairies, deserts, riverine escarpments, canyons, foothills, and mountains	1, 2, 3, 4
Purple Martin	*Progne subis*	Nests in forest edges and clearings adjacent to waterbodies	1, 2, 4
Sage Sparrow	*Amphispiza belli*	Basin-prairie shrub, mountain-foothill shrub; breeds in ope, shrublands, most commonly in sagebrush grassland areas	1, 2, 3, 4
Sage Thrasher	*Oreoscoptes montanus*	Basin-prairie shrub, mountain-foothill shrub; sagebrush obligate	1, 2, 3, 4
Short Eared Owl	*Asio flammeus*	Open habitats including grasslands, sagebrush, marshes, and tundra	1, 2, 3, 4
Swainson's Hawk	*Buteo swainsoni*	Open pine-oak woodlands with an abundant shrub-grass component, grasslands, and cultivated farmlands; nests in trees or bushes	1, 2, 3, 4
Three-Toed Woodpecker	*Picoides dorsalis*	Old growth spruce-fir and lodgepole pine forests; will forage in recently burned forests	1, 4
Virginia’s Warbler	*Vermivora virginiae*	Pinyon-juniper and oak woodlands; nests in dense thickets of mountain mahogany and high, mixed-conifer forests; scrubby habitats below the pine belt and surrounding conifers; breeds in steep draws, drainages, or slopes with oak or other shrubby vegetation	1, 4
Whooping Crane	*Grus americana*	Shallow-water wetlands; feeds and roosts in croplands during migration; water withdrawals in the Platte River Watershed, regardless of location, could impact the species	N/A
Williamsons Sapsucker	*Sphyrapicus thyroideus*	Open coniferous forests; breeds at middle to high elevations, generally from 4,900–10,500 feet; nests at lower elevations (from 2,800–4,250 feet)	4
Willow Flycatcher	*Empidonax trailii*	Breeds in deciduous thickets, especially willows and often near water; winters in shrubby clearings and early successional growth	4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Wilson's Warbler	*Wilsonia pusilla*	Mesic shrub communities or willow woodlands located near the edges of beaver ponds and lakes, riparian zones, fens, bogs, and overgrown clear-cuts	1, 2, 3, 4
Yellow-billed Cuckoo	*Coccyzus americanus*	Riparian obligate species that prefer extensive areas of dense thickets and mature deciduous forests near water, and require low, dense, shrubby vegetation for nest sites	1
Reptiles			
Common Garter Snake	*Thamnophis sirtalis*	Usually found in habitats associated with water, such as streams, rivers, lakes, ponds and marshes; can also be found in open meadows and coniferous forests	2, 3, 4
Midget Faded Rattlesnake	*Crotalus viridis concolor*	Mountain foothills shrub, rock outcrops in sagebrush desert	4
Amphibians			
Boreal Toad (Northern Rocky Mountain population)	*Bufo boreas boreas*	Pond margins, wet meadows, riparian areas; wide range of habitats including wetlands, forests, woodlands, sagebrush, meadows, and floodplains in the mountains and valleys	1, 2, 3, 4
Columbia Spotted Frog – Great Basin Population only	*Rana luteiventris*	In or near lakes, ponds, slow streams, and marshes; prefers areas with thick algae and vegetation for cover, but may also hide under decaying vegetation; most commonly occurs in non-woody wetland plant communities	4
Great Basin Spadefoot	*Spea intermontana*	Spring seeps, permanent and temporary waters; mainly sagebrush flats, semi-desert shrublands, pinyon-juniper woodland; digs its own burrow in loose soil or uses those of small mammals; breeds in temporary or permanent water, including rain pools, pools in intermittent streams, and flooded areas along streams; eggs are attached to vegetation in water or placed on bottom of pool	1, 4
Northern Leopard Frog	*Rana pipiens*	Beaver ponds, permanent water in plains and foothills; springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes; usually permanent water with rooted aquatic vegetation; commonly inhabits wet meadows and fields during summer	1, 2, 3, 4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Spotted Frog	*Ranus pretiosa (lutieventris)*	Generally found in or near permanent bodies of water such as sloughs, lakes, ponds, sluggish streams and marshes; usually with emergent vegetation including grasses and sedges; may disperse into forests, grasslands, and brushlands	4
Woodhouse Toad	*Bufo woodhousii*	Inhabits a wide variety of habitats - irrigation ditches, temporary pools, backyards, grassland, sagebrush flats, woods, desert streams, farms, river floodplains; prefers sandy areas	1
Invertebrates			
Bruneau Dunes Tiger Beetle	*Cicindela waynei waynei*	Primarily occurs in the sparsely vegetated margins of sand dunes; adults can be found on dunes but spend much of their time on more stabilized substrate in saddles between dunes; larvae develop in burrows in flat areas in the narrow area between the drifting sand of the dunes and the established desert plant community, usually with a covering of small gravel or pebbles	4
Blind Cave Leiodid Beetle	*Glacicavicola bathyscoides*	Lava tube caves in the vicinity of permanent ice	4
St. Anthony Sand Dunes Tiger Beetle	*Cicindela arenicola*	Sand dunes; larvae live in burrows located in flat, grassy areas where the sand is at least a meter thick, often on the windward side	4
Fish			
Bluehead Sucker	*Catostomus discobolus*	Bear, Snake, and Green River drainages, all waters; typically found in runs or riffles with rock or gravel substrate	4
Bonneville Cutthroat Trout	*Oncorhynchus clarki utah*	Clear mountain streams within the Bonneville basin, along the Bear River drainage	4
Bonytail	*Gila elegans*	Slow moving waterbodies with rocky or muddy bottoms; water withdrawals in the Colorado River Watershed, regardless of location could impact the species	N/A
Colorado Pikeminnow	*Ptychocheilus lucius*	Occurs in the warm, swift waters of the big rivers of the Colorado Basin; water withdrawals in the Colorado River Watershed, regardless of location could impact the species	N/A
Colorado River Cutthroat Trout	*Oncorhynchus clarki pleuriticus*	Clear mountain streams along the Colorado River drainages located above the Grand Canyon; including the Green River	4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Common Trout	brook trout *(Salvelinus fontinalis),* rainbow trout *(Oncorhynchus mykiss)* , and brown trout *(Salmo trutta)*	Found in cold waters of the Yampa, North Platte, and Colorado Rivers	4
Finescale Dace	*Phoxinus neogaeus*	Occurs in cool, boggy lakes and sluggish, acidic streams; commonly found in lakes and ponds, often associated with beaver ponds	4
Fine-spotted Cutthrout Trout, Snake River Cutthroat	*Oncorhynchus clarki* spp	Snake River drainage, clear, fast water	4
Flannelmouth Sucker	*Catostomus latipinnis*	Colorado River drainage, large rivers, streams and lakes; prefers large rivers with deep riffles and runs, but can also be found in smaller streams and sometimes in lakes; native to the Colorado River drainage basin, found in the Green and Little Snake river drainages of Wyoming	4
Humpback Chub	*Gila cypha*	Primarily canyons with swift currents and white water; associated with a variety of habitats ranging from pools with turbulent to little or no current; substrates of silt, sand, boulder, or bedrock; and depth ranging from 1 meter to as deep as 15 meters; water withdrawals in the Colorado River Watershed, regardless of location could impact the species	N/A
Lake Chub	*Couesius plumbeus*	Glacial scour lakes and rivers with clear water and gravel bottoms	4
Mountain Sucker	*Catostomus platyrhynchus*	Small headwater streams along the Snake River; lentic habitats such as the Lower Green River Lake	4
Northern Leatherside Chub	*Lepidomeda copei* (formally *Gila copei)*	Deep pools in medium sized cool water streams with dense vegetation or abundant lateral habitat; within the Project area, northeastern portions of the Bonneville Basin and Snake and Bear River drainages along the Wyoming-Idaho-Utah border; introduced populations can also be found within the Colorado River system	4

Table 4-2. Special Status Fish and Wildlife Species with the Potential to Occur in the Project Area (continued)

Common Name	Scientific Name	Habitat Description	Segments Species May be Present in
Pallid Sturgeon	*Scaphirhynchus albus*	Bottom-oriented species inhabiting the Missouri and Mississippi Rivers from Montana to Louisiana; large, silty rivers with swift currents and sandy bottoms, preferred habitat is comprised of sand flats and gravel bars; water withdrawals in the Colorado River Watershed, regardless of location could impact the species	N/A
Razorback Sucker	*Xyrauchen texanus*	Medium to large rivers with swift turbulent waters, as well as slow backwater areas; feeds on benthic fauna and flora, detritus, and plankton; most wild fish are now found in Lake Mohave; they can be found in unimpounded waters of the Green, Yampa, and mainstem of the Colorado; water withdrawals in the Colorado River Watershed, regardless of location could impact the species	N/A
Roundtail Chub	*Gila robusta*	Colorado River drainage, mostly large rivers, also streams and lakes below 7,546 feet; juveniles and adults are typically found in relatively deep, low-velocity habitats that are often associated with woody debris or other types of cover; substrate may range from rock and gravel to silt and sand; larvae have been reported in low velocity areas associated with backwater habitats	4
Sturgeon Chub	*Macrhybopsis gelida*	Fast moving streams with high turbidity; often in shallow waters such as rock or gravel riffles	4
Yellowstone Cutthroat Trout	*Oncorhynchus clarki bouvieri*	Yellowstone, Bighorn, and Snake River drainage, small mountain streams and large rivers (including Raft River, Goose Creek, Piney Creek, and Trout Creek)	4

4.7.2 Concerns

Project-related impacts to special status fish and wildlife species include (1) habitat loss and fragmentation associated with construction of access roads, the transmission line, roads and other ancillary facilities, and substations; vegetation management operations; and spread of non-native species; (2) loss of production due to disturbance and displacement of wildlife during breeding and spawning periods as a result of increased Project-related human activity and new public access; (3) mortality due to vehicle collisions and destruction of occupied nests and burrows with heavy machinery; and (4) mortality of species preyed on by avian predators that use transmission towers as hunting perches.

4.7.3 Environmental Protection Measures

In addition to the applicable EPMs listed in Sections 4.3 – General EPMs for Plants, Fish, and Wildlife, 4.4 - Raptors, 4.5 – Big Game, and 4.6 – Migratory Birds, the following EPMs will be implemented to avoid and minimize Project impacts to special status fish and wildlife:

OM-16 Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.

OM-23 If sensitive wildlife species are discovered during O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and new access roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Companies will establish an appropriate buffer zone and will contact the federal or state land manager immediately. The federal or state agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or no will longer pose a threat to the species, the marking (stakes) will promptly be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.

OM-26 If sensitive wildlife species are killed or injured due to O&M activities, the appropriate federal agency will be notified.

FISH-1 On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.

FISH-2 When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.

WILD-5 Surveys will be conducted along the route across the Caribou-Targhee NF prior to construction for caves, abandoned mines, and adits. If suitable bat roosts are identified, the Companies will consult with the USFS to determine appropriate protective measures.

TESWL-1 H-frame structures will be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species on federally managed lands.

Note that this is an agency imposed measure based on the Casper and Rawlins RMPs.

TESWL-2 In the event that an ESA-listed species not covered by the Biological Opinion (BO) is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.

TESWL-3 Black-footed Ferret – Preconstruction surveys will be conducted for the black-tailed prairie dog (in addition to those already proposed for the white-tailed prairie dog) in Segment 1W.

Note that TESWL-3 has been offered by the Companies; however, although the Companies are encouraged to protect all prairie dog towns, formal black-footed ferret surveys within those towns will no longer be required by the BLM per USFWS direction (USFWS 2013).

TESWL-4 The Environmental Compliance Inspection Contractor (CIC), an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied structures (e.g., nests, burrows, colonies, dens) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be “microsited” (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.

TESWL-5 Grouse Species – The Companies will provide the Agencies a list of the protocols that the Companies will use during greater sage-grouse and sharp-tailed grouse preconstruction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.

TESWL-6 Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-

grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.

TESWL-7 Yellow-billed cuckoo – A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.

TESWL-8 Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). “No surface occupancy,” as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource’s protected area is not adversely affected.

TESWL-9 Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions would allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).

TESWL-10 Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.

TESWL-11 Sage-Grouse – No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer RMP.

TESWL-12 Colorado River T&E Fishes – A payment of a one-time fee, based on a fee schedule provided by the USFWS, will be made based on the amount of water used during construction of any segments that cross the Colorado River system.

TESWL-13 Midget faded rattlesnake – Preconstruction surveys for occupied or potential midget faded rattlesnake hibernacula (i.e., rock outcrops with south to east aspect) will be conducted. The Companies shall prepare

a plan identifying measures to reduce impacts to midget faded rattlesnake if they are discovered. This plan shall require approval by BLM and the WGFD prior to its implementation.

TESWL-14 For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat.

Note that this is an agency imposed measure.

TESWL-15 Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins Field Office.

Note that this is an agency imposed measure.

TESWL-16 Sage-Grouse – If the Kemmerer RMP is amended to allow Proposed Route 4 or Alternatives 4C or 4E to be selected, existing fences within 1 mile of the portion of the Gateway West Project located on lands managed by the Kemmerer RMP will be modified with FireFly Grouse Flight diverters (or a similar product) in order to prevent greater sage-grouse mortalities. Additional site-specific reclamation, such as transplanting sagebrush seedlings within previous disturbed habitats, will also be required to off-set the net loss of sagebrush habitats within the Rock Creek/Tunp management area.

Note that this is an agency imposed measure.

4.8 Special Status Plants

4.8.1 Background

The Project would pass through multiple habitats that could support special status plant species. These species include threatened, endangered, and candidate species designated under the ESA, those listed by the USFS and/or BLM as special status or sensitive, and State Heritage Program species of concern. Information on the known and potential occurrences of special status plant species in and near the Project area was obtained from federal and state agencies. Data on potential habitat were also used to predict the potential locations of special status plant species within the Project area.

Table 4-3 – Special Status Plant Species with the Potential to Occur in the Project Area, presents the special-status plant species with the potential to occur in the Project area.

Surveys for Ute ladies'-tresses orchid (*Spiranthes diluvialis*) were conducted along Segment D in 2009, 2010, 2011, and 2012 (Tetra Tech 2010a, 2011, 2013). No plants were identified during these surveys. Surveys for threatened, endangered, proposed, candidate, and sensitive (TEPCS) plant species were conducted within areas that may be subject to disturbance and for which right of entry was obtained in 2012 (Tetra Tech 2012). Two TEPCS plant species were observed within the Pocatello Field Office in Idaho: starveling milkvetch (*Astragalus jejunus* var. *jejunus*) and silky cryptantha (*Cryptantha sericea*); one was observed within the Rawlins Field Office in Wyoming: Laramie false sagebrush (*Sphaeromeria simplex*); and one was observed within the Rock Springs Field Office in Wyoming: Ownbey's thistle (*Cirisium ownbeyi*). No TEPCS plant species were observed within the Casper or Kemmerer Field Offices in Wyoming.

Table 4-3. Special Status Plant Species with the Potential to Occur in the Project Area

Scientific Name	Common Name	Habitat Description	Segments Species May be Present in
Achnatherum swallenii	Swallen mountain-ricegrass	Sagebrush, rocky slopes	4
Antennaria arcuata	Meadow pussytoes	Riparian areas	2, 3, 4
Aquilegia laramiensis	Laramie columbine	Granite outcrops	1
Artemisia biennis var. *diffusa*	Mystery wormwood	Desert shrublands, playas	3, 4
Artemisia porteri	Porter's sagebrush	Clay flats, badlands slopes, depressions, or gullies at 4,600-7,000 feet	1
Asclepias subverticillata	Bedstraw milkweed	Disturbed areas	1, 2
Asclepias uncalis	Dwarf milkweed	Desert grasslands	4
Astragalus bisulcatus var. *haydenianus*	Hayden's milkvetch	Sagebrush, juniper	4
Astragalus jejunus var. *jejunus*	Starveling milkvetch	Barren slopes and ridges	4
Astragalus paysonii	Payson's milkvetch	Disturbed areas with sandy soils	4
Astragalus racemosus var. *treleasei*	Trelease's racemose milkvetch	Sagebrush	4
Boechera crandallii	Crandall's rockcress	Sagebrush, juniper	3
Carex parryana var. *unica*	Hall's sedge	Springs, wet meadows	4
Ceanothus martinii	Utah mountain lilac	Sagebrush, montane shrub	4
Cirsium aridum	Cedar Rim thistle	Barren slopes and ridges	1, 2, 3, 4
Cirisium ownbeyi	Ownbey's thistle	Semi-barrens rims or steep slopes of broken gray slate	1, 2, 3
Cryptantha sericea	Silky cryptantha	Barren clay or sandy soils	4
Cuscuta occidentalis	Western dodder	Mountain big sagebrush	4
Descurainia pinnata var. *paysonii*	Payson's tansymustard	Dunes, sand flats	3

Table 4-3. Special Status Plant Species with the Potential to Occur in the Project Area (continued)

Scientific Name	Common Name	Habitat Description	Segments Species May be Present in
Descurainia torulosa	Wyoming tansymustard	Rock crevices and ledges	4
Ericameria winwardii	Winward's narrowleaf goldenweed	Rocky slopes at higher elevations	4
Eriogonum divaricatum	Divergent wild buckwheat	Cushion plants	4
Eriogonum exilifolium	Slender-leaved buckwheat	Cushion plants	1
Eriogonum hookeri	Hooker buckwheat	Sagebrush	2, 4
Eustoma grandiflorum	Showy prairie-gentian	Wet meadows and pond margins	1
Gaura neomexicana ssp. coloradensis	Colorado butterfly plant	Sub-irrigated meadows in prairie; Critical habitat in Platte and Laramie Counties, WY	N/A
Ipomopsis crebrifolia	Compact gilia	Sagebrush steppe	4
Lepidium integrifolium var. *integrifolium*	Entire-leaved peppergrass	Greasewood, alkaline meadows	4
Lesquerella fremontii	Fremont bladderpod	Cushion plant communities	4
Lesquerella macrocarpa	Large-fruited bladderpod	Barren slopes and ridges	4
Lesquerella multiceps	Western bladderpod	Sparse grassland, cushion plants	4
Lesquerella prostrata	Prostrate bladderpod	Sandstone and shale outcrops	4
Lomatium bicolor	Wasatch biscuitroot	Dry slopes and meadows	4
Lomatium triternatum var. *anomalum*	Ternate desert-parsley	Dwarf sagebrush-grasslands	4
Oonopsis wardii	Ward's false goldenweed	Shale-clay slopes, barren plains, and disturbed roadsides	1, 2
Oxytropis nana	Wyoming locoweed	Gravel benches, prairies, riverbanks, and foothills	1
Penstemon acaulis	Stemless beardtongue	Cushion plant/bunchgrass	2
Penstemon gibbensii	Gibbens' beardtongue	Steep, bare slopes with poor soil development	2
Penstemon haydenii	Blowout penstemon	Shifting, sparsely vegetated sand dunes	1, 2, 3, 4
Phacelia glandulosa var. *deserta*	Desert glandular phacelia	Semi-barren slopes, cushion plants	4
Phacelia incana	Western phacelia	Juniper	2
Phlox albomarginata	White-margined phlox	Western forest and steppe communities	4
Phlox opalensis	Opal phlox	Cushion plant communities	4
Phlox pungens	Beaver Rim phlox	Barren slopes and ridges, cushion plant communities	1, 2, 4
Physaria condensata	Tufted twinpod	Barren slopes and ridges	3, 4
Physaria dornii	Dorn's twinpod	Sparse mountain mahogany and cushion plants	4

Table 4-3. Special Status Plant Species with the Potential to Occur in the Project Area (continued)

Scientific Name	Common Name	Habitat Description	Segments Species May be Present in
Physaria eburniflora	Devil's Gate twinpod	Cushion plant communities	1
Physaria saximontana	Rocky Mountain twinpod	Barren slopes and ridges	1, 4
Platanthera praeclara	Western prairie fringed orchid	Moist prairies and sedge meadows along the Platte River in Nebraska; water withdrawals in the Platte River Watershed, regardless of location, could impact the species	N/A
Potamogeton nodosus	Longleaf pondweed	Rivers	2
Rorippa calycina	Persistent Sepal Yellow-cress	Shorelines	1, 2
Salicornia rubra	Red glasswort	Playas	4
Sphaeromeria simplex	Laramie false sagebrush	Cushion plant communities	1, 2, 4
Spiranthes diluvialis	Ute ladies'-tresses orchid	Moist stream banks, wet meadows, and abandoned stream channels; 5,100 to 5,200 feet in Wyoming (720 to 7,000 feet across range)	1, 2, 3, 4
Sullivantia hapemanii	Hapeman's sullivantia	Moist calcareous outcrops	1
Thalictrum dasycarpum	Purple meadow-rue	Wetlands	4
Thelesperma pubescens	Uinta greenthread	Cushion plant communities and sagebrush grasslands	4

4.8.2 Concerns

Direct impacts from Project activities could result in crushing or removal of plants, as well as direct loss of habitat. Indirect impacts include fragmentation of suitable habitat; alteration of fire regimes; increased competition from early successional plant species; increased competition by herbivores in newly disturbed areas; introduction or spread of invasive exotic species; isolation of subpopulations due to physical separation by access roads or transmission infrastructure; increased erosion; and alteration of habitat microclimates or hydrology.

4.8.3 Environmental Protection Measures

In addition to the applicable EPMs listed in Section 4.3 – General EPMs for Plants, Fish, and Wildlife, the following EPMs will be implemented to avoid and minimize Project impacts to special status plants:

OM-22 Sensitive plant populations that occur within or near the ROW and work areas will be marked on the ground, where practical, to ensure that they are avoided. If species are discovered during the work, the Companies will establish a spatial buffer zone, will contact the appropriate Agency within 24 hours, and will continue with the O&M activities outside of the established buffer unless otherwise directed.

The Agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed or will no longer poses a threat to the plant population, the marking (stakes), if used, will be promptly removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.

OM-25 In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process.

TESPL-1 Blowout Penstemon – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

TESPL-2 Colorado Butterfly Plant – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.

Note that this species is not expected to occur in Segment D.

TESPL-3 Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.

TESPL-4 Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known

occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots.

Note that this species is not expected to occur in Segment D.

TESPL-5 Sand dune and cushion plant communities will be avoided, where feasible.

TESPL-6 Goose Creek Milkvetch – Surface disturbance will be allowed in suitable habitat for Goose Creek milkvetch where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impacts to populations.

Note that this species is not expected to occur in Segment D.

TESPL-7 Ute Ladies'-tresses – Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.

4.9 Requests for Exceptions to Seasonal and Spatial Restrictions

Many of the EPMs are designed to assume species presence and, in the case of seasonal restrictions, to broadly bracket the interval of time in which there could be adverse impacts. Requests for an exception from a seasonal restriction or no surface occupancy (NSO) area will be submitted as a Level 2 variance request to the appropriate land management agency. The Construction Contractor will follow the limited operating periods enforced by the BLM and described in Attachment H-2 – Seasonal and Spatial Restrictions, unless an exception is granted.

Exception requests on BLM-managed lands will proceed as follows. The BLM, the CIC, or a contractor approved by the Companies and approved by the BLM will conduct the appropriate surveys and coordinate with any other agencies as necessary. A variance request with the survey results incorporated will be submitted in writing no more than

two weeks prior to the proposed commencement of the construction activity, to ensure that conditions during construction are consistent with those evaluated.

The Authorized Officer, or designated representative, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. Factors considered in granting the exception include animal conditions; climate and weather conditions; habitat conditions and availability; spatial considerations (e.g., travel routes and landscape connectivity); breeding activity levels; incubation or nestling stage; and timing, intensity, and duration of the proposed action.

A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly construction mobilization. The CIC will conduct any required site visit and report status to BLM for consideration of the decision to accept or deny the request. Attachment H-2 of this Plan lists land management plan seasonal stipulations that are applicable to the extent such species are present. The variance process is further detailed in Appendix C of the POD.

5.0 PRECONSTRUCTION SURVEYS

The EPMs that the Companies will implement to avoid or minimize impacts to plant and wildlife species in the Project area will only be applied where applicable and where species of concern have been identified by the Companies and the agencies as occurring in the Project area. Preconstruction surveys will be conducted for plant and wildlife species using protocols approved by state and federal agencies in order to determine activity levels prior to construction as well as facilitate micro-siting of the Project outside of occupied areas when applicable and to the extent practical. Preconstruction surveys will be conducted within suitable habitats during the appropriate seasonal timeframe for the following species:

- bald eagle;
- blowout penstemon;
- burrowing owl;
- Colorado butterfly plant (note that this species is not expected to occur in Segment D);
- Columbian sharp-tailed grouse;
- ferruginous hawk;
- flammulated owl;
- Goose Creek milkvetch (note that this species is not expected to occur in Segment D);
- greater sage-grouse;
- midget faded rattlesnake;
- migratory birds (if vegetation clearing cannot be conducted prior to the onset of the avian breeding season [generally April 15 through July 31]);

- mountain plover;
- northern goshawk;
- Preble's meadow jumping mouse;
- pygmy rabbit;
- raptor species (including the golden eagle, prairie falcon, red tailed hawk, and Swainson's hawk);
- slickspot peppergrass (note that this species is not expected to occur in Segment D);
- three-toed woodpecker;
- Ute ladies'-tresses;
- white-tailed prairie dog;
- Wyoming pocket gopher;
- Yellow-billed cuckoo; and
- any species that becomes listed under the ESA between now and the beginning of construction and could occur within the Project area.

The following survey protocols have been identified for use during preconstruction surveys:

- Burrowing owl preconstruction surveys would be conducted using the protocols found in the "Recommended Survey Protocol and Recommended Actions to Protect Burrowing Owls when Conducting Prairie Dog Control" (CDOW 2007).
- Mountain plover preconstruction surveys would be conducted using the protocols found in the "Birds of Conservation Concern 2002" (USFWS 2002e).
- Pygmy rabbit preconstruction surveys would be conducted within 300 feet of and including the Project's ROW using the protocols found in the "Surveying for Pygmy Rabbits (*Brachylagus idahoensis*)" (Ulmshneider 2004, Revised 2008). The 300-foot distance beyond where most other preconstruction surveys would be conducted was chosen because burrow systems have been found to extend approximately 300 feet (Bradfield 1974).
- Wyoming pocket gopher preconstruction surveys would be conducted using the protocols found in the "Wyoming Pocket Gopher (*Thomomys clusius*): A Technical Conservation Assessment" (Keinath and Beauvias 2006).
- Flammulated owl and northern goshawk preconstruction surveys would be conducted using the protocols found in the "Rocky Mountain Region, Species Conservation Program: Species Conservation Assessments" (Kennedy 2003), and using the Payette National Forest Region 4 Sensitive Species Broadcast Vocalization Compact Disk (USFS 1993).

- Ute ladies'-tresses preconstruction surveys would be conducted using the protocols found in the "Interim Survey Requirements for Ute Ladies'-tresses Orchid (*Spiranthes diluvialis*)" (USFWS 1992).

The Construction Contractor will work with the BLM and USFWS to identify protocols for preconstruction surveys not listed above. Preconstruction survey results will be provided to the applicable land-management agency.

The survey windows for plant species-specific preconstruction surveys are listed in Table 5-1 – Preconstruction Survey Windows for ESA-Listed or Candidate Plant Species.

Table 5-1. Preconstruction Survey Windows for ESA-Listed or Candidate Plant Species

Species	Survey Window
Blowout penstemon	May through early July[1/]
Colorado butterfly plant[2/]	June through October
Goose Creek milkvetch[2/]	Mid-June to Mid-July
Slickspot peppergrass[2/]	Mid-May through September
Ute ladies'-tresses	July through September

1/ In Wyoming, due to elevation and climate conditions, surveys for blowout penstemon would occur between mid-June and mid-July.
2/ Species is not expected to occur in Segment D.

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ATTACHMENT H-1
BIOLOGICAL ENVIRONMENTAL PROTECTION MEASURES

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
OPERATIONS AND MAINTENANCE							
G-4	All wildlife and plant surveys/preconstruction surveys will be considered as "casual use" activities and will not be restricted or prevented to occur due to overlapping season and temporal restrictions.		•		•		
OM-4	Although routine and corrective O&M is of limited duration and impact, the Companies will attempt to adhere to specific closure periods and areas and are proposing not to conduct any routine and corrective O&M activities during the timeframes and at the locations identified in Appendix R of the Plan of Development to the greatest extent practical. The appropriate federal or state agency will notify the Companies of any spatial or temporal restrictions that are in effect for the Project area (e.g., fire restrictions) that would be applicable to corrective O&M activities.		•	•	•	•	
OM-6	The Agencies may restrict general public access to closed federal or state roads and access roads that the Companies maintain (the Companies will maintain access roads constructed for the Companies' use only). In cases of restricted access, the Companies will physically close the road with a gate. Gates will be locked with both a lock supplied by the Companies and with a federal agency lock. Access management will be updated as necessary to reflect current road closures and gate locations.		•	•	•	•	
OM-9	Where possible, low-growing vegetation and small tree species within the right-of-way (ROW) that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other "hot spots" (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.			•	•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
OM-16	Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.			•	•	•	•
OM-19	The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.			•	•	•	•
OM-20	Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources.			•	•		
OM-21	Prior to the start of O&M activities, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant and wildlife species and habitats. If a contractor is used, the construction contract will address (a) the sensitive plant species that may be present in a particular area based on previous surveys and literature review; (b) the federal and state laws regarding protection of plants and wildlife; (c) the importance of these resources; (d) the purpose and necessity of protecting them; and (e) methods for protecting sensitive resources (e.g., Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and BLM wildlife policy).			•	•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
OM-22	Sensitive plant populations that occur within or near the ROW and work areas will be marked on the ground, where practical, to ensure that they are avoided. If species are discovered during the work, the Companies will establish a spatial buffer zone, will contact the appropriate Agency within 24 hours, and will continue with the O&M activities outside of the established buffer unless otherwise directed. The Agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer poses a threat to the plant population, the marking (stakes), if used, will be promptly removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.			•	•		
OM-23	If sensitive wildlife species are discovered during O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and new access roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Companies will establish an appropriate buffer zone and will contact the federal or state land manager immediately. The federal or state agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer pose a threat to the species, the marking (stakes) will promptly be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.			•	•	•	•
OM-24	The Companies will provide crews and contractors with maps showing environmentally sensitive areas; these maps will include work zones as well as ROW areas where ground disturbance will be avoided.			•	•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
OM-25	In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process.			•	•		
OM-26	If sensitive wildlife species are killed or injured due to O&M activities, the appropriate federal agency will be notified.			•	•		
OM-27	All on-site personnel will be made aware that all birds of prey are protected by federal and state laws.			•	•	•	•
RECLAMATION							
REC-2	Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.		•		•	•	•
REC-3	Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.		•		•	•	•
REC-4	Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable.		•		•	•	•
REC-5	All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, an pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
REC-6	Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.		•		•	•	•
REC-7	All areas treated will be documented using GPS technologies and included in the annual report.			•	•	•	•
REC-8	Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread.		•	•	•	•	•
REC-9	Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.		•	•	•	•	•
REC-10	When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the final Reclamation Plan.		•	•	•	•	•
REC-11	Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.		•		•	•	•
REC-12	Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.		•		•	•	•
REC-13	Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
REC-14	Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil would be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.		•		•	•	•
REC-15	Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.		•		•	•	•
REC-16	The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.		•		•	•	•
REC-17	Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.		•		•	•	•
REC-18	Topsoil and sub-surface soils will be replaced in the proper order during reclamation.		•		•	•	•
REC-23	The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the Final Reclamation Plan and be consistent with the SWPPP.		•		•	•	•
REC-24	Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1-inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed to remove air pockets.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
REC-25	Drill seeding will be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth.		•		•	•	•
REC-26	Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydroseeding/hydromulching, which is the spraying of seeds, mulch and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25 percent.		•		•	•	•
REC-27	Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils.		•		•	•	•
REC-28	If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring.		•		•	•	•
REC-29	Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).		•		•	•	•
VEGETATION							
VEG-1	During construction, blading of native plant communities will be minimized, consistent with safe construction practices. Where feasible, shrubs will be cut at or near ground level to facilitate re-growth after construction. The footprint of construction and operations facilities will be kept to the minimum necessary. Blading near watercourses will be minimized and BMPs identified in the SWPPPs will be implemented to reduce the risk of materials entering watercourses.		•		•	•	•
VEG-2	Where feasible, locate new access roads to minimize the number of trees removed during construction . However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed).	•			•		
VEG-3	In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
VEG-4	Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagates. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations would not also become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans.		•		•	•	•
VEG-5	The Agency-approved Environmental Compliance Inspection Contractor (CIC) will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.		•		•		
VEG-6	The Companies will consult with the appropriate land management agency to determine tree seedlings to be planted in decommissioned roadbeds and other temporarily disturbed areas on federally managed lands (where trees were removed) to assure seedlings are matched to site conditions.			•	•		
VEG-7	The Companies will notify the USFS when topsoil salvage operations are scheduled and seek assistance with field identification of topsoil material.	•	•		NFS land only		
VEG-8	Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Companies only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Companies will not be required to treat noxious weeds for more than 3 years.			•	•		

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
VEG-9	The Companies will meet the terms and stipulations within the timber sale contracts for timber removal operations on the Medicine Bow-Routt, Caribou-Targhee, and Sawtooth NFs. Note that the Sawtooth NF is not crossed by Segment D.		•		NFS land only		
TES-PLANTS							
TESPL-1	Blowout Penstemon – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.		•		•		
TESPL-2	Colorado Butterfly Plant – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations. Note that this species is not expected to occur in Segment D.		•		•		
TESPL-3	Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	•			•		

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
TESPL-4	Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots. Note that this species is not expected to occur in Segment D.	•	•		•	•	•
TESPL-5	Sand dune and cushion plant communities should be avoided, where feasible.	•	•		•		
TESPL-6	Goose Creek Milkvetch – Surface disturbance will be allowed in suitable habitat for Goose Creek milkvetch where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impacts to populations. Note that this species is not expected to occur in Segment D.	•			•	•	
TESPL-7	Ute Ladies'-tresses – Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	•			•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
STREAMS and WETLANDS							
WET-1	Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.	•			•		
WET-3	Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land managing agency. The Companies and/or Construction Contractor will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.	•			•	•	•
FISH							
FISH-1	On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.		•		•		
FISH-2	When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.		•	•	•	•	•
FISH-3	All wetlands and waters in the project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
WILDLIFE							
WILD-1	Requests for exceptions from closure periods and areas will be submitted by the Companies or the Construction Contractor per the Companies' direction to the appropriate BLM Field Office in which the exception is requested through the Environmental Compliance Inspection Contractor (CIC). Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Companies and approved by the agency will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The Authorized Officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly` construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the USFS.		•	•	•		
WILD-2	Vehicular speeds during construction and operations will be limited to 25 mph on all unsurfaced access roads. Crew and vehicle travel will be restricted to designated routes while on state designated big game winter range (except for areas within the ROW).		•	•	•		
WILD-3	The Project will be designed and constructed in compliance with Avian Power Line Interaction Committee (APLIC) guidance (APLIC 2006, 2012) in order to reduce impacts to avian species. Any changes to the Project's design, as requested by federal, state, or local jurisdictions, as well as any changes considered by the Companies, will also be in compliance with APLIC guidance.	•	•	•	•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
WILD-4	Preconstruction pedestrian or aerial nest surveys will be conducted in suitable habitat during the appropriate nesting time periods needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests. Appropriate buffers will be applied to active nests during construction. All encounters of nesting raptors in the survey area will be reported to the biological monitor and to appropriate agencies.		•		•		
WILD-5	Surveys will be conducted along the route across the Caribou-Targhee NF prior to construction for caves, abandoned mines, and adits. If suitable bat roosts are identified, the Companies will consult with the USFS to determine appropriate protective measures.	•	•		Caribou-Targhee NF only		
WILD-6	Guy wires will be marked with bird deterrent devices on federal lands to avoid avian collisions with structures, as directed by local land manager.	•		•	•		
WILD-7	Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Table 4-1. Additional locations may be identified by the Agencies or the Companies. The flight diverters will be installed as directed in the Companies' approved Avian Protection Plans and in conformance with the MBTA and Eagle Acts as recommended in the current APLIC collision manual.	•		•	•	•	•
WILD-8	Preconstruction pedestrian or aerial surveys will be completed during appropriate nesting time periods, needed to identify each raptor species. The Companies will provide survey results to the Authorized Officer for approval. (See WILD-1)		•		•		
WILD-9	To the extent feasible, all vegetation clearing will be conducted prior to the onset of the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either preconstruction surveys or construction activities, the nest will be identified to species, inconspicuously marked, and vegetation left in place until any young have fledged.		•		•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
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WILD-10	Snags will be maintained along the outer portions of the Project's ROW in order to reduce the impacts to cavity nesting habitat to the extent practical and where not in conflict with the Companies' vegetation management specifications.		•		•		
WILD-11	Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.		•		•		
WILD-12	The Companies will annually document the presence and location of large stick nests on any towers constructed as a result of this Project. Nests will be categorized to species or species group (raptors or ravens), to the extent possible. This will begin following the first year of construction and continue through year 10 of operations. Results will be provided annually to the applicable land management agency and to the USFWS. Note that this is an agency imposed measure.			•	Federal land only		
TES-WILDLIFE							
TESWL-1	H-frame structures will be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species on federally managed lands. Note that this is an agency imposed measure based on the Casper and Rawlins RMPs.	•	•	•	•		
TESWL-2	In the event that an ESA-listed species not covered by the Biological Opinion (BO) is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.		•	•	•	•	•
TESWL-3	Black-footed Ferret – Preconstruction surveys will be conducted for the black-tailed prairie dog (in addition to those already proposed for the white-tailed prairie dog) in Segment 1W. Note that this EPM has been offered by the Companies; however, although the Companies are encouraged to protect all prairie dog towns, formal black-footed ferret surveys within those towns will no longer be required by the BLM.	•	•	•	•	•	•

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
TESWL-4	The Environmental Compliance Inspection Contractor (CIC), an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied structures (e.g., nests, burrows, colonies, dens) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be "microsited" (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.	•			•		
TESWL-5	Grouse Species – The Companies will provide the Agencies a list of the protocols that the Companies will use during greater sage-grouse and sharp-tailed grouse preconstruction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.	•	•	•	•		
TESWL-6	Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.	•	•	•	•		
TESWL-7	Yellow-billed cuckoo - A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.	•	•	•	•		

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
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TESWL-8	Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.		•	•	•		
TESWL-9	Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions will allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).		•	•	•		
TESWL-10	Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.		•	•	•		
TESWL-11	Sage-Grouse – No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer RMP.		•	•	•		
TESWL-12	Colorado River T&E Fishes – A payment of a one-time fee, based on a fee schedule provided by the USFWS, will be made based on the amount of water used during construction of any segments that cross the Colorado River system.		•		•	•	•
TESWL-13	Midget faded rattlesnake – Preconstruction surveys for occupied or potential midget faded rattlesnake hibernacula (i.e., rock outcrops with south to east aspect) will be conducted. The Companies shall prepare a plan identifying measures to reduce impacts to midget faded rattlesnake if they are discovered. This plan shall require approval by BLM and the WGFD prior to its implementation	•	•	•	•		

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
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TESWL-14	For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat. Note that this is an agency imposed measure.	•	•	•	Federal land only		
TESWL-15	Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins Field Office. Note that this is an agency imposed measure.		•		Federal land only		
TESWL-16	Sage-Grouse – If the Kemmerer RMP is amended to allow Proposed Route 4 or Alternatives 4C or 4E to be selected, existing fences within 1 mile of the portion of the Gateway West Project located on lands managed by the Kemmerer RMP will be modified with FireFly Grouse Flight diverters (or a similar product) in order to prevent greater sage-grouse mortalities. Additional site-specific reclamation, such as transplanting sagebrush seedlings within previous disturbed habitats, will also be required to off-set the net loss of sagebrush habitats within the Rock Creek/Tunp management area. Note that this is an agency imposed measure.		•	•	Federal land only		

Table H-1-1. Biological Resources Environmental Protection Measures

EPM Number	Environmental Protection Measures	Application Phase			Applicable to Land Ownership[1/]		
		Design and Engineering	Construction	Operations and Maintenance	Federal Land and all land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
WATER QUALITY							
WQA-23	Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.	•	•	•	•	•	•
WQA-24	On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.	•			•		
WQA-25	All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.	•	•	•	NFS land only		
WQA-26	Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region.	•	•	•	NFS land only		
WQA-27	On non-federal lands, culvert placement should comply with state BMPs.		•	•		•	•
PUBLIC SAFETY (Blasting, Fire, Contamination)							
BLA-2	All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).		•		•	•	•

1/ In Wyoming, the EPMs will be applied to the entire segment (i.e., including the private and state land) except as follows:

- Proposed substation and regeneration sites located on private land, unless they are standard EPMs of the Companies;
- EPMs that are only applicable to a specific BLM Field Office;
- EPMs that are only applicable to National Forest System lands; and
- Private property, if different practices are requested by the property owner and don't violate the law.

In Idaho, Segment 4 predominantly crosses land under private ownership in agriculture and other development, federal land in this segment is mostly clustered. In this segment, EPMs will be applied based on ownership except as follows:

- Proposed transmission line substation and regeneration sites located on private land unless they are standard EPMs of the Companies; and
- Private property, if different practices are requested by the property owner and don't violate the law.

BLA – blasting; FISH – fish; G – general; OM – operation & maintenance; REC – reclamation; TESPL – TES plants; TESWL – TES wildlife; VEG – vegetation; WET – streams and wetlands; WILD – wildlife; WQA – water quality

ATTACHMENT H-2
SEASONAL AND SPATIAL RESTRICTIONS

Appendix H-2. Color Codes and Source Explanation

The seasonal and spatial restrictions come from the following sources:

	Jurisdiction	Document Name	Plan Date	Notes
BLM Casper	Casper Field Office	Casper Resource Management Plan (RMP)	2007	Appendix I contains information regarding requests for exceptions
BLM Rawlins	Rawlins Field Office	Rawlins Field Office Record of Decision (ROD) and Approved Resource Management Plan (RMP)	Dec-08	Appendix 1 - Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities: contains exception/waiver language which allows to BLM to use its discretion in granting exeptions to mitigation and protection, measures with written documentation; Appendix 9 - Exception, Modification, and Waiver Criteria discusses procedures for handling requests for exception from seasonal stipulations and/or conditions of approval
BLM Rawlins	Rawlins Field Office	Final Burrowing Owl Protection Measures	Nov-09	
BLM Rawlins	Rawlins Field Office	Final Pygmy Rabbit Protection Measures	Nov-09	
BLM Rawlins	Rawlins Field Office	Final Bald Eagle Protection Measures	Nov-09	
BLM Rawlins	Rawlins Field Office	Final Big Game Migration Corridor Protection Measures	Nov-09	
BLM Rawlins	Rawlins Field Office	Final Mountain Plover Protection Measures	Nov-09	
BLM Rock Springs	Rock Springs Field Office	Green River Resource Management Plan (RMP)	1997	Appendix 5-2, pages 163 and 164 of the RMP
BLM Kemmerer 2010	Kemmerer Field Office	ROD and RMP 2010	May-10	Appendix N contains information regarding requests for exceptions
BLM Pocatello	BLM Idaho Falls District, Pocatello Field Office	Pocatello Approved Resource Management Plan (ARMP)	2012	Appendix E, page E-4, contains information regarding requests for exceptions
USFS Medicine Bow	Medicine Bow National Forest	Medicine Bow National Forest Revised Land and Resource Management Plan (RLRMP)	2003	Standards are actions that must be followed or are required limits to activities in order to achieve forest goals. Deviations from standards must be analyzed and documented in a forest plan amendment.
USFS Caribou Targhee	Caribou-Targhee National Forest, Caribou Administrative Unit	Caribou Revised Forest Plan (RFP)	2003	Standards are used to promote the achievement of the desired future condition and objectives and to assure compliance with laws, regulations, Executive Orders or policy direction established by the Forest Service. Standards are binding limitations on management activities that are within the authority of the Forest Service to enforce. A standard can also be expressed as a constraint on management activities or practices.
State of WY	Wyoming Game and Fish Department, Cheyenne, Wyoming	Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats, Version 6.0	Apr-10	Page ii of recommendations document Version 6.0: This document provides advanced disclosure of potential wildlife-related concerns, and suggests mitigation and management options companies and resource agencies can incorporate into project designs and operations to benefit wildlife. The recommendations should be considered within areas of important wildlife habitats, in which large-scale energy developments are planned or underway. Maps of crucial big game winter ranges, sage-grouse habitat, priority watersheds, and other important habitats are available from the WGFD website: www.wgf.state.wy.us (Habitat Section). Recommendations may be site-specifically adjusted to accommodate unique issues and circumstances.) Pages 112-113 of the April 2010 Recommendations contain information regarding requests for exceptions to sage-grouse stipulations
USFWS	Nationwide	National Bald Eagle Management Guidelines	May-07	If special circumstances apply to your situation that increase or diminish the likelihood of bald eagle disturbance, or if it is not possible to adhere to the guidelines, contact the local Service Field Office for further guidance.
USFWS	Utah Field Office	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances	Jan-02	It is important to realize that these are guidelines and are subject to modification on a site-specific and project-specific basis dependent on knowledge of the birds; topography and habitat features; and level of the proposed activity. Site-specific modifications should be coordinated with appropriate Service, UDWR, and/or land management agency biologists to ensure that the intent of these guidelines is maintained. (pg 2 of Guidelines)

Stipulations also incorporate BLM and USFS comments, which include clarifications and updates to stipulations provided in the land management plans.

Stipulations do not include all measures found in all land management plans. Measures not included are those which are not specific enough to define a measurable stipulation, measures that describe general goals for the Federal lands but do not address new projects specifically,

Requests for exceptions from closure periods and areas will be submitted by the Companies to the appropriate BLM Field Office in which the exception is requested through the Environmental CIC. Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Companies and approved by the agency will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request to allow for orderly` construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the Forest Service.

"Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities" contains exception/waiver language which allows to BLM to use its discretion in granting exeptions to mitigation and protection measures and is appended to many of the applicable land

Reporting, analysis, and consultation requirements for water depletions are not included here.

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
Y	BLM Casper	Antelope Winter Range	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (TLS) on all crucial big game winter ranges. The authorized officer can grant exceptions. This restriction will not apply to the Salt Creek and Wind River MAs.	pg 2-25 of RMP	Nov 15 to April 30	Within antelope winter range			
N	BLM Casper	Bald Eagle Nesting	Prohibit surface development on public lands in an area from 1/2- to 1-mile of known or discovered bald eagle nests. The specific distance and dimensions of the area on which surface development will be prohibited will be determined on a case-by-case basis after consultation with the USFWS in accordance with the ESA. Bald eagle nests are protected by a 1-mile, year-long buffer zone.	pg 2-22 of RMP, pg Z-77 of App Z of RMP	Year-round	1 mile of bald eagle nests	Y		
Y	BLM Casper	Bald Eagle Wintering	Activities that may disturb bald eagles will be restricted within 1 mile of known communal winter roosts during the period of November 1 to March 31, annually. Deviations may be made after coordination with the Service.	pg Z-67 of App Z of RMP	Nov 1 to March 31	1 mile of known communal bald eagle winter roosts			
Y	BLM Casper	Bald Eagle Wintering	No ground disturbing activities will be permitted within 0.5 mile of active roost sites year round. Deviations may be made after coordination with the Service.	pg Z-67 of App Z of RMP	Year-round	0.5 mile of active roost sites			
Y	BLM Casper	Bald Eagle Wintering	No surface development will be permitted on the winter roosting areas for bald eagles.	pg Z-65 of App Z of RMP	Year-round	Within bald eagle winter roosting areas			
N	BLM Casper	Bighorn Sheep Winter Range	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (TLS) on all crucial big game winter ranges. The authorized officer can grant exceptions. This restriction will not apply to the Salt Creek and Wind River MAs.	pg 2-25 of RMP	Nov 15 to April 30	Within bighorn sheep winter range			
	BLM Casper	Black-footed Ferret	Habitats managed for reintroductions of black-footed ferrets will be addressed on a case-by-case basis. Note: Per recent agency direction, all areas in Wyoming are considered block cleared areas; preconstruction surveys will not be required for the Project.	pg 2-28 of RMP	Year-round	Within habitats managed for reintroductions of black-footed ferrets			
Y	BLM Casper	Blowout Penstemon	No surface occupancy or use (NSO) is allowed on designated critical habitat for threatened or endangered species. Areas known or suspected to contain essential habitat for special status species will be subject to a Controlled Surface Use restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species. Note: No known occupied habitat for blowout penstemon per pg. Z-4 of App. Z (BO) of Casper RMP.	pg 2-22 of RMP	Year-round	Within blowout penstemon designated critical habitat and occupied habitat	Y		
N	BLM Casper	Burrowing Owl	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of active burrowing owl nests	Y		
N	BLM Casper	Colorado Butterfly Plant	No surface occupancy or use (NSO) is allowed on designated critical habitat for threatened or endangered species. Areas known or suspected to contain essential habitat for special status species will be subject to a Controlled Surface Use restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species. Note: No known occupied habitat for Colorado butterfly plant per pg Z-4 of App Z (BO) of Casper RMP.	pg 2-22 of RMP	Year-round	Within Colorado butterfly plant designated critical habitat and occupied habitat	Y		
N	BLM Casper	Colorado Butterfly Plant	For the protection of the Colorado butterfly plant and its potential habitat, surface-disturbing activities should be avoided in the following areas: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: No known occupied habitat for Colorado butterfly plant per pg Z-4 of App Z (BO) of Casper RMP.	pg Z-87 of App Z of RMP	Year-round	Within 100-year flood plains	Y		
N	BLM Casper	Colorado Butterfly Plant	For the protection of the Colorado butterfly plant and its potential habitat, surface-disturbing activities should be avoided in the following areas: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: No known occupied habitat for Colorado butterfly plant per pg Z-4 of App Z (BO) of Casper RMP.	pg Z-87 of App Z of RMP	Year-round	500 feet of perennial waters, springs, wells, and wetlands	Y		
N	BLM Casper	Colorado Butterfly Plant	For the protection of the Colorado butterfly plant and its potential habitat, surface-disturbing activities should be avoided in the following areas: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: No known occupied habitat for Colorado butterfly plant per pg Z-4 of App Z (BO) of Casper RMP.	pg Z-87 of App Z of RMP	Year-round	100 feet of the inner gorge of ephemeral channels	Y		
N	BLM Casper	Columbian Sharp-tailed Grouse Breeding Grounds	Surface occupancy or use within ¼ mile of a sharp-tailed grouse strutting/dancing ground will be restricted or prohibited unless the operator/proponent and the authorized officer arrive at an acceptable plan for mitigation of anticipated impacts (CSU).	pg 2-26 of RMP	Year-round	0.25 mile of Columbian sharp-tailed grouse strutting/dancing ground	Y		
N	BLM Casper	Columbian Sharp-tailed Grouse Breeding Grounds	No surface use is allowed within 1-¾ miles from the ¼ mile protection zone between March 1 and June 15 so that the nesting area around the sharp-tailed grouse strutting/dancing ground can be protected. The authorized officer may authorize exceptions to the time and distance limitations (TLS) in any particular year.	pg 2-26 of RMP	March 1 to June 15	1.75 miles of the 0.25-mile protection zone for Columbian sharp-tailed grouse strutting/dancing ground	Y		
N	BLM Casper	Elk Winter Range	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (TLS) on all crucial big game winter ranges. The authorized officer can grant exceptions. This restriction will not apply to the Salt Creek and Wind River MAs.	pg 2-25 of RMP	Nov 15 to April 30	Within elk winter range			
N	BLM Casper	Ferruginous Hawk	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (timing limitation stipulation; TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of active ferruginous hawk nests	Y		
			Y						

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N	BLM Casper	Ferruginous Hawk	To provide for long-term protection of artificial nesting structure (ANS) sites, a combination of no surface occupancy (NSO) and timing limitation stipulation (TLS) buffer zones will be applied around the nesting structures. The TLS restriction will be from February 1st through July 31st, or until the young fledge. For ferruginous hawk ANS, apply a ½-mile NSO buffer with an additional ½-mile seasonal buffer (total of a 1-mile buffer). For golden eagle ANS, apply a ½-NSO buffer without an additional seasonal buffer (total ½-mile buffer). This restriction is intended to preclude the placement of permanent facilities within the NSO buffers.	pg 2-28 of RMP	Year-round	0.5 mile of artificial nesting structures (ANS) for ferruginous hawk			
			Y				Y		
N	BLM Casper	Golden Eagle	To provide for long-term protection of artificial nesting structure (ANS) sites, a combination of no surface occupancy (NSO) and TLS buffer zones will be applied around the nesting structures. The TLS restriction will be from February 1st through July 31st, or until the young fledge. For ferruginous hawk ANS, apply a ½-mile NSO buffer with an additional ½-mile seasonal buffer (total of a 1-mile buffer). For golden eagle ANS, apply a ½-NSO buffer without an additional seasonal buffer (total ½-mile buffer). This restriction is intended to preclude the placement of permanent facilities within the NSO buffers.	pg 2-28 of RMP	Year-round	0.5 mile of golden eagle artificial nesting structures (ANS)			
			Y				Y		
Y	BLM Casper	Greater Sage-grouse Breeding Grounds	Within Bates Hole and Fish Creek/Willow Creek: Occupied sage-grouse leks will have a ¾-mile CSU buffer to protect breeding habitats. Human activity will be avoided between 8 p.m. and 8 a.m. from March 1 to May 15 (TLS) within this buffer. Leks, which are currently displayed as points, will be displayed as polygons.	pg 2-27 of RMP	March 1 to May 15	0.75 mile of occupied greater sage-grouse leks within Bates Hole	Y		
			Y				Y		
N	BLM Casper	Greater Sage-grouse	Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface disturbance or occupancy within ¼ mile of the perimeter of occupied sage-grouse leks.	pg 2-27 of RMP	Year-round	0.25 mile of occupied greater sage-	Y		
			Y				Y		
Y	BLM Casper	Greater Sage-grouse Breeding Grounds	Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface-disturbing and disruptive activities in suitable sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitats outside the 2-mile buffer from March 15 to July 15 (TLS).	pg 2-27 of RMP	March 15 to July 15	Within suitable greater sage-grouse nesting and early brood-rearing habitats located within 2 miles of occupied leks outside of Bates Hole	Y		
Y	BLM Casper	Greater Sage-grouse Breeding Grounds	Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface-disturbing and disruptive activities in suitable sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitats outside the 2-mile buffer from March 15 to July 15 (TLS).	pg 2-27 of RMP	March 15 to July 15	Within identified greater sage-grouse nesting and early brood-rearing habitats outside of the 2-mile buffer outside of Bates Hole	Y		
	BLM Casper	Greater Sage-grouse Winter Range	Within Bates Hole and Fish Creek/Willow Creek: As sage-grouse winter habitats are designated, a TLS will restrict activities from November 15 to March 14. Within the designated winter habitats, CSU for surface disturbing activities in sagebrush stands of greater than 20 percent canopy cover.	pg 2-27 of RMP	Nov 15 to March 15	Within designated greater sage-grouse winter habitats within Bates Hole			
	BLM Casper	Greater Sage-grouse Winter Range	Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface-disturbing and disruptive activities in sage-grouse winter habitats from November 15 to March 14 (TLS).	pg 2-27 of RMP	Nov 15 to March 15	Within greater sage-grouse winter habitats outside of Bates Hole			
N	BLM Casper	Moose Winter Range	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (TLS) on all crucial big game winter ranges. The authorized officer can grant exceptions. This restriction will not apply to the Salt Creek and Wind River MAs.	pg 2-25 of RMP	Nov 15 to April 30	Within moose winter range			
Y	BLM Casper	Mountain Plover	No surface disturbance or wildlife disturbing activities will be allowed seasonally (April 10 through July 10) within ¼-mile of all potential mountain plover nesting areas. Exceptions to this seasonal restriction require mountain plover surveys (BLM 2004).	pg Z-51 of App Z of RMP	April 10 to July 10	0.25 mile of potential mountain plover nesting areas	Y		
Y	BLM Casper	Mule Deer Winter Range	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (TLS) on all crucial big game winter ranges. The authorized officer can grant exceptions. This restriction will not apply to the Salt Creek and Wind River MAs.	pg 2-25 of RMP	Nov 15 to April 30	Within mule deer winter range			
Y	BLM Casper	Northern Goshawk	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of northern goshawk nests	Y		
N	BLM Casper	Northern Harrier	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of northern harrier nests	Y		
N	BLM Casper	Osprey	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests, except for the species listed below, for which a ¼-mile buffer will be required: ... Osprey ... The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.25 mile of osprey nests	Y		

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Y	BLM Casper	Other Raptors	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests, except for the species listed below, for which a ¼-mile buffer will be required: Red-tailed hawk Swainson's hawk American kestrel Osprey Great horned owl Long-eared owl Northern saw-whet owl Common barn owl Western screech owl The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.25 mile of red-tailed hawk, American kestrel, great horned owl, long-eared owl, northern saw-whet owl, common barn owl, and western screech owl nests	Y		
Y	BLM Casper	Other Raptors	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of raptor nests	Y		
N	BLM Casper	Peregrine Falcon	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of peregrine falcon nests	Y		
Y	BLM Casper	Preble's Meadow Jumping Mouse	An NSO restriction within 500 feet of perennial streams, springs, riparian and wetland habitats, or water bodies is implemented on Class 1 and Class 2 waters, as well as a CSU restriction from 500 feet to ¼ mile of these areas, on a case-by-case basis.	pg Z-78 of App Z of RMP	Year-round	500 feet of perennial streams, springs, riparian and wetland habitats or waterbodies on Class 1 and Class 2 waters	Y		
N	BLM Casper	Short-eared Owl	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests. The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.5 mile of short-eared owl nests	Y		
N	BLM Casper	Swainson's Hawk	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests, except for the species listed below, for which a ¼-mile buffer will be required: ... Swainson's hawk ... The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS). The authorized officer, on a case-by-case basis, may grant exceptions to seasonal stipulations. To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM authorized officer, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	pgs 2-26 and 2-28 of RMP	Feb 1 to July 31	0.25 mile of Swainson's hawk nests	Y		
Y	BLM Casper	Ute Ladies'-tresses Orchid	No ground disturbing construction activities will be authorized within 0.25 miles of any known Ute ladies'- tresses orchid populations during the essential growing season time period (from July through September, the growing, flowering and fruiting stages) to reduce impacts to the species. Note: Limited habitat for Ute ladies'-tresses orchid per pg Z-4 of App Z (BO).	pg Z-62 of App Z of RMP	July 1 to Sept 30	0.25 miles of known Ute ladies'-tresses orchid populations	Y		
Y	BLM Casper	Ute Ladies'-tresses Orchid	For the protection of the orchid and its potential habitat, surface-disturbing activities listed above [not specified], should be avoided in the following areas when they occur outside of the protective 0.25 buffer from populations of the orchid: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: Limited habitat for Ute ladies'-tresses orchid per pg Z-4 of App Z (BO).	pg Z-89 and Z-90 of App Z of RMP	Year-round	Within 100-year flood plains located outside the 0.25-mile buffer of populations	Y		
Y	BLM Casper	Ute Ladies'-tresses Orchid	For the protection of the orchid and its potential habitat, surface-disturbing activities listed above [not specified], should be avoided in the following areas when they occur outside of the protective 0.25 buffer from populations of the orchid: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: Limited habitat for Ute ladies'-tresses orchid per pg Z-4 of App Z (BO).	pg Z-89 and Z-90 of App Z of RMP	Year-round	500 feet of perennial waters, springs, wells, and wetlands located outside the 0.25-mile buffer of populations	Y		
Y	BLM Casper	Ute Ladies'-tresses Orchid	For the protection of the orchid and its potential habitat, surface-disturbing activities listed above [not specified], should be avoided in the following areas when they occur outside of the protective 0.25 buffer from populations of the orchid: (a) identified 100-year flood plains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands, and; (c) areas within 100 feet from the inner gorge of ephemeral channels. Note: Limited habitat for Ute ladies'-tresses orchid per pg Z-4 of App Z (BO).	pg Z-89 and Z-90 of App Z of RMP	Year-round	100 feet of the inner gorge of ephemeral channels located outside of the 0.25-mile buffer of populations	Y		
Y	BLM Casper	Ute Ladies'-tresses Orchid	No surface occupancy or use (NSO) is allowed on designated critical habitat for threatened or endangered species. Areas known or suspected to contain essential habitat for special status species will be subject to a Controlled Surface Use restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species. Note: Limited habitat for Ute ladies'-tresses orchid per pg Z-4 of App Z (BO).	pg 2-22 of RMP	Year-round	Within Ute ladies'-tresses orchid designated critical habitat and occupied habitat	Y		

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Y	BLM Casper	Western Yellow-billed Cuckoo	An NSO restriction within 500 feet of perennial streams, springs, riparian and wetland habitats, or water bodies is implemented on Class 1 and Class 2 waters, as well as a CSU restriction from 500 feet to ¼ mile of these areas, on a case-by-case basis.	pg Z-78 of App Z of RMP	Year-round	500 feet of perennial streams, springs, riparian and wetland habitats or waterbodies on Class 1 and Class 2 waters			
N	BLM Casper	White-tailed Prairie Dog	On a case-by-case basis, project proponents will complete special status surveys (federally listed and BLM sensitive animals) before any surface disturbance begins. Note: Avoid prairie dog towns/complexes.	pg Z-76 of App Z of RMP	Year-round	Within prairie dog towns/complexes	Y		
	BLM Casper	Wyoming Pocket Gopher	On a case-by-case basis, project proponents will complete special status surveys (federally listed and BLM sensitive animals) before any surface disturbance begins.	pg Z-76 of App Z of RMP	Not specified	Not specified	Y		
	BLM Kemmerer 2010	Canada Lynx	If activities are proposed in lynx habitats, the BLM shall ensure that stipulations and conditions of approval for limitations on the timing of activities and surface use and occupancy are developed at the leasing and notice of staking/APD stages. For example, the BLM would require that activities not be conducted at night, when lynx are active, and avoid activity near denning habitats during the breeding season (April or May to July) to protect vulnerable kittens.	pg A-12 of App A of RMP	Not specified	Within lynx habitats			
Y	BLM Kemmerer 2010	Elk Calving	Avoid disruptive activity in elk calving areas from May 1 through June 30.	pg 2-33 of RMP	May 1 to June 30	Within elk calving areas			
	BLM Kemmerer 2010	Pygmy Rabbit	Avoid surface-disturbing activities in occupied pygmy rabbit habitats.	pg 2-38 of RMP	Year-round	Within occupied pygmy rabbit habitat	Y		
Y	BLM Kemmerer 2010	Amphibians	The area within 500 feet of or within wetlands, riparian areas, aquatic habitats, and 100-year floodplains are avoidance areas for surface-disturbing activities.	pg 2-25 of RMP	Year-round	Within 100-year floodplains			
N	BLM Kemmerer 2010	Amphibians	The area within 500 feet of or within wetlands, riparian areas, aquatic habitats, and 100-year floodplains are avoidance areas for surface-disturbing activities.	pg 2-25 of RMP	Year-round	500 feet of surface water and/or riparian areas			
Y	BLM Kemmerer 2010	Antelope Winter Range	Avoid disruptive activity in big game crucial winter range November 15 through April 30.	pg 2-33 of RMP	Nov 15 to April 30	Within antelope winter range			
Y	BLM Kemmerer 2010	Bald Eagle Nesting	Activities and habitat alterations that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones. Deviations may be made after consultation with the USFWS. Zone 1 (within 0.5 mile, year-round) is intended to protect active and alternative nests. For active nests, minimal human activity levels are allowed during the period of first occupancy to 2 weeks after fledging. ...	pg 2-33 of RMP	Year-round	0.5 mile of active and alternative bald eagle nests	Y		
Y	BLM Kemmerer 2010	Bald Eagle Nesting	Activities and habitat alterations that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones. Deviations may be made after consultation with the USFWS. ... Zone 2 (from 0.5 mile to 1 mile from the nest, February 1 through August 15) is intended to protect bald eagle primary use areas and permits light human activity levels. ...	pg 2-33 of RMP	Feb 1 to August 15	0.5 to 1 mile from bald eagle nests	Y		
Y	BLM Kemmerer 2010	Bald Eagle Nesting	Activities and habitat alterations that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones. Deviations may be made after consultation with the USFWS. ... Zone 3 is designated to protect foraging and (or) concentration areas year-round 2.5 miles from the nest.	pg 2-33 of RMP	Year-round	2.5 miles from bald eagle nests	Y		
Y	BLM Kemmerer 2010	Bald Eagle Nesting	In areas where powerlines go over wetland habitats, the observability of the lines will be enhanced for avian species, including bald eagles and whooping cranes, through the addition of "flappers" or other visibility enhancing devices attached to the lines. New powerline construction or communication towers with guy lines over or adjacent to wetland habitats will not be allowed.	pg T-46 of App T of RMP	Year-round	Where powerlines go over wetland habitats			
N	BLM Kemmerer 2010	Bald Eagle Wintering	Apply a "no surface occupancy" restriction to bald eagle winter roosting areas. In addition, a 1-mile buffer zone around bald eagle winter roost sites will be closed from November 1 through April 1.	pg 2-33 of RMP	Year-round	Within bald eagle winter roosting areas			
N	BLM Kemmerer 2010	Bald Eagle Wintering	Apply a "no surface occupancy" restriction to bald eagle winter roosting areas. In addition, a 1-mile buffer zone around bald eagle winter roost sites will be closed from November 1 through April 1.	pg 2-33 of RMP	Nov 1 to April 1	1 mile of bald eagle winter roost sites			
N	BLM Kemmerer 2010	Bighorn Sheep Winter Range	Avoid disruptive activity in big game crucial winter range November 15 through April 30.	pg 2-33 of RMP	Nov 15 to April 30	Within bighorn sheep winter range			
Y	BLM Kemmerer 2010	Black-footed Ferret	When project proposals are received for areas that still require black-footed ferret surveys and meet potential habitat criteria as defined by the USFWS guidelines, the BLM shall initiate coordination with the USFWS at the earliest possible date so that the USFWS can provide input. This should minimize the need to redesign projects at a later date to include black-footed ferret conservation measures, determined as appropriate by the USFWS. In areas identified in conservation measure number one above (non-block cleared areas), if suitable prairie dog town/complex avoidance is not possible, surveys of towns/complexes for black-footed ferrets shall be conducted in accordance with USFWS guidelines and recommendations. This information shall be provided to the BLM and the USFWS in accordance with Section 7 of the Endangered Species Act, and the Interagency Cooperation Regulations. Note: No surface occupancy in endangered species habitat. Per recent agency direction, all areas in Wyoming are considered block cleared areas; preconstruction surveys will not be required for the Project.	pg A-8 of App A of RMP	Year-round	Within non-block cleared areas for black-footed ferret			
	BLM Kemmerer 2010	Burrowing Owl	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from April 15 through September 15, or whenever the young have fledged: ¾-mile buffer: ...burrowing owl... Time periods can be adjusted based on specific needs of identified species.	pg 2-38 of RMP	April 15 to Sept 15	0.75 mile of active burrowing owl nests	Y		
Y	BLM Kemmerer 2010	Elk Winter Range	Avoid disruptive activity in big game crucial winter range November 15 through April 30.	pg 2-33 of RMP	Nov 15 to April 30	Within elk winter range			

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	BLM Kemmerer 2010	Ferruginous Hawk	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31: 1-mile buffer: ferruginous hawk ... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... March 1 through July 31: ...ferruginous hawk... ...	pg 2-38 of RMP	March 1 to July 31	1 mile of active ferruginous hawk nests	Y		
N	BLM Kemmerer 2010	Fish	Protect critical life stages for game and nongame fish species by limiting disturbance activities in fish bearing streams on a case-by-case basis. Coordination with WGFD will occur for specific projects to determine crucial dates. Exceptions can be made if the NEPA analysis shows little or no impact.	pg 2-35 of RMP	Critical life stages for game and nongame fish species	Within fish bearing streams			
Y	BLM Kemmerer 2010	Golden Eagle	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 : ... ¾-mile buffer: golden eagle... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: February 1 through July 15, or whenever the young have fledged: golden eagle...	pg 2-38 of RMP	Feb 1 to July 15	0.75 mile of golden eagle nests	Y		
Y	BLM Kemmerer 2010	Greater Sage-grouse Breeding Grounds	BLM manages sage-grouse habitats that will support population levels consistent with the Wyoming Governor's Sage-Grouse Core Population Area strategy. The following distances and timeframes will be utilized to manage activities that may impact greater sage-grouse or their habitats. These distances and timeframes are based on current information, but may be subject to change in the future based upon new information. • Greater sage-grouse leks: (1) Avoid surface disturbance or occupancy within ¼ mile of the perimeter of occupied greater sage-grouse leks; (2) Avoid human activity between 8 p.m. and 8 a.m. from March 1 through May 15 within ¼ mile of the perimeter of occupied greater sage-grouse leks. ... Appropriate restrictions will be determined on a site-specific basis and will consider project size. Exceptions to CSU and timing restrictions will continue to be considered on a case-by-case basis.	pg 2-37 of RMP	March 15 to July 15	0.25 mile of occupied greater sage-grouse leks	Y		
Y	BLM Kemmerer 2010	Greater Sage-grouse Breeding Grounds	BLM manages sage-grouse habitats that will support population levels consistent with the Wyoming Governor's Sage-Grouse Core Population Area strategy. The following distances and timeframes will be utilized to manage activities that may impact greater sage-grouse or their habitats. These distances and timeframes are based on current information, but may be subject to change in the future based upon new information. ... • Greater sage-grouse nesting and early brood-rearing habitats: Avoid surface-disturbing and disruptive activities in suitable greater sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified greater sage-grouse nesting and early brood-rearing habitats outside the 2-mile buffer from March 15 through July 15. ... Appropriate restrictions will be determined on a site-specific basis and will consider project size. Exceptions to CSU and timing restrictions will continue to be considered on a case-by-case basis.	pg 2-37 of RMP	March 15 to July 15	Within suitable greater sage-grouse nesting and early brood-rearing habitats located within 2 miles of occupied leks	Y		
Y	BLM Kemmerer 2010	Greater Sage-grouse Breeding Grounds	BLM manages sage-grouse habitats that will support population levels consistent with the Wyoming Governor's Sage-Grouse Core Population Area strategy. The following distances and timeframes will be utilized to manage activities that may impact greater sage-grouse or their habitats. These distances and timeframes are based on current information, but may be subject to change in the future based upon new information. ... • Greater sage-grouse nesting and early brood-rearing habitats: Avoid surface-disturbing and disruptive activities in suitable greater sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified greater sage-grouse nesting and early brood-rearing habitats outside the 2-mile buffer from March 15 through July 15. ... Appropriate restrictions will be determined on a site-specific basis and will consider project size. Exceptions to CSU and timing restrictions will continue to be considered on a case-by-case basis.	pg 2-37 of RMP	March 15 to July 15	Within identified greater sage-grouse nesting and early brood-rearing habitats outside of the 2-mile buffer	Y		
Y	BLM Kemmerer 2010	Greater Sage-grouse Winter Range	BLM manages sage-grouse habitats that will support population levels consistent with the Wyoming Governor's Sage-Grouse Core Population Area strategy. The following distances and timeframes will be utilized to manage activities that may impact greater sage-grouse or their habitats. These distances and timeframes are based on current information, but may be subject to change in the future based upon new information. ... • Greater sage-grouse winter habitats: Avoid surface disturbance and disruptive activities in occupied greater sage-grouse winter habitats from November 15 through March 14. ... Appropriate restrictions will be determined on a site-specific basis and will consider project size. Exceptions to CSU and timing restrictions will continue to be considered on a case-by-case basis.	pg 2-37 of RMP	Nov 15 to March 14	Within occupied greater sage-grouse winter habitats			
Y	BLM Kemmerer 2010	Moose Winter Range	Avoid disruptive activity in big game crucial winter range November 15 through April 30.	pg 2-33 of RMP	Nov 15 to April 30	Within moose winter range			
Y	BLM Kemmerer 2010	Moose Winter Range	Motor vehicle travel is seasonally limited in the following crucial big game winter range areas: Slate Creek, Rock Creek, and Bridger Creek. Public access to the areas is closed from January 1 to April 30 (exemptions apply).	pg 2-48 of RMP	Nov 15 to April 30	Within Slate Creek, Rock Creek, and Bridger Creek crucial big game winter range areas			
Y	BLM Kemmerer 2010	Mountain Plover	Apply a seasonal mountain plover protection stipulation from April 10 through July 10 to protect breeding and nesting habitats.	pg 2-33 of RMP	April 10 to July 10	Within mountain plover breeding/nesting habitat	Y		
Y	BLM Kemmerer 2010	Mule Deer Winter Range	Avoid disruptive activity in big game crucial winter range November 15 through April 30.	pg 2-33 of RMP	Nov 15 to April 30	Within mule deer winter range			
	BLM Kemmerer 2010	Northern Goshawk	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest ...northern goshawk (April 1 through August 31): ... ¾-mile buffer: ...northern goshawk... Time periods can be adjusted based on specific needs of identified species. ...	pg 2-38 of RMP	April 1 to August 31	0.75 mile of active northern goshawk nests	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	BLM Kemmerer 2010	Northern Harrier	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 ...: ... ¾-mile buffer: ...northern harrier... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... ... April 1 through July 31: ...northern harrier...	pg 2-38 of RMP	April 1 to July 31	0.75 mile of active northern harrier nests	Y		
	BLM Kemmerer 2010	Osprey	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 ...: ... ¾-mile buffer: ...osprey... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... April 1 through July 31: osprey...	pg 2-38 of RMP	April 1 to July 31	0.75 mile of active osprey nests	Y		
	BLM Kemmerer 2010	Other Raptors	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 with the exception of burrowing owl (April 15 through September 15, or whenever the young have fledged) and northern goshawk (April 1 through August 31): 1-mile buffer: ferruginous hawk ¾-mile buffer: golden eagle, barn owl, red-tailed hawk, great-horned owl, osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk, short-eared owl, long-eared owl, peregrine falcon, screech owl, burrowing owl, northern goshawk, and other raptors Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: February 1 through July 15, or whenever the young have fledged: golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors March 1 through July 31: short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl April 1 through July 31: osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk	pg 2-38 of RMP	Feb 1 to July 15	0.75 miles of raptor nests	Y		
Y	BLM Kemmerer 2010	Other Sensitive Plants	Areas where special status plants are known to exist are ROW avoidance areas. The authorized officer could grant exceptions if analysis shows that there is no adverse impact to the plant populations.	pg 2-36 of RMP	Year-round	Within known locations of special status plant species			
Y	BLM Kemmerer 2010	Other Sensitive Plants	Known locations of special status plant species are protected and closed to the following: Surface-disturbing activities that could adversely impact the plants or their habitats. ... All off-road vehicular use, including those vehicles used for geophysical exploration activities, surveying, etc. Use of explosives and blasting. No NSO on *Physaria dornii* populations.	pg 2-36 of RMP	Year-round	Within known locations of special status plant species			
Y	BLM Kemmerer 2010	Other Sensitive Plants	Known locations of special status plant species are protected and closed to the following: Surface-disturbing activities that could adversely impact the plants or their habitats. ... All off-road vehicular use, including those vehicles used for geophysical exploration activities, surveying, etc. Use of explosives and blasting. No NSO on *Physaria dornii* populations.	pg 2-36 of RMP	Year-round	Within *Physaria dornii* populations			
Y	BLM Kemmerer 2010	Other Sensitive Plants	Surface-disturbing or other disruptive activities, including ROW, in cushion plant communities adversely impact cushion plant communities. Representative cushion plant communities will be NSO areas.	pgs T-74 and T-81 of App T of RMP	Year-round	Within cushion plant communities			
	BLM Kemmerer 2010	Other Sensitive Plants	Potential habitats of special status plant species on federal lands or on split-estate lands require searches for the plant species prior to approving any project or activity. Should special status plant species be found, all surface-disturbing activities are halted until species-specific protective measures are developed and implemented. For federally listed species, protective measures are developed and implemented in coordination with the USFWS.	pg 2-36 of RMP	Year-round	Within potential habitats of special status plant species on federal lands or on split-estate lands	Y		
	BLM Kemmerer 2010	Other Sensitive Plants	Potential habitat areas of special status plant species are areas of controlled surface use (CSU) for surface-disturbing activities.	pg 2-36	Year-round	Within special status plant species habitat			
Y	BLM Kemmerer 2010	Other Sensitive Plants	New unpaved roads could be allowed within 250 feet of special status plant species populations only if under NEPA analysis the road would not adversely impact the species.	pg 2-48 of RMP	Year-round	250 feet of special status plant species populations			
	BLM Kemmerer 2010	Peregrine Falcon	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 ...: ... ¾-mile buffer: ...peregrine falcon... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... March 1 through July 31: ...peregrine falcon... ...	pg 2-38 of RMP	March 1 to July 31	0.75 mile of active peregrine falcon nests	Y		
Y	BLM Kemmerer 2010	Reptiles	The area within 500 feet of or within wetlands, riparian areas, aquatic habitats, and 100-year floodplains are avoidance areas for surface-disturbing activities.	pg 2-25 of RMP	Year-round	500 feet of or within wetlands, riparian areas, aquatic habitats, and 100-year floodplains			

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	BLM Kemmerer 2010	Short-eared Owl	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 ...: ... ¾-mile buffer: ...short-eared owl... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... March 1 through July 31: short-eared owl... ...	pg 2-38 of RMP	March 1 to July 31	0.75 mile from active short-eared owl nests	Y		
	BLM Kemmerer 2010	Swainson's Hawk	Surface-disturbing and disruptive activities to nesting raptors are prohibited within the following distances from an active nest from February 1 through July 31 ...: ... ¾-mile buffer: ...Swainson's hawk... Time periods can be adjusted based on specific needs of identified species. The following time periods will be applied as appropriate: ... April 1 through July 31: ...Swainson's hawk...	pg 2-38 of RMP	April 1 to July 31	0.75 mile of active Swainson's hawk nests	Y		
	BLM Kemmerer 2010	Ute Ladies'-tresses Orchid	All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 miles from any known orchid habitat to minimize disturbances. If avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service. All proposed projects will be designed and locations selected to minimize disturbances to known Ute ladies'-tresses populations, and if the avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service. Projects will not be authorized closer than 0.25 miles from any known Ute ladies'-tresses populations without concurrence of the Service and the Bureau authorized officer. No ground disturbing construction activities will be authorized within 0.25 miles of any known Ute ladies'- tresses populations during the essential growing season time period (from July to September, the growing, flowering and fruiting stages) to reduce impacts to the species.	pg A-5 of App A of RMP	July 1 to Sept 1	0.25 mile of known Ute ladies'-tresses orchid habitat	Y		
Y	BLM Kemmerer 2010	Western Yellow-billed Cuckoo	Apply a 500-foot buffer through seasonal restriction to include the breeding season from May 15 through August 15 and apply rehabilitation standards in or adjacent to yellow-billed cuckoo habitat, when necessary. Where roads, pipelines, and powerlines must be routed through riparian habitats, the construction work should not be accomplished from mid May to mid August, when the cuckoos are nesting.	pg A-13 of App A of RMP	May 15 to August 15	500 feet of yellow-billed cuckoo habitat	Y		
Y	BLM Kemmerer 2010	White-tailed Prairie Dog	Avoid activities that could result in collapse of burrows in occupied white-tailed prairie dog colonies or complexes 200 acres or greater, unless appropriate mitigation occurs.	pg 2-38 of RMP	Year-round	Within occupied prairie dog towns or complexes 200 acres or greater	Y		
Y	BLM Pocatello 2012	Utah Valvata Snail	Quality shoreline habitats will be maintained on all public lands adjacent to the Snake River used by Utah valvata snail. No shore-disturbing activities will be allowed if found to be detrimental to snail populations. Utah valvata snail, All life activities Suitable habitat yearlong	pg 43 of RMP, pg B-1 of App B of RMP	Year-round	Within suitable Utah valvata snail habitat			
N	BLM Pocatello 2012	Antelope Fawning	Big Game (deer, elk) Calving/ fawning, Where known or discovered. Motorized vehicles would be restricted to existing roads from 5/15 to 6/30.	pg B-1 of App B of RMP	May 15 to June 30	Within known or discovered antelope fawning areas			
	BLM Pocatello 2012	Bald Eagle Nesting	New permitted activities which will cause disturbance within the vicinity of occupied nests and primary use areas (Zones I and II) will not be allowed from February 1 to August 15, or winter roosting trees from December 1 to March 1. Bald eagle, 2/1 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg 43 of RMP, pg B-2 of App B of RMP	Feb 1 to August15	0.5 mile from bald eagle nests	Y		
	BLM Pocatello 2012	Bald Eagle Nesting	Within the 2.5-mile home range (Zone III) follow management direction to maintain adequate foraging conditions and aid in maintaining the integrity of Zones I and II.	pg 43 of RMP	Year-round	Within 2.5 mile home range of bald eagles	Y		
	BLM Pocatello 2012	Bald Eagle Wintering	New permitted activities which will cause disturbance within the vicinity of occupied nests and primary use areas (Zones I and II) will not be allowed from February 1 to August 15, or winter roosting trees from December 1 to March 1. Bald eagle winter roosts, 11/15 – 4/15, ½ mile	pg 43 of RMP, pg B-2 of App B of RMP	Nov 15 to April 30	0.5 mile of bald eagle winter roosts			
N	BLM Pocatello 2012	Bighorn Sheep Lambing	Big Game (deer, elk) Calving/ fawning, Where known or discovered. Motorized vehicles would be restricted to existing roads from 5/15 to 6/30.	pg B-1 of App B of RMP	May 15 to June 30	Within known or discovered bighorn sheep lambing areas			
Y	BLM Pocatello 2012	Columbian Sharp-tailed Grouse Breeding Grounds	Sharp-tailed grouse Leks 0.6 mile radius around active lek 3/1 to 5/31 The buffer applies to temporary human disturbance (i.e. routine maintenance, inspections, and construction activities).	pg B-1 of App B of RMP	March 1 to May 31	0.6 mile of active Columbian sharp-tailed grouse leks	Y		
Y	BLM Pocatello 2012	Columbian Sharp-tailed Grouse Breeding Grounds	Sharp-tailed grouse, Nesting and Brood rearing 2.0 mi. from occupied lek yearlong, The buffer applies to permanent surface occupancy (e.g., major transmission power lines, communication towers, temporary meteorological towers).	pg B-1 of App B of RMP	Year-round	2 miles of occupied Columbian sharp-tailed grouse leks	Y		
Y	BLM Pocatello 2012	Columbian Sharp-tailed Grouse Winter Range	Sharp-tailed grouse, Winter range Where mapped or found. 12/15 to 3/1	pg B-1 of App B of RMP	Dec 15 to March 1	Within mapped or found Columbian sharp-tailed grouse winter range			
N	BLM Pocatello 2012	Elk Calving	Big Game (deer, elk) Calving/ fawning, Where known or discovered. Motorized vehicles would be restricted to existing roads from 5/15 to 6/30.	pg B-1 of App B of RMP	May 15 to June 30	Within known or discovered elk calving areas			

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Y	BLM Pocatello 2012	Elk Winter Range	Big Game (deer, elk) Winter range as mapped. Snowmobiles would be restricted to designated routes.	pg B-1 of App B of RMP	Not specified	Limit snowmobile use to designated routes within elk winter range			
	BLM Pocatello 2012	Ferruginous Hawk	Ferruginous hawk, 3/15 – 8/1, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 15 to August 1	0.5 mile from ferruginous hawk nests	Y		
	BLM Pocatello 2012	Fish	Riparian Areas, No closer than 150 feet either side of perennial fish-bearing streams. Yearlong Stream crossings, if necessary, would be designed to minimize adverse impacts to soils, water quality and riparian vegetation per Actions SW-2.1.4 and VE-1.1.4. This buffer does not apply to streams containing cutthroat trout or to Fluid Minerals. Enhanced buffer zones to protect cutthroat trout streams are described in Appendix C. Fluid Minerals uses a 500 foot buffer to protect riparian resources as identified in Appendix E. Note: (No actions for the Company are listed in Appendix E) Where no feasible alternative site exists, operate and construct facilities in ways that would avoid or reduce impacts to riparian zone attributes.	pg B-2 of App B of RMP	Year-round	150 ft of perennial fish-bearing streams (except cutthroat trout or Fluid Minerals)			
	BLM Pocatello 2012	Fish	Riparian Areas, No closer than 100 feet either side perennial non-fish-bearing streams. Yearlong Stream crossings, if necessary, would be designed to minimize adverse impacts to soils, water quality and riparian vegetation per Actions SW-2.1.4 and VE-1.1.4. Note: (No actions for the Company are listed in Appendix E) Where no feasible alternative site exists, operate and construct facilities in ways that would avoid or reduce impacts to riparian zone attributes.	pg B-2 of App B of RMP	Year-round	100 ft of perennial non-fish-bearing streams			
	BLM Pocatello 2012	Fish	Riparian Areas, Fifty feet (50') either side of ephemeral streams. Yearlong Stream crossings, if necessary, would be designed to minimize adverse impacts to soils, water quality and riparian vegetation per Actions SW-2.1.4 and VE-1.1.4. Note: (No actions for the Company are listed in Appendix E) Where no feasible alternative site exists, operate and construct facilities in ways that would avoid or reduce impacts to riparian zone attributes.	pg B-2 of App B of RMP	Year-round	50 ft of ephemeral streams			
Y	BLM Pocatello 2012	Golden Eagle	Golden eagle, 2/1 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	Feb 1 to August 15	0.5 mile of golden eagle nests	Y		
	BLM Pocatello 2012	Gray Wolf	Activities on public lands within the Yellowstone Nonessential Experimental Population Area (east of I-15) or the Central Idaho Nonessential Experimental Population Area (west of I-15) which will disturb within one mile of active gray wolf den sites and rendezvous sites between April 1 and June 30 when five or fewer breeding pairs are present will not be allowed. Gray wolf, Denning, rendezvous site One mile Apr 1 June 30 until 6 or more breeding pairs established or de-listed	pg 43 of RMP, pg B-1 of App B of RMP	April 1 to June 30	1 mile from gray wolf denning rendezvous site			
Y	BLM Pocatello 2012	Greater Sage-grouse Breeding Grounds	Active sage-grouse leks will be protected during the lekking season from temporary human disturbance (e.g., routine maintenance, inspections, and construction activities) by requiring a minimum buffer of 0.6 miles. As appropriate based upon a site specific habitat assessment, protect leks from disturbances from permitted activities for 0.6 mile from Mar 1 to May 31. Greater sage-grouse Leks 0.6 mile radius around active lek 3/1 to 5/31 The buffer applies to temporary human disturbance (i.e. routine maintenance, inspections, and construction activities).	pgs 47 and 48 of RMP, pg B-1 of App B of RMP	March 1 to May 31	0.6 mile of active greater sage-grouse leks	Y		
Y	BLM Pocatello 2012	Greater Sage-grouse Breeding Grounds	New infrastructure facilities/structures (e.g., major power transmission lines, power distribution lines, communications towers, and temporary meteorological towers) requiring permanent surface occupancy will be sited in a manner that avoids sage-grouse habitat to the extent possible and will be placed at least 2.0 miles from occupied leks or other important sage-grouse seasonal habitats as identified locally. Greater sage-grouse, Nesting and Brood rearing 2.0 mi. from occupied lek yearlong, The buffer applies to permanent surface occupancy (e.g., major transmission power lines, communication towers, temporary meteorological towers).	pg 47 of RMP, pg B-1 of App B of RMP	Year-round	2 miles of occupied greater sage-grouse leks	Y		
	BLM Pocatello 2012	Greater Sage-grouse Winter Range	Greater sage-grouse, Winter range Where mapped or found. 12/15 to 3/1	pg B-1 of App B of RMP	Dec 15 to March 1	Within mapped or found greater sage-grouse winter habitats			
N	BLM Pocatello 2012	Mule Deer Fawning	Big Game (deer, elk) Calving/ fawning, Where known or discovered. Motorized vehicles would be restricted to existing roads from 5/15 to 6/30.	pg B-1 of App B of RMP	May 15 to June 30	Within known or discovered mule deer fawning areas			
Y	BLM Pocatello 2012	Mule Deer Winter Range	Big Game (deer, elk) Winter range as mapped. Snowmobiles would be restricted to designated routes.	pg B-1 of App B of RMP	Not specified	Limit snowmobile use to designated routes within mule deer winter range			
	BLM Pocatello 2012	Northern Harrier	Harrier, 4/1 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	April 1 to August 15	0.5 mile of northern harrier nests	Y		

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	BLM Pocatello 2012	Other Raptors	Long-eared owl, 3/1 – 8/1, ¼ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 1 to August 1	0.25 mile of long-eared owl nests	Y		
	BLM Pocatello 2012	Other Raptors	Goshawk, 4/1 – 8/15, ½ mile Cooper's hawk, 4/1 – 8/15, ½ mile Sharp-shinned hawk, 4/1 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	April 1 to August 15	0.5 mile of Cooper's hawk, sharp-shinned hawk, and goshawk nests	Y		
	BLM Pocatello 2012	Other Raptors	Kestrel, 4/1 – 8/15, ¼ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	April 1 to August 15	0.25 mile of kestrel nests	Y		
	BLM Pocatello 2012	Other Raptors	Red-tailed hawk, 3/15 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 15 to August 15	0.5 mile of red-tailed hawk nests	Y		
	BLM Pocatello 2012	Other Raptors	Prairie falcon, 4/1 – 8/31, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	April 1 to August 31	0.5 mile of prairie falcon nests	Y		
	BLM Pocatello 2012	Other Raptors	Great-horned owl, 12/1 – 8/1, ¼ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	Nov 30 to August 1	0.25 mile of great horned owl nests	Y		
	BLM Pocatello 2012	Peregrine Falcon	Peregrine falcon, 3/1 – 8/31, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 1 to August 31	0.5 mile of peregrine falcon nests	Y		
	BLM Pocatello 2012	Short-eared Owl	Short-eared owl, 3/1 – 8/1, ¼ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 1 to August 1	0.25 mile from short-eared owl nests	Y		
	BLM Pocatello 2012	Swainson's Hawk	Swainson's hawk, 3/1 – 8/15, ½ mile On an annual basis, if young of the year birds have fledge, restrictions may be waived or adjusted per Action FW-1.1.9. Site-specific assessments may allow for limitations to be waived or adjusted.	pg B-2 of App B of RMP	March 1 to August 15	0.5 mile of Swainson's hawk nests	Y		
	BLM Rawlins	Amphibians	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	Within 100-year flood plains			
	BLM Rawlins	Amphibians	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	500 feet of perennial waters, springs, wells, and wetlands			
	BLM Rawlins	Amphibians	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	100 feet of the inner gorge of ephemeral channels			
N	BLM Rawlins	Antelope Fawning	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	pg 2-53 of RMP	May 1 to June 30	Within big game parturition areas			
Y	BLM Rawlins	Antelope Winter Range	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	pg 2-53 of RMP	Nov 15 to April 30	Within crucial winter range			
	BLM Rawlins	Antelope Winter Range	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas. Surface occupancy or use within 1/4-mile of identified big game migration corridor will be restricted or prohibited unless project proponent and BLM arrive at acceptable plan for mitigation of impacts. Access roads will not parallel the migration corridor.	pg 2-54 of RMP, per BLM comment on EIS	Year-round	0.25 mile of big game migration corridor			
Y	BLM Rawlins	Bald Eagle Nesting	Surface disturbance or other disruptive activities potentially disruptive to nesting bald eagles will be prohibited within 1 mile of a bald eagle nest during the period of February 1 and August 15 for the protection of nesting areas.	pg 11 of App I of App 14 (BO) of RMP	Feb 1 to August15	1 mile of nesting bald eagles	Y		
Y	BLM Rawlins	Bald Eagle Nesting	In addition, minimal human activities and habitat alterations (See Appendix II and Appendix Table F-2 of the Programmatic Statewide Bald Eagle Biological Assessment (BLM 2003)), that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones Zone 1 (within 1/2- mile February 1 to August 15): intended to protect active and alternative nests. For active nests, minimal human activity levels are allowed during the period of first occupancy to 2 weeks after fledging	pg 11 of App I of App 14 (BO) of RMP	Feb 1 to August 15	0.5 mile of active and alternative bald eagle nests	Y		
Y	BLM Rawlins	Bald Eagle Nesting	In addition, minimal human activities and habitat alterations (See Appendix II and Appendix Table F-2 of the Programmatic Statewide Bald Eagle Biological Assessment (BLM 2003)), that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones Zone 2 (within 1/2-1 mile from the nest February 1 to August 15): intended to protect bald eagle primary use areas and permits light human activity levels	pg 11 of App I of App 14 (BO) of RMP	Feb 1 to August 15	0.5 to 1 mile of bald eagle primary use areas	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
Y	BLM Rawlins	Bald Eagle Nesting	In addition, minimal human activities and habitat alterations (See Appendix II and Appendix Table F-2 of the Programmatic Statewide Bald Eagle Biological Assessment (BLM 2003)), that may disturb bald eagles will be restricted within suitable habitats that occur within bald eagle buffer zones Zone 3: designated to protect faraging/concentration areas year-round. This zone would include one of two larger areas, depending on habitat types: b. 1/2 mile from the streambank of all streams within 2.5 miles of the nest. Site-specific habitat types and foraging areas will be evaluated to determine which zone applies. Zone distances depends on habitat types. Exceptions may be made after consultation with the Service.	pg 11 of App I of App 14 (BO) of RMP	Year-round	2.5 miles from bald eagle nests or 0.5 mile from streams within 2.5 miles of bald eagle foraging/concentration areas (whichever is larger)	Y		
	BLM Rawlins	Bald Eagle Nesting	No ground disturbing activities will be permitted within 1 mile of active roost sites year round.	per BLM comment on EIS	Year-round	1 mile of active bald eagle roost sites			
	BLM Rawlins	Bald Eagle Wintering	Surface-disturbing or disruptive activities potentially disruptive to identified bald eagle communal winter roost sites will be prohibited within one mile of the winter roost site between November 1 and April 1 for the protection of wintering bald eagles.	pg 11 of App I of App 14 (BO) of RMP	Nov 1 to April 1	1 mile of known communal bald eagle winter roosts			
	BLM Rawlins	Bald Eagle Wintering	No ground disturbing activities will be permitted within ½ mile of active bald eagle communal winter roost sites year-round. This buffer zone restriction may be adjusted based on site-specific information through coordination with, including written concurrence, the USFWS Wyoming Field Office.	pg 11 of App I of App 14 (BO) of RMP	Year-round	0.5 mile of active bald eagle communal winter roosts			
Y	BLM Rawlins	Bald Eagle Nesting	Well locations, roads, and ancillary facilities, and other surface structures requiring a repeated human presence, will not be allowed within 1/2 mile of active bald eagle nests. The distance may vary depending on factors such as nest activity, nest topographic barriers, and line-of-sight distance.	pg 12 of App I of App 14 (BO) of RMP	Year-round	0.5 mile of active bald eagle nests	Y		
	BLM Rawlins	Bald Eagle Nesting	Surface disturbing or other disruptive activities potentially disruptive to a bald eagle communal roost will be prohibited within 2 miles of the communal roost during the periond of February 1 to August 15 for the protection of the communal roost areas. A communal roost is defined as an area usually less than 10 acres in size that contains or has contained ≥ 6 bald eagles on any given night. When required, the Bureau will develop a site managment plan (in cooperation with the Service) to identify potential impacts to active bald eagle nests and/or communal roost sites	pg 11 of App I of App 14 (BO) of RMP	Feb 1 to August15	2 miles of communal bald eagle roosts			
Y	BLM Rawlins	Big Game Migration Corridor	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas. To protect the identified big game migration corridor, surface disturbing activities are prohibited between March 1 to May 15 (spring) and Oct 15 to Dec 15 (fall) to protect big game during migration movements.	pg 2-54 of RMP, Per BLM comment received on EIS	March 1 to May 15 (spring) and Oct 15 to Dec 15 (fall)	Within big game migration corridor			
N	BLM Rawlins	Bighorn Sheep Lambing	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	pg 2-53 of RMP	May 1 to June 30	Within big game parturition areas			
N	BLM Rawlins	Bighorn Sheep Winter Range	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	pg 2-53 of RMP	Nov 15 to April 30	Within big game cruicial winter range			
N	BLM Rawlins	Bighorn Sheep Winter Range	Surface occupancy or use within 1/4-mile of identified big game migration corridor will be restricted or prohibited unless project proponent and BLM arrive at acceptable plan for mitigation of impacts. Access roads will not parallel the migration corridor.	per BLM comment on EIS	Year-round	0.25 mile of big game migration corridor			
Y	BLM Rawlins	Black-footed Ferret	If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts will be made to avoid locating surface disturbing activities within 164 feet (50 meters) of a town. If a black-footed ferret non-block cleared town/complex cannot be avoided, then a black-footed ferret survey is required (Appendix 14). Note: Per recent agency direction, all areas in Wyoming are considered block cleared areas; preconstruction surveys will not be required for the Project.	pg 2-54 of RMP	Year-round	164 ft (50 m) of prairie dog towns/complexes suitable as black-footed ferret habitat			
N	BLM Rawlins	Blowout Penstemon	Limit the use of off-highway vehicles (OHV s) to designated roads and trails within 1.0 mile of known blowout penstemon populations, with no exceptions for the "performance of necessary tasks" other than fire fighting and hazardous material cleanup allowed using vehicles off of highways. No OHV competitive events will be allowed within 1.0 mile of known blowout penstemon populations. Existing roads near blowout penstemon populations that are not required for operations or maintenance, or that lead to abandoned projects will be reclaimed as directed by the Bureau. Note: Blowout penstemon does occur within the Rawlins F. O. but their distribution does not overlap with the Project.	pg 16 of App I of App 14 (BO) of RMP	Year-round	1 mile of known blowout penstemon habitat	Y		
N	BLM Rawlins	Blowout Penstemon	All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 mile from any known blowout penstemon habitat to minimize disturbances. If the avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service over the effects of the RMP to the blowout penstemon. Note: Blowout penstemon does occur within the Rawlins F. O. but their distribution does not overlap with this project.	pg 16 of App I of App 14 (BO) of RMP	Year-round	0.25 mile from known blowout penstemon habitat	Y		
Y	BLM Rawlins	Burrowing Owl	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl **• April 15–September 15: Burrowing owl** • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	April 15 to Sept 15	0.75 mile of active burrowing owl nests	Y		
Y	BLM Rawlins	Burrowing Owl	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active burrowing owl nests	Y		
Y	BLM Rawlins	Burrowing Owl	[To protect identified burrowing owl habitat], Surface disturbing and disruptive activities in white-tailed and black-tailed prairie dog towns will be avoided.	pg 2-55 of RMP, language inserted per BLM comment on EIS	Year-round	Within white-tailed and black-tailed prairie dog towns	Y		
Y	BLM Rawlins	Burrowing Owl	[To protect identified burrowing owl habitat], Motorized vehicle use within white-tailed prairie dog towns is limited to either designated roads and vehicle routes or existing roads and vehicle routes, depending on the landownership pattern in the area of specific white-tailed prairie dog complexes.	pg 2-55 of RMP, language inserted per BLM comment on EIS	Year-round	Within white-tailed prairie dog towns	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
Y	BLM Rawlins	Burrowing Owl	[To protect identified burrowing owl habitat], Anti-raptor perching devices will be considered, on a case-by-case basis, for any above-ground facilities within one-quarter mile of prairie dog towns.	pg 2-55 of RMP, language inserted per BLM comment on EIS	Year-round	0.25 mile of prairie dog towns	Y		
Y	BLM Rawlins	Burrowing Owl	[To protect identified burrowing owl habitat], Placement of power poles within prairie dog towns will be avoided; however, in the event that power poles are required to be placed within these towns, raptor anti-perch devices will be required.	pg 2-55 of RMP, language inserted per BLM comment on EIS	Year-round	Within prairie dog towns	Y		
	BLM Rawlins	Colorado Butterfly Plant	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented. within identified 100-year flood plains, 500 ft of open water and/or 100 ft of intermittent or ephemeral channels in potential or known habitat. Management practices will be identified on a case-by-case basis. Limit OHVs to designated roads and trails within 0.5 mile of known populations, with no exceptions. All ROWs will be 1/4 mile from known habitat. (see appendix 24 of the Rawlins RMP)	pg 5 of App I of App 14 (BO) of RMP, per BLM comment received on EIS	Year-round	Within 100-year flood plains in potential or known Colorado butterfly plant habitat	Y		
	BLM Rawlins	Colorado Butterfly Plant	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented. within identified 100-year flood plains, 500 ft of open water and/or 100 ft of intermittent or ephemeral channels in potential or known habitat. Management practices will be identified on a case-by-case basis. Limit OHVs to designated roads and trails within 0.5 mile of known populations, with no exceptions. All ROWs will be 1/4 mile from known habitat. (see appendix 24 of the Rawlins RMP)	pg 5 of App I of App 14 (BO) of RMP, per BLM comment received on EIS	Year-round	500 ft of open water in potential or known Colorado butterfly plant habitat	Y		
	BLM Rawlins	Colorado Butterfly Plant	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented. within identified 100-year flood plains, 500 ft of open water and/or 100 ft of intermittent or ephemeral channels in potential or known habitat. Management practices will be identified on a case-by-case basis. Limit OHVs to designated roads and trails within 0.5 mile of known populations, with no exceptions. All ROWs will be 1/4 mile from known habitat. (see appendix 24 of the Rawlins RMP)	pg 5 of App I of App 14 (BO) of RMP, per BLM comment received on EIS	Year-round	100 ft of intermittent or ephermal channels in potential or known Colorado butterfly plant habitat	Y		
	BLM Rawlins	Colorado Butterfly Plant	The Bureau will limit the use of off road vehicles (OHV s) to designated roads and trails within 0.5 mile of known Colorado butterfly plant populations, with no exceptions for the "performance of necessary tasks" other than fire fighting and hazardous material cleanup allowed using vehicles off of highways.	pg 18 of App I of App 14 (BO) of RMP	Year-round	0.5 mile of known Colorado butterfly plant habitat	Y		
	BLM Rawlins	Colorado Butterfly Plant	All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 miles from any known Colorado butterfly plant habitat to minimize disturbances. If the avoidance of adverse affects is not possible, the Bureau will re-initiate consultation with the Service.	pg 19 of App I of App 14 (BO) of RMP	Year-round	0.25 mile of known Colorado butterfly plant populations	Y		
	BLM Rawlins	Colorado Butterfly Plant	All proposed projects will be designed and locations selected to minimize disturbances to known Colorado butterfly plant populations, and if the avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service. Projects will not be authorized closer than 0.25 miles from any known Colorado butterfly plant populations without concurrence of the Service and the Bureau authorized officer. No ground disturbing construction activities will be authorized within 0.25 miles of any known Colorado butterfly plant populations during the essential growing season time period (from June through September, the growing, flowering and fruiting stages) to reduce impacts to the species.	pg 19 of App I of App 14 (BO) of RMP	June 1 to Sept 30	0.25 mile of known Colorado butterfly plant populations	Y		
N	BLM Rawlins	Columbian Sharp-tailed Grouse Breeding Grounds	Surface disturbing activities or occupancy are prohibited on and within one-quarter mile of the perimeter of an occupied greater sage-grouse or sharp-tailed grouse lek (Map 3-13). [RMP text and Appendix 15 BMPs specify perimeter of leks, but table in RMP only specifies perimeter of leks in certain areas: east of State Highway 789, south of Interstate 80, west of State Highway 71 and Carbon County Road 401, and north of State Highway 70.] Note: Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP, per BLM comment on EIS	Year-round	0.25 mile of occupied Columbian sharp-tailed grouse leks	Y		
N	BLM Rawlins	Columbian Sharp-tailed Grouse Breeding Grounds	Disruptive activities are prohibited between 6:00 p.m. and 9:00 a.m. from March 1 to May 20 on and within one-quarter mile of the perimeter of an occupied greater sage-grouse or sharp-tailed grouse lek. [RMP text and Appendix 15 BMPs specify perimeter of leks, but table in RMP only specifies perimeter of leks in certain areas: east of State Highway 789, south of Interstate 80, west of State Highway 71 and Carbon County Road 401, and north of State Highway 70.] Note: However: note that Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP, per BLM comment on EIS	March 1 to May 20	0.25 mile of occupied Columbian sharp-tailed grouse leks	Y		
	BLM Rawlins	Columbian Sharp-tailed Grouse Breeding Grounds	Nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit in suitable greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat within 2 miles of the perimeter of an occupied greater sage-grouse lek, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat, from March 1 to July 15. Note: Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP	March 1 to July 15	Within suitable Columbian sharp-tailed grouse nesting and early brood rearing habitat within 1 mile of the perimeter of a sharp-tailed grouse lek	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	BLM Rawlins	Columbian Sharp-tailed Grouse Breeding Grounds	Nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit in suitable greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat within 2 miles of the perimeter of an occupied greater sage-grouse lek, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat, from March 1 to July. Note: Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP	March 1 to July 15	Within identified Columbian sharp-tailed grouse nesting and early brood rearing habitat	Y		
N	BLM Rawlins	Columbian Sharp-tailed Grouse Breeding Grounds	High-profile structures (e.g., buildings, storage tanks, overhead power lines, wind turbines, towers, windmills) will be authorized on a case-by-case basis from one-quarter mile to 1 mile of an occupied greater sage-grouse and sharp-tailed grouse lek. Note: Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP	Year-round	0.25 to 1 mile of occupied Columbian sharp-tailed grouse leks	Y		
	BLM Rawlins	Columbian Sharp-tailed Grouse Winter Range	Surface disturbing and disruptive activities potentially disruptive to delineated greater sagegrouse and sharp-tailed grouse winter concentration areas are prohibited during the period of November 15 to March 14 for the protection of greater sage-grouse and sharp-tailed grouse winter concentration areas. Note: Columbian sharp-tailed grouse are found within the Rawlins F. O. but their distribution does not overlap with this project.	pg 2-55 of RMP	Nov 15 to March 14	Within delineated Columbian sharp-tailed grouse winter concentration areas			
N	BLM Rawlins	Elk Calving	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	pg 2-53 of RMP	May 1 to June 30	Within elk calving areas			
N	BLM Rawlins	Elk Winter Range	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	pg 2-53 of RMP	Nov 15 to April 30	Within big game cruicial winter range			
Y	BLM Rawlins	Elk Winter Range	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas. Surface occupancy or use within 1/4-mile of identified big game migration corridor will be restricted or prohibited unless project proponent and BLM arrive at acceptable plan for mitigation of impacts. Access roads will not parallel the migration corridor.	pg 2-54 of RMP, per BLM comment on EIS	Year-round	0.25 mile of big game migration corridor			
	BLM Rawlins	Ferruginous Hawk	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: **• 1-mile buffer: Golden eagle, ferruginous hawk** • Three-quarter-mile buffer: All others • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk **• March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl** • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	March 1 to July 31	1 mile of active ferruginous hawk nests	Y		
	BLM Rawlins	Ferruginous Hawk	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	1,200 feet of active ferruginous hawk nests	Y		
	BLM Rawlins	Fish	In-stream construction activities prohibited between March 1 and June 15 for the protection of spawning habitat. Minimize the duration of construction and concentrate activities during dry conditions.	per BLM comments	March 1 to June 15	Within fish bearing streams			
	BLM Rawlins	Flammulated Owl	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** **• February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors** • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	February 1 - July 15	0.75 mile of active flammulated owl nests	Y		
	BLM Rawlins	Flammulated Owl	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pg 2-53 of RMP	Year-round	825 feet of active flammulated owl nests	Y		
	BLM Rawlins	Golden Eagle	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: **• 1-mile buffer: Golden eagle, ferruginous hawk** • Three-quarter-mile buffer: All others **• February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors** • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	Feb 1 to July 15	1 mile of active golden eagle nests	Y		
	BLM Rawlins	Golden Eagle	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active golden eagle nests	Y		
Y	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Surface disturbing activities or occupancy are prohibited on and within one-quarter mile of the perimeter of an occupied greater sage-grouse or sharp-tailed grouse lek (Map 3-13).	pg 2-55 of RMP	Year-round	0.25 mile of occupied greater sage-grouse leks	Y		
Y	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Disruptive activities are prohibited between 6:00 p.m. and 9:00 a.m. from March 1 to May 20 on and within one-quarter mile of the perimeter of an occupied greater sage-grouse or sharp-tailed grouse lek.	pg 2-55 of RMP	March 1 to May 20	0.25 mile of occupied greater sage-grouse leks	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit in suitable greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat within 2 miles of the perimeter of an occupied greater sage-grouse lek, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat, from March 1 to July 15.	pg 2-55 of RMP	March 1 to July 15	Within suitable greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat located within 2 miles of occupied greater sage-grouse leks	Y		
	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit in suitable greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat within 2 miles of the perimeter of an occupied greater sage-grouse lek, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified greater sage-grouse and sharp-tailed grouse nesting and early brood rearing habitat, from March 1 to July 15.	pg 2-55 of RMP	March 1 to July 15	Within identified greater sage-grouse nesting and early brood-rearing habitats			
	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Surface disturbing or disruptive activities within greater sage-grouse breeding or nesting habitat will require the use of BMPs designed to reduce both the direct loss of habitat and disturbance to the birds during the critical breeding and nesting seasons (Appendix 15).	pg 2-55 of RMP	Critical breeding and nesting seasons - not specified	Within greater sage-grouse breeding or nesting habitat			
Y	BLM Rawlins	Greater Sage-grouse Breeding Grounds	High-profile structures (e.g., buildings, storage tanks, overhead power lines, wind turbines, towers, windmills) will be authorized on a case-by-case basis from one-quarter mile to 1 mile of an occupied greater sage-grouse and sharp-tailed grouse lek.	pg 2-55 of RMP	Year-round	0.25 to 1 mile of occupied greater sage-grouse and sharp-tailed grouse leks	Y		
Y	BLM Rawlins	Greater Sage-grouse Breeding Grounds	Avoidance of surface disturbance or other disruptive activity from March 1 through July 15 up to 2 miles from an "active" lek in suitable greater sage-grouse nesting habitat. These dates reflect recommendations from WGFD based on site-specific data for the Resource Management Plan Planning Area (RMPPA).	A15-2	March 1 to July 15	up to 2 miles from active leks	Y		
Y	BLM Rawlins	Greater Sage-grouse Winter Range	Surface disturbing and disruptive activities potentially disruptive to delineated greater sage-grouse and sharp-tailed grouse winter concentration areas are prohibited during the period of November 15 to March 14 for the protection of greater sage-grouse and sharp-tailed grouse winter concentration areas.	pg 2-55 of RMP	Nov 15 to March 14	Within identified greater sage-grouse winter concentration areas			
N	BLM Rawlins	Moose Calving	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	pg 2-53 of RMP	May 1 to June 30	Within big game parturition areas			
N	BLM Rawlins	Moose Winter Range	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	pg 2-53 of RMP	Nov 15 to April 30	Within crucial winter range			
	BLM Rawlins	Moose Winter Range	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas. Surface occupancy or use within 1/4-mile of identified big game migration corridor will be restricted or prohibited unless project proponent and BLM arrive at acceptable plan for mitigation of impacts. Access roads will not parallel the migration corridor.	pg 2-54 of RMP, per BLM comment on EIS	Year-round	0.25 mile of big game migration corridor			
Y	BLM Rawlins	Mountain Plover	Surface disturbing and disruptive activities located in potential mountain plover habitat are prohibited during the reproductive period of April 10 to July 10 for the protection of breeding and nesting mountain plover. Additional protection measures will be applied if this area is later determined to be within occupied habitat (Appendix 16). Occupied habitat is defined as areas where broods and adults have been found. To minimize destruction of nests and disturbance of breeding mountain plovers, no reclamation activities or other ground-disturbing activities will occur from April 10–July 10 unless surveys consistent with the Plover Guidelines or other methods approved by the USFWS find that no plovers are nesting in the area.	pg 2-52 of RMP, pg 2 of App 16 of RMP	April 10 to July 10	Within potential and occupied mountain plover nesting and breeding habitat	Y		
Y	BLM Rawlins	Mountain Plover	To protect the identified mountain plover-occupied habitat, seed mixes and application rates for reclamation will be designed to produce stands of sparse, low-growing vegetation suitable for plover nesting.	pg 1 of App 16 of RMP	Year-round	Within identified mountain plover-occupied area	Y		
Y	BLM Rawlins	Mountain Plover	To protect the identified mountain plover-occupied habitat, power lines will be buried or poles will include a perch-inhibitor in their design. This will be required within one-half mile of the identified mountain plover-occupied habitat	Appendix 16, page 1	Year-round	0.5 mile of identified occupied mountain plover habitat	Y		
N	BLM Rawlins	Mule Deer Fawning	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	pg 2-53 of RMP	May 1 to June 30	Within big game parturition areas			
Y	BLM Rawlins	Mule Deer Winter Range	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	pg 2-53 of RMP	Nov 15 to April 30	Within mule deer winter range			
Y	BLM Rawlins	Mule Deer Winter Range	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas. Surface occupancy or use within 1/4-mile of identified big game migration corridor will be restricted or prohibited unless project proponent and BLM arrive at acceptable plan for mitigation of impacts. Access roads will not parallel the migration corridor.	pg 2-54 of RMP, per BLM comment on EIS	Year-round	0.25 mile of mule deer winter range			
	BLM Rawlins	Northern Goshawk	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl **• April 1–August 31: Goshawk**	pgs 2-53, 2-66, and 2-67 of RMP	April 1 to August 31	0.75 mile of active northern goshawk nests	Y		
	BLM Rawlins	Northern Goshawk	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active northern goshawk nests	Y		

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	BLM Rawlins	Northern Harrier	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors **• April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk** • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	April 1 to July 31	0.75 mile of active northern harrier nests	Y		
	BLM Rawlins	Northern Harrier	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active northern harrier nests	Y		
	BLM Rawlins	Osprey	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors **• April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk** • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	April 1 to July 31	0.75 mile of active osprey nests	Y		
	BLM Rawlins	Osprey	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active osprey nests	Y		
	BLM Rawlins	Other Raptors	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors **• April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk** • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	April 1 to July 31	0.75 mile of active prairie falcon, sharp-shinned hawk, kestrel, merlin, and Cooper's hawk nests	Y		
	BLM Rawlins	Other Raptors	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk **• March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl** • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	March 1 to July 31	0.75 mile of active long-eared owl and screech owl nests	Y		
	BLM Rawlins	Other Raptors	9. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** **• February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors** • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	Feb 1 to July 15	0.75 mile of active barn owl, great horned owl, red-tailed hawk, and other raptor nests	Y		
	BLM Rawlins	Other Raptors	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active raptor nests	Y		
	BLM Rawlins	Peregrine Falcon	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk **• March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl** • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	March 1 to July 31	0.75 mile of active peregrine falcon nests	Y		
	BLM Rawlins	Peregrine Falcon	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active peregrine falcon nests	Y		

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	BLM Rawlins	Preble's Meadow Jumping Mouse	Surface disturbing and other disruptive activities located within identified or known breeding habitat (within 100 meters [330 feet] of the identified 100-year flood plain) for the Preble's meadow jumping mouse will not be allowed between May 15 and August 15 for the protection of the mouse. Surface disturbing and disruptive activities in identified habitats (Albany and Laramie Counties) are prohibited during May 15-August 15; surface disturbing and disruptive activities in hibernaculum habitats (Albany and Laramie Counties) are prohibited during the period August 16-May 14. Avoid construction in 100-year flood plains, 500 feet of open water, and/or 100 feet of intermittent or ephemeral channels.	pg 7 of App I of App 14 (BO) of RMP, per BLM comment on EIS	May 15 to August 15	100 meters of the identified 100-year flood plain in Albany and Laramie Counties	Y		
	BLM Rawlins	Preble's Meadow Jumping Mouse	Where Preble's habitat is identified in any given project area, surface disturbing and destructive activities will be limited during critical time periods and within 100 meters of the 100-year flood plain, reducing disturbance and loss to the mouse and the habitat (see Appendix I for Bureau-committed conservation measures). Surface disturbing and other disruptive activities located within an identified hibernaculum area for the Preble's meadow jumping mouse will be intensively managed between August 16 and May 14 for the protection of the mouse. Intensive management may vary from year to year and includes the use of inventory and proper distance restrictions.	pg 75 of App 14 (BO) or RMP, pg 7 of App I of App 14 (BO) of RMP	August 16 to May 14	Within identified Preble's Meadow Jumping Mouse hibernaculum habitats (Albany and Laramie Counties)			
	BLM Rawlins	Preble's Meadow Jumping Mouse	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided.	pg 5 of App I of App 14 (BO) of RMP	Year-round	Within 100-year flood plains	Y		
	BLM Rawlins	Preble's Meadow Jumping Mouse	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided.	pg 5 of App I of App 14 (BO) of RMP	Year-round	500 feet of open water	Y		
	BLM Rawlins	Preble's Meadow Jumping Mouse	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided.	pg 5 of App I of App 14 (BO) of RMP	Year-round	100 feet of intermittent or ephemeral channels	Y		
(Y -from point data)	BLM Rawlins	Pygmy Rabbit	Occupied/identified habitat: Avoid tall and dense sagebrush habitat patches where possible and fence to identify areas of no surface disturbance. These areas identified case by case. Required mitigation identified case by case.	per BLM comment on EIS	Year-round	Within occupied/identified pygmy rabbit habitat	Y		
N	BLM Rawlins	Raptor Concentration Areas	Surface disturbing and disruptive activities will be intensively managed in all raptor concentration areas (RCA) to reduce physical disturbance of raptor habitat and disturbance to the birds. This will entail a case-by-case examination of proposals. Note: No mapped RCAs are found within the Project area.	pg 2-52 of RMP	Year-round	Within raptor concentration areas			
	BLM Rawlins	Reptiles	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	Within 100-year flood plains			
	BLM Rawlins	Reptiles	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	500 feet of perennial waters, springs, wells, and wetlands			
	BLM Rawlins	Reptiles	Surface disturbing and disruptive activities will be intensively managed (BMPs) (Appendices 14 and 15) to maintain or enhance reptile and amphibian species and their habitats. For the protection of amphibian species and their habitats, surface disturbing and disruptive activities will be avoided in the following areas: (1) identified 100-year floodplains, (2) areas within 500 feet of perennial waters, springs, wells, and wetlands, and (3) areas within 100 feet of the inner gorge of ephemeral channels.	pg 2-54 of RMP	Year-round	100 feet of the inner gorge of ephemeral channels			
	BLM Rawlins	Short-eared Owl	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors • April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk **• March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl** • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	March 1 to July 31	0.75 mile of active short-eared owl nests	Y		
	BLM Rawlins	Short-eared Owl	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active short-eared owl nests	Y		

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	BLM Rawlins	Swainson's Hawk	Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods: • 1-mile buffer: Golden eagle, ferruginous hawk **• Three-quarter-mile buffer: All others** • February 1–July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors **• April 1–July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson's hawk, Cooper's hawk** • March 1–July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl • April 15–September 15: Burrowing owl • April 1–August 31: Goshawk	pgs 2-53, 2-66, and 2-67 of RMP	April 1 to July 31	0.75 mile of Swainson's hawk nests	Y		
	BLM Rawlins	Swainson's Hawk	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	pgs 2-53 and 2-67 of RMP	Year-round	825 feet of active Swainson's hawk nests	Y		
	BLM Rawlins	Ute Ladies'-tresses Orchid	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented.	pg 5 of App I of App 14 (BO) of RMP	Year-round	Within 100-year floodplains within potential or known Ute ladies'-tresses orchid habitat	Y		
	BLM Rawlins	Ute Ladies'-tresses Orchid	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented.	pg 5 of App I of App 14 (BO) of RMP	Year-round	Within 500 ft of open water within potential or known Ute ladies'-tresses orchid habitat	Y		
	BLM Rawlins	Ute Ladies'-tresses Orchid	Construction activities located within identified 100-year flood plains, 500 feet of open water and/or 100 feet of intermittent or ephemeral channels in potential and/or known habitat for T &E and Special Status Species will be avoided. Stream crossings for roads and pipelines will be constructed during the period oflowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow groundwaters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, riprap, and mulch would be implemented.	pg 5 of App I of App 14 (BO) of RMP	Year-round	Within 100 ft of intermittent or ephemeral channels within potential or known Ute ladies'-tresses orchid habitat	Y		
	BLM Rawlins	Ute Ladies'-tresses Orchid	The Bureau will limit the use of off road vehicles (OHVs) to designated roads and trails within 0.5 miles of known Ute ladies'-tresses populations, with no exceptions for the "performance of necessary tasks" other than fire fighting and hazardous material cleanup allowed using vehicles off of highways...	pg 21 of App I of App 14 (BO) of RMP	Year-round	0.5 mile of known Ute ladies'-tresses orchid populations	Y		
	BLM Rawlins	Ute Ladies'-tresses Orchid	All proposed rights-of-way projects (powerlines, pipelines, roads, etc.) will be designed and locations selected at least 0.25 miles from any known orchid habitat to minimize disturbances. If avoidance of adverse effects is not possible, the Bureau will re-initiate consultation with the Service.	pg 22 of App I of App 14 (BO) of RMP	Year-round	0.25 mile of known Ute ladies'-tresses orchid habitat	Y		
	BLM Rawlins	Western Yellow-billed Cuckoo	Surface disturbing and disruptive activities potentially disruptive to Western yellow-billed cuckoos are prohibited within one-half mile of identified habitat from April 15 to August 15 for the protection of nesting Western yellow-billed cuckoos. Surface disturbing or other disruptive activities will be prohibited within 1/2-mile of identified habitat during the period April 15 to August 15 for the protection of nesting Western yellow-billed cuckoos.	pg 2-54 of RMP, pg 13 of App I of App 14 (BO) of RMP	April 15 to August 15	0.5 mile of identified western yellow-billed cuckoo nesting habitat	Y		
	BLM Rawlins	Western Yellow-billed Cuckoo	Surface disturbing activities would be avoided within 500 feet of perennial waters and wetland/riparian areas for protection of Western yellow-billed cuckoo and identified habitat.	pg 12 of App I of App 14 (BO) of RMP	Year-round	500 feet of perennial waters and wetland/riparian areas.	Y		
Y	BLM Rawlins	White-tailed Prairie Dog	Surface disturbing and disruptive activities in white-tailed and black-tailed prairie dog towns will be avoided. Motorized vehicle use within white-tailed prairie dog towns is limited to either designated roads and vehicle routes or existing roads and vehicle routes, depending on the landownership pattern in the area of specific white-tailed prairie dog complexes.	pg 2-55 of RMP	Year-round	Within prairie dog towns/complexes	Y		
Y	BLM Rawlins	White-tailed Prairie Dog	Anti-raptor perching devices will be considered, on a case-by-case basis, for any above-ground facilities within one-quarter mile of prairie dog towns	pg 2-55 of RMP	Year-round	0.25 mile of prairie dog towns	Y		
Y	BLM Rawlins	White-tailed Prairie Dog	Placement of power poles within prairie dog towns will be avoided; however, in the event that power poles are required to be placed within these towns, raptor anti-perch devices will be required.	pg 2-55 of RMP	Year-round	Within prairie dog towns	Y		
	BLM Rawlins	Wyoming Pocket Gopher	Avoid active Wyoming pocket gopher mounds by 75 meters. Additional mitigation identified case by case. (No mitigation required for Northern pocket gophers.)	per BLM comments	Year-round	75 meters from active Wyoming pocket gopher mounds	Y		
Y	BLM Rock Springs	Antelope Winter Range	Table 7. Seasonal restrictions for all surface disturbance activities Big Game Crucial Winter Ranges-November 15- April 30 - Antelope, elk, moose, and mule deer crucial winter ranges To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	Nov 15 to April 30	Within antelope winter range			

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Y	BLM Rock Springs	Bald Eagle Nesting	Zones 1 and 2: within 1 mile of all nests. For active nests, minimal human activity levels allowed from first occupancy to 2 weeks after fledging. Note: See bald eagle zones for other BLM RMPs for restriction language.	per comment received from BLM	Feb 1 to August15	1 mile of all bald eagle nests	Y		
Y	BLM Rock Springs	Bald Eagle Nesting	Zone 3: foraging/concentration areas: a) 2.5 miles from nest; b) 0.5 mile from streambank within 2.5 miles of nest. Note: See bald eagle zones for other BLM RMPs for restriction language.	per comment received from BLM	Year-round	2.5 miles from bald eagle nests or 0.5 mile from streams within 2.5 miles of bald eagle foraging/concentration areas (whichever is larger)	Y		
	BLM Rock Springs	Burrowing Owl	Table 7. Seasonal restrictions for all surface disturbance activities Burrowing Owl Nest-February 1 - July 31 - Within 1/2-mile radius	pg 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of active (used within the last 3 years) burrowing owl nests	Y		
N	BLM Rock Springs	Elk Calving	Table 7. Seasonal restrictions for all surface disturbance activities Parturition Areas-May 1 - June 30 - Designated parturition areas To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	May 1 to June 30	Within elk calving areas			
N	BLM Rock Springs	Elk Winter Range	Table 7. Seasonal restrictions for all surface disturbance activities Big Game Crucial Winter Ranges-November 15- April 30 - Antelope, elk, moose, and mule deer crucial winter ranges To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer. Note: Exceptions may be granted Nov 15 to Dec 1 and April 1 to April 30.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	Nov 15 to April 30 (exceptions may be granted Nov 15 to Dec 1 and April 1 to April 30)	Within elk winter range			
	BLM Rock Springs	Ferruginous Hawk	Table 7. Seasonal restrictions for all surface disturbance activities Ferruginous Hawk Nest-February 1 - July 31 - Within 1-mile radius	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	1 mile of ferruginous hawk nests that have been used within the last 3 years	Y		
	BLM Rock Springs	Fish	Surface disturbing and construction activities (e.g., mineral exploration and development activities, pipelines, powerlines, roads, recreation sites, fences, wells, etc.) that could adversely affect water quality, and wetland and riparian habitat, will avoid the area within 500 feet of or on 100-year floodplains, wetlands, or perennial streams and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages. Proposals for linear crossings in these areas will be considered on a case-by-case basis. Seasonal restrictions for surface disturbing activities to protect game fish and special status fish populations during spawning will be applied as necessary. All surface disturbance, permanent facilities, etc., shall remain a minimum of 500 feet away from the edge of surface waters, riparian areas. wetlands. and 100-year floodplains unless it is determined through site specific analysis and the Area Manager approves in writing, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures would be determined case by case and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	pgs 22, 25, and 161 (App 5-1)of RMP	Year-round	500 ft of standing or flowing water, 100-year floodplains, and/or riparian/wetland areas			
	BLM Rock Springs	Fish	Surface disturbing and construction activities (e.g., mineral exploration and development activities, pipelines, powerlines, roads, recreation sites, fences, wells, etc.) that could adversely affect water quality, and wetland and riparian habitat, will avoid the area within 500 feet of or on 100-year floodplains, wetlands, or perennial streams and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages. Proposals for linear crossings in these areas will be considered on a case-by-case basis. Seasonal restrictions for surface disturbing activities to protect game fish and special status fish populations during spawning will be applied as necessary. All surface disturbance, permanent facilities, etc., shall remain a minimum of 500 feet away from the edge of surface waters, riparian areas. wetlands. and 100-year floodplains unless it is determined through site specific analysis and the Area Manager approves in writing, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures would be determined case by case and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	pgs 22, 25, and 161 (App 5-1)of RMP	Year-round	100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages			
	BLM Rock Springs	Fish	Fish spawning areas would be protected by preventing or restricting stream disturbance activities during spawning periods. Disturbance activities in game fish spawning areas (spring or fall spawning) determined on case-by-case basis.	pgs 65 (Table 8) and 204 (App 10-1)	Spring and fall spawning periods	Within fish spawning areas			
	BLM Rock Springs	Flammulated Owl	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of flammulated owl nests	Y		
	BLM Rock Springs	Golden Eagle	Table 7. Seasonal restrictions for all surface disturbance activities Golden Eagle Nest-February 1 - July 31 - Within 1/2-mile radius	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of golden eagle nests	Y		
Y	BLM Rock Springs	Greater Sage-grouse Breeding Grounds	To protect breeding grouse, disruptive activities will avoid occupied grouse leks from 8:00 p.m. to 8:00 a.m. daily. The actual area to be avoided and appropriate time frame (usually from March 1 through May 15) will be determined on a case-by-case basis (Table 2). The avoidance area size (usually within 1/4 to 1/2 mile of the lek) may vary depending on natural topographic barriers, terrain, line of sight distance, etc. (Appendix 7). [digital version]	pg 24; updated via plan maintenance action (N). 24-1)	March 1 to May 15	0.25 to 0.5 mile of greater sage-grouse leks	Y		

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Y	BLM Rock Springs	Greater Sage-grouse Breeding Grounds	To protect grouse nesting habitat, seasonal restrictions will apply within appropriate distances from the grouse lek. Appropriate distances (up to two miles) and time frames (usually from March 1 to July 15) will be determined on a case-by-case basis (Table 8). Exceptions to seasonal restrictions may be granted provided the criteria in Appendix 7 can be met. [digital version]	pg 24; updated via plan maintenance action (N). 24-1)	March 15 to July 15	2 miles of greater sage-grouse leks	Y		
N	BLM Rock Springs	Moose Winter Range	Table 7. Seasonal restrictions for all surface disturbance activities Big Game Crucial Winter Ranges-November 15- April 30 - Antelope, elk, moose, and mule deer crucial winter ranges To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	Nov 15 to April 30	Within moose winter range			
	BLM Rock Springs	Mountain Plover	April 10 to July 10 in potential habitat. Additional protection measures will be applied if these areas are later determined to be within occupied habitat.	per BLM comment	April 10 to July 10	Within potential mountain plover habitat	Y		
N	BLM Rock Springs	Mule Deer Fawning	Table 7. Seasonal restrictions for all surface disturbance activities Parturition Areas-May 1 - June 30 - Designated parturition areas To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	May 1 to June 30	Within mule deer parturition areas			
Y	BLM Rock Springs	Mule Deer Winter Range	Table 7. Seasonal restrictions for all surface disturbance activities Big Game Crucial Winter Ranges-November 15- April 30 - Antelope, elk, moose, and mule deer crucial winter ranges To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30. Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects. Exception, waiver, or modification of this limitation in any year may be approved in writing, including documented supporting analysis, by the Authorized Officer. Note: Exceptions may be granted Nov 15 to Dec 1 and April 1 to April 30.	pgs 65 (Table 8), 111 (App 2), and 210 of RMP (App 10-1, Table 7)	Nov 15 to April 30 (exceptions may be granted Nov 15 to Dec 1 and April 1 to April 30)	Within mule deer winter range			
	BLM Rock Springs	Northern Goshawk	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of northern goshawk nests	Y		
	BLM Rock Springs	Northern Harrier	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of northern harrier nests	Y		
	BLM Rock Springs	Osprey	Table 7. Seasonal restrictions for all surface disturbance activities Osprey-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of osprey nests	Y		
	BLM Rock Springs	Other Raptors	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of raptor nests	Y		
	BLM Rock Springs	Peregrine Falcon	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of peregrine falcon nests	Y		
	BLM Rock Springs	Pygmy Rabbit	The Pygmy Rabbit has been recently petitioned again in 2008 (73 FR 1312). This species relies on dense sagebrush areas especially for food and cover. Pygmy rabbit abundance and trend in Wyoming are unknown. Restrictive home range requirements and high habitat specificity make Brachylagus idahoensis vulnerable to disturbance. The major threats include: habitat loss and fragmentation due to road and oil/gas development, fire, and the expansion of non-native vegetation, such as cheatgrass (Keinath and McGee 2004). Specialized ecological refugia are threatened on BLM-administered lands and Pygmy Rabbit is thereby designated as Sensitive in Wyoming. Note: Avoid habitat where possible.	BLM Wyoming Sensitive Species Policy List, March 31, 2010, p5	Year-round	Not specified	Y		
Y	BLM Rock Springs	Reptiles	The major anthropogenic threats are: vehicle collision, which is likely to be increased by oil/gas and road development; unrestricted motorized recreation; and unregulated collections by reptile enthusiasts (NatureServe2009). Midget Faded Rattlesnake specialized ecological refugia are threatened and this species is thereby designated as Sensitive in Wyoming. Note: Avoid placing poles in potential den sites of midget faded rattlesnake.	BLM Wyoming Sensitive Species Policy List, March 31, 2010, p19	Year-round	Within potential midget faded rattlesnake den sites	Y		
	BLM Rock Springs	Short-eared Owl	Table 7. Seasonal restrictions for all surface disturbance activities Other Raptors-February 1 - July 31 - Within 1/2-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	0.5 mile of short-eared owl nests	Y		

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	BLM Rock Springs	Swainson's Hawk	Table 7. Seasonal restrictions for all surface disturbance activities Swainson's Hawk-February 1 - July 31 - Within 1-mile radius Note: Protection will be determined on a case-by-case basis.	pgs 65 (Table 8) and 210 of RMP (App 10-1, Table 7)	Feb 1 to July 31	1 mile of Swainson's hawk nests	Y		
	BLM Rock Springs	Ute Ladies'-tresses Orchid	Known locations of special status plant species communities will be protected and closed to: 1) surface disturbing activities or any disruptive activity that could adversely affect the plants or their habitat; 2) the location of new mining claims (withdrawal from mineral location and entry under the land laws will be pursued); 3) mineral material sales; 4) all off-road vehicular use, including those vehicles used for geophysical exploration activities, surveying, etc.; and 5) the use of explosives and blasting. (See Map 23, Table 2, and Table 4; also see the discussion in Lands and Realty Management and Minerals Management.) Management prescriptions for threatened and endangered species and proposed threatened and endangered species will be developed on a case-by -case basis in consultation with the U.S. Fish and Wildlife Service. The 100-year floodplains, wetlands, and riparian areas are closed to any new permanent facilities (e.g., storage tanks, structure pits, etc.). Proposals for linear crossings in these areas will be considered on a case-by-case basis	pgs 19 and 22 of RMP	Year-round	Within occupied Ute ladies'-tresses orchid habitat	Y		
	BLM Rock Springs	Western Yellow-billed Cuckoo	All surface disturbance, permanent facilities, etc., shall remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site specific analysis and the Area Manager approves in writing, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures would be determined case by case and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	pg 161 (App 5-1) of the RMP	Year-round	500 feet of wetlands and perennial streams	Y		
	BLM Rock Springs	Western Yellow-billed Cuckoo	All surface disturbance, permanent facilities, etc., shall remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site specific analysis and the Area Manager approves in writing, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures would be determined case by case and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	pg 161 (App 5-1) of the RMP	Year-round	Within 100-year flood plains	Y		
	BLM Rock Springs	Western Yellow-billed Cuckoo	All surface disturbance, permanent facilities, etc., shall remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site specific analysis and the Area Manager approves in writing, that there is no practicable alternative to the proposed action. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures would be determined case by case and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	pg 161 (App 5-1) of the RMP	Year-round	Within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages	Y		
	BLM Rock Springs	White-tailed Prairie Dog	9. New access roads should avoid traversing prairie dog colonies or bisecting two closely adjacent colonies, to avoid surface disturbing impacts and improving access for recreational shooters. 10. New prairie dog towns should be allowed to become established on public lands. 11. No further oil and gas exploration and development should be allowed into occupied prairie dog colonies, or the BLM should apply a Condition of Approval (COA) on all Applications for Permit to Drill (APDs) within areas containing known populations of WTPDs that protects rearing of young from April 1 through July 15. When possible, a No Surface Occupancy stipulation should be applied to all occupied and recovering prairie dog habitat for well pads or ancillary facilities (e.g. compressor stations, processing plants, etc.) within 1/8th mile of WTPD habitat. When possible, no seismic activity should be allowed in occupied or recovering prairie dog habitat. Note: Avoid prairie dog towns/complexes.	Statewide Programmatic White-Tailed Prairie Dog (Cynomys leucurus) Biological Evaluation. 2007. p4-2	Year-round	Within prairie dog towns	Y		
Y	State of WY	Antelope Winter Range	No development on crucial winter ranges from 15 November through 30 April.	pgs 25, 27, and 29 of Development Recommendations	Nov 15 to April 30	Within crucial winter range			
Y	State of WY	Bald Eagle Nesting	Bald Eagle Guidelines. Refer to existing state and regional bald eagle management guidelines in additional to federal management guidelines to prevent disturbance to bald eagle nest sites. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Bald Eagle, February 15 – August 15, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	Feb 15 to August 15	0.5 mile of occupied bald eagle nests	Y		
Y	State of WY	Big Game Migration Corridor	– Migration Bottlenecks. Within narrow migration corridors or "bottlenecks" of less than 0.5 mi width (Sawyer et al. 2005, 2006, 2008), the management prescription for oil and gas development should be "no surface occupancy" (NSO). – Migration Corridors. Within migration corridors that exceed 0.5 mi width, the recommended management prescription is to maintain options for animal movement along the corridor and avoid further constricting the corridor such that a bottleneck is created. Well field developments should not exceed 4 well pad locations or 60 acres of disturbance per square mile. Fences, expansive field developments, and other potential impediments to migration should not be constructed.	pg 39 of Development Recommendations	Year-round	Within big game migration corridors			
N	State of WY	Bighorn Sheep Lambing	No disturbance (No Surface Occupancy) within crucial winter ranges or lambing areas	pgs 22 and 39 of Development Recommendations	Year-round	Within crucial lambing areas			
Y	State of WY	Bighorn Sheep Winter Range	No disturbance (No Surface Occupancy) within crucial winter ranges or lambing areas	pgs 22 and 39 of Development Recommendations	Year-round	Within crucial winter range			
N	State of WY	Columbian Sharp-tailed Grouse Breeding Grounds	No surface occupancy within 0.4 miles of any known Columbian sharp-tailed grouse lek.	pg 37 of Development Recommendations	Year-round	0.4 miles of known Columbian sharp-tailed grouse lek	Y		

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N	State of WY	Columbian Sharp-tailed Grouse Breeding Grounds	Avoid oil and gas operations within 1.25 miles of any known Columbian sharp-tailed grouse lek, and within mapped Columbian sharp-tailed grouse breeding, summer, and winter habitat outside the 1.25 mile buffer. Select sites for development that will not disturb suitable nest cover or brood-rearing habitats within 1.25 miles of an active lek, or within identified nesting and brood-rearing habitats outside the 1.25 mile perimeter. Where oil and gas activities must occur within 1.25 miles of Columbian sharp-tailed grouse leks or within other mapped Columbian sharp-tailed grouse breeding or summer habitat, conduct these activities outside the period between March 15 and July 30.	pg 37 of Development Recommendations	March 15 to July 30	1.25 miles of known Columbian sharp-tailed grouse lek	Y		
	State of WY	Columbian Sharp-tailed Grouse Breeding Grounds	Avoid oil and gas operations within 1.25 miles of any known Columbian sharp-tailed grouse lek, and within mapped Columbian sharp-tailed grouse breeding, summer, and winter habitat outside the 1.25 mile buffer. Select sites for development that will not disturb suitable nest cover or brood-rearing habitats within 1.25 miles of an active lek, or within identified nesting and brood-rearing habitats outside the 1.25 mile perimeter. Where oil and gas activities must occur within 1.25 miles of Columbian sharp-tailed grouse leks or within other mapped Columbian sharp-tailed grouse breeding or summer habitat, conduct these activities outside the period between March 15 and July 30.	pg 37 of Development Recommendations	March 15 to July 30	Within mapped Columbian sharp-tailed grouse breeding, summer, and winter habitat outside the 1.25 mile buffer			
	State of WY	Columbian Sharp-tailed Grouse Winter Range	Where oil and gas activities must occur within mapped Columbian sharp-tailed grouse winter habitat, conduct these activities outside the period between November 15 and March 14.	pg 37 of Development Recommendations	Nov 15 to March 14	Within mapped Columbian sharp-tailed grouse winter habitat			
Y	State of WY	Elk Calving	Attempt to get parturition area seasonal restriction dates confirmed with WGFD. Page 38 states the timing restrictions for mule deer apply, but mule deer have no specified parturition dates. The dates given here are not specified in the Wyoming Development Recommendations.	pgs 25, 27, and 38 of Development Recommendations	May 1 to June 15	Within elk calving areas			
	State of WY	Elk Winter Range	No development on crucial winter ranges from 15 November through 30 April.	pgs 25, 27, and 38 of Development Recommendations	Nov 15 to April 30	Within crucial winter range			
	State of WY	Ferruginous Hawk	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Ferruginous Hawk, March 1 – July 31, 1 mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	March 1 to July 31	1 mile of occupied ferruginous hawk nests	Y		
Y	State of WY	Fish	Species of Greatest Conservation Need (SGCN): Consult WGFD to assess levels of impact and appropriate mitigation, which will be site-specific and species-specific.	pg 23 of Development Recommendations	Not specified	Within SGCN fish-bearing streams			
	State of WY	Fish	Staging, refueling, and storage areas should not be located in riparian zones or on flood plains. Keep all chemicals, solvents and fuels at least 500 feet away from streams and riparian areas.	pg 105 of Development Recommendations	Year-round	500 ft of streams and riparian areas			
	State of WY	Fish	No surface occupancy within riparian corridors and a 500-foot buffer from the transition between riparian and upland habitat. No surface occupancy within a wetland and a 500-foot buffer from the wetland margin. No drilling activity or disturbance should be permitted within 500 feet of a riparian area, wetland or stream channel. Apply a standard NSO stipulation to all riparian zones and a 500-ft corridor extending from the outermost limit of the riparian habitat.	pgs 23, 41, 46, and 104 of Development Recommendations	Year-round	500 ft of riparian area, wetland, or stream channel			
	State of WY	Golden Eagle	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Golden Eagle, January 15 – July 31, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	Jan 15 to July 31	0.5 mile of golden eagle nests	Y		
	State of WY	Greater Sage-grouse Breeding Grounds	Sage-grouse Non-Core Areas: No surface occupancy (NSO) within 0.25 mile of the perimeter of each lek. Thresholds and mitigation apply to all development within 2 miles of a lek, and within identified nesting/brood-rearing habitats > 2 miles from a lek. In addition, seasonal use restrictions should apply to leks at all impact thresholds. No Surface Occupancy. Avoid surface disturbance or occupancy within 0.25 mi of the perimeter of occupied sage-grouse leks (Walker 2008). An occupied lek is a lek that has been active (attendance documented) at least 1 breeding season within the most recent 10-year period. Locate other roads used to provide facility site access and maintenance > 0.25 miles from the perimeter of occupied sage-grouse leks (>0.6 miles in sage-grouse core habitat areas). Within non-core areas, no surface occupancy (NSO) should be allowed within 0.25 miles of the perimeter of occupied leks (Walker 2008). An occupied lek is a lek that has been active (attendance documented) at least 1 breeding season within the most recent 10-year period. This requirement should be applied as a "No Surface Occupancy" (NSO) stipulation.	pgs 21, 33, 35, and 108 of Development Recommendations	Year-round	0.25 mile of occupied leks in greater sage-grouse Non-Core Areas	Y		
	State of WY	Greater Sage-grouse Breeding Grounds	To avoid disrupting auditory displays and nesting, from 15 March through 15 May anthropogenic sources of continuous or frequently intermittent noise should not exceed 10 dBA above natural, ambient noise measured at the perimeter of any occupied sage-grouse lek (Inglefinger 2001; Nicholoff 2003). In addition, between 1 hour before sunrise and 2 hours after sunrise, anthropogenic sources of continuous or frequently intermittent noise should not be detectable at the perimeter of an occupied lek. To the extent practicable, only natural, ambient levels of noise are permissible.	pg 109 of Development Recommendations	March 15 to May 15	At the perimeter of occupied sage-grouse leks	Y		
	State of WY	Greater Sage-grouse Breeding Grounds	Limit human and vehicular activity within 0.6 miles of the perimeter of all occupied sage-grouse leks from 6:00 pm – 8:00 am during the breeding season (15 March through 15 May).	pg 108 of Development Recommendations	March 15 to May 15	0.6 mile of occupied greater sage-grouse leks	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	State of WY	Greater Sage-grouse Breeding Grounds	Sage-grouse Non-Core Areas: No surface occupancy (NSO) within 0.25 mile of the perimeter of each lek. Thresholds and mitigation apply to all development within 2 miles of a lek, and within identified nesting/brood-rearing habitats > 2 miles from a lek. In addition, seasonal use restrictions should apply to leks at all impact thresholds. Surface disturbing activities and/or disruptive activities should be prohibited or restricted from 15 March-30 June within suitable nesting and early broodrearing habitat within 2 miles of the perimeter of an occupied lek and in mapped nesting and early brood-rearing habitat regardless of distance from the lek.	pgs 21 and 109 of Development Recommendations	March 15 to June 30	Within suitable greater sage-grouse nesting/early brood-rearing habitat located within 2 miles of occupied leks	Y		
	State of WY	Greater Sage-grouse Breeding Grounds	Sage-grouse Non-Core Areas: No surface occupancy (NSO) within 0.25 mile of the perimeter of each lek. Thresholds and mitigation apply to all development within 2 miles of a lek, and within identified nesting/brood-rearing habitats > 2 miles from a lek. In addition, seasonal use restrictions should apply to leks at all impact thresholds. Surface disturbing activities and/or disruptive activities should be prohibited or restricted from 15 March-30 June within suitable nesting and early broodrearing habitat within 2 miles of the perimeter of an occupied lek and in mapped nesting and early brood-rearing habitat regardless of distance from the lek.	pgs 21 and 109 of Development Recommendations	March 15 to June 30	Within mapped greater sage-grouse nesting/brood rearing habitat regardless of distance from lek			
	State of WY	Greater Sage-grouse Breeding Grounds	Sage-grouse Core Areas: No surface occupancy (NSO) within 0.6 mi of the perimeter of occupied sage-grouse leks. Allowance for somewhat higher well pad densities and surface disturbance may be considered on a case-by-case basis when the impact can be controlled through site selection, clustered configurations, and other design considerations. ...establishing a 0.6-mi. NSO around each occupied lek. Locate other roads used to provide facility site access and maintenance > 0.25 miles from the perimeter of occupied sage-grouse leks (>0.6 miles in sage-grouse core habitat areas). Within core areas, no surface occupancy (NSO) should be allowed within 0.6 miles of the perimeter of occupied leks (Draft Wyoming BLM Sage-grouse Policy IM. 2008; Carr 1967, Wallestad and Schladweiler 1974, Rothenmaier 1979, Emmons 1980, and Schoenberg 1982 as analyzed by Colorado Greater Sage-grouse Conservation Plan Steering Committee 2008; Walker 2008)	pgs 19, 31, and 108 of Development Recommendations	Year-round	0.6 mile of occupied leks in greater sage grouse Core Areas	Y		
	State of WY	Greater Sage-grouse Winter Range	Sage-grouse Winter Concentration Areas: To the extent practicable, avoid locating wells, roads, or other facilities within identified winter concentration areas (USDI/BLM 2004c). Avoid all activities and disturbance from 15 November through 14 March. Impact thresholds, management and mitigation practices are the same as described for non-core areas. Avoid human and equipment activity within winter concentration areas from 15 November through 14 March.	pgs 21 and 108 of Development Recommendations	Nov 15 to March 14	Within identified greater sage-grouse winter concentration areas			
Y	State of WY	Moose Winter Range	No development on crucial winter ranges from 15 November through 30 April.	pgs 25, 27 and 39 of Development Recommendations	Nov 15 to April 30	Within crucial winter range			
Y	State of WY	Moose Winter Range	Moose Crucial Winter Ranges: No surface occupancy within riparian corridors or a 500-foot buffer.	pgs 22 and 39 of Development Recommendations	Year-round	500 feet ofstreams or riparian corridors within crucial winter range			
	State of WY	Mountain Quail	No surface occupancy within riparian corridors and a 500-foot buffer from the transition between riparian and upland habitat. No surface occupancy within a wetland and a 500-foot buffer from the wetland margin. No drilling activity or disturbance should be permitted within 500 feet of a riparian area, wetland or stream channel. Apply a standard NSO stipulation to all riparian zones and a 500-ft corridor extending from the outermost limit of the riparian habitat.	pgs 23, 41, 46, and 104 of Development Recommendations	Year-round	500 feet of riparian area, wetland, or stream channel			
Y	State of WY	Mule Deer Winter Range	No development on crucial winter ranges from 15 November through 30 April.	pgs 25 and 27 of Development Recommendations	Nov 15 to April 30	Within crucial winter range			
	State of WY	Northern Goshawk	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Northern Goshawk, April 1 – August 15, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	April 1 to August 15	0.5 mile of occupied northern goshawk nests	Y		
	State of WY	Other Birds	Songbird Breeding and Migration Habitat (SGCN): – Seasonal Noise Limitation. From 1 April through 30 June, reduce noise levels to 49 dBA or less within breeding habitat of songbirds to minimize the effects of continuous noise on species that rely on aural cues for successful breeding (Inglefinger 2001).	pg 40 of Development Recommendations	April 1 to June 30	Within breeding habitat of songbirds	Y		
	State of WY	Other Raptors	Raptor Nesting Habitat (SGCN): – Seasonal Noise Limitation. Reduce noise levels to 49 dBA or less at raptor nest sites to minimize the effects of continuous noise on raptors that are sensitive to human disturbance during the breeding season.	pg 40 of Development Recommendations	Raptor breeding season (varies by species)	At active raptor nest sites	Y		

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	State of WY	Other Raptors	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Prairie Falcon, March 1 – August 15, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	March 1 to August 15	0.5 mile of occupied prairie falcon nests	Y		
	State of WY	Other Raptors	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Merlin, April 1 – August 15, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	April 1 to August 15	0.5 mile of occupied merlin nests	Y		
	State of WY	Peregrine Falcon	Seasonal Use Limitation. Apply buffers and timing restrictions to reduce the impacts of construction, operations, noise, and human presence on raptor nest sites. Criteria vary slightly for different species. Consult state or federal wildlife agencies regarding appropriate buffer sizes and timing. WGFD DISTURBANCE-FREE DATES AND BUFFERS FOR RAPTORS Peregrine Falcon, March 15 – August 15, ½ mile Note: Disturbance-free dates include territory establishment through fledging. Note: Additional considerations include line of sight, visibility, type of disturbance activity, location of disturbance above or below the occupied nest, and specific situations.	pgs 41 and 48 of Development Recommendations	March 15 to August 15	0.5 mile of occupied peregrine falcon nests	Y		
	State of WY	Preble's Meadow Jumping Mouse	No surface occupancy within riparian corridors and a 500-foot buffer from the transition between riparian and upland habitat. No surface occupancy within a wetland and a 500-foot buffer from the wetland margin. No drilling activity or disturbance should be permitted within 500 feet of a riparian area, wetland or stream channel. Apply a standard NSO stipulation to all riparian zones and a 500-ft corridor extending from the outermost limit of the riparian habitat.	pgs 23, 41, 46, and 104 of Development Recommendations	Year-round	500 feet of riparian area, wetland, or stream channel	Y		
	State of WY	Pygmy Rabbit	Species of Greatest Conservation Need (SGCN): Consult WGFD to assess levels of impact and appropriate mitigation, which will be site-specific and species-specific.	pg 23 of Development Recommendations	Not specified	Not specified	Y		
	State of WY	Western Yellow-billed Cuckoo	No surface occupancy within riparian corridors and a 500-foot buffer from the transition between riparian and upland habitat. No surface occupancy within a wetland and a 500-foot buffer from the wetland margin. No drilling activity or disturbance should be permitted within 500 feet of a riparian area, wetland or stream channel. Apply a standard NSO stipulation to all riparian zones and a 500-ft corridor extending from the outermost limit of the riparian habitat.	pgs 23, 41, 46, and 104 of Development Recommendations	Year-round	500 feet of riparian area, wetland, or stream channel	Y		
	State of WY	White-tailed Prairie Dog	Species of Greatest Conservation Need (SGCN): Consult WGFD to assess levels of impact and appropriate mitigation, which will be site-specific and species-specific.	pg 23 of Development Recommendations	Not specified	Not specified	Y		
	State of WY	Wyoming Pocket Gopher	Species of Greatest Conservation Need (SGCN): Consult WGFD to assess levels of impact and appropriate mitigation, which will be site-specific and species-specific.	pg 23 of Development Recommendations	Not specified	Not specified	Y		
N	USFS Caribou Targhee	Bald Eagle Nesting	BALD EAGLE HABITAT-- OCCUPIED NESTING ZONES (ZONE I, 0.25 MILE RADIUS OF NEST) AND PRIMARY USE AREAS (ZONE II, 0.5 MILE RADIUS OF NEST) Standard: Prohibit new structures, such as power lines, that have the potential to cause direct mortality to bald eagles.	pg 3-27 of RFP	Year-round	0.5 mile of occupied bald eagle nests	Y		
N	USFS Caribou Targhee	Bald Eagle Nesting	BALD EAGLE HABITAT-- OCCUPIED NESTING ZONES (ZONE I, 0.25 MILE RADIUS OF NEST) AND PRIMARY USE AREAS (ZONE II, 0.5 MILE RADIUS OF NEST) Standard: Vegetation management, such as timber harvest or thinning, which could disturb an active bald eagle nest can occur only between September 1 and January 31 or when documented as unoccupied.	pg 3-27 of RFP	Feb 1 to August 31	0.5 mile of occupied bald eagle nests	Y		
N	USFS Caribou Targhee	Bald Eagle Nesting	BALD EAGLE HABITAT-- OCCUPIED NESTING ZONES (ZONE I, 0.25 MILE RADIUS OF NEST) AND PRIMARY USE AREAS (ZONE II, 0.5 MILE RADIUS OF NEST) Guideline: All human activities should be minimized from February 1 to August 1.	pg 3-28 of RFP	Feb 1 to August 1	0.5 mile of occupied bald eagle nests	Y		

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N	USFS Caribou Targhee	Bald Eagle Nesting	BALD EAGLE HABITAT-- HOME RANGES (ZONE III, 2.5 MILE RADIUS OF NEST) Standard: Follow existing, site-specific management plans (when they exist) for each bald eagle territory, or ZONE III management direction in the Bald Eagle Management Plan for the Greater Yellowstone Area when site-specific management plans do not exist. From Bald Eagle Management Plan: Ideally, the home range should be delineated by monitoring eagle movements during nesting and brood rearing for several years. Lacking such data, the zone should include all potential foraging habitat within a 4 km (2.5 mile) radius of the nest. Areas within the 2.5 mile radius of the nest that do not include potential foraging habitat may be excluded. However, the zone wiIl include a 400 m (1,312 ft) buffer along foraging habitat where the zone has been reduced. Within this zone: 1. Human activity levels should not exceed moderate. (Moderate human activity levels - Low impact (light) activity levels are included, but intensity of such activities are not limited. ...Other activities such as construction, seismic exploration, blasting, and timber harvest, also should be designed to specifically avoid disturbance. Designing projects or land uses to avoid eagle conflicts requires sufficient data to formulate a Site-specific Management plan.) ... 3. Terrestrial habitat alterations should insure important components are maintained (i .e., perch trees and snags, visual screening from existing or anticipated areas of human activity, and potential nesting habitat). Maior habitat alterations should be considered only if Site-specific Management plans are developed and only if the alterations are compatible with management plans. 6. Utility lines should be limited and restricted to locations where the potential for eagle collisions and electrocutions is minimal.	pg 3-28 of RFP, pgs 22, 24-25 of Bald Eagle Mgmnt Plan	Year-round	2.5 miles of bald eagle nests	Y		
N	USFS Caribou Targhee	Bald Eagle Nesting	BALD EAGLE HABITAT-- HOME RANGES (ZONE III, 2.5 MILE RADIUS OF NEST) Standard: Within a 2.5-mile radius of nest, prohibit all use of herbicides and pesticides which cause eggshell thinning as determined by EPA labeling.	pg 3-28 of RFP	Year-round	2.5 miles of bald eagle nests	Y		
	USFS Caribou Targhee	Bald Eagle Wintering	BALD EAGLE HABITAT—WINTER FORAGING AND ROOSTING Guideline: Activities and developments should be designed to minimize conflicts with bald eagle wintering and migration habitat.	pg 3-28 of RFP	Year-round	Within bald eagle wintering and migration habitat			
N	USFS Caribou Targhee	Columbian Sharp-tailed Grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: Current guidelines for sage and sharp-tailed grouse management, such as Connelly et al. (2000), should be used as a basis to develop site-specific recommendations for proposed sagebrush treatments. Guideline: Management activities should consider proximity to active lek locations during site-specific project planning. Those within 10 miles of an active sage grouse lek and 2 miles of active sharp-tailed grouse leks should be considered further for suitability as grouse habitat.	pg 3-32 of RFP	Year-round	2 miles of active Columbian sharp-tailed grouse leks	Y		
	USFS Caribou Targhee	Columbian Sharp-tailed Grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: If management activities would impact courtship, limit physical, mechanical, and audible disturbances in the breeding complex during the breeding season (March to May) within three hours of sunrise and sunset each day.	pg 3-32 of RFP	March 1 to May 31	Within Columbian sharp-tailed grouse breeding complexes			
	USFS Caribou Targhee	Columbian Sharp-tailed Grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: Where management actions will disturb nesting grouse, avoid manipulation or alteration of vegetation during the nesting period (May to June).	pg 3-32 of RFP	May 1 to June 30	Not specified			
	USFS Caribou Targhee	Columbian Sharp-tailed Grouse Winter Range	USFS comment: Follow guidelines in Ulliman et al 1998 for winter habitat. (This is an unpublished IDFG report that we need to obtain. Could not locate a copy of this report online; citations suggest that Pocatello Field Office is who to contact for a copy.)		Not specified	Not specified			
Y (dataset does not distinguish species)	USFS Caribou Targhee	Elk Winter Range	PRESCRIPTION 2.7.1 (d) – ELK AND DEER WINTER RANGE CRITICAL ACCESS Standards: Snow free season: Motorized use allowed only on designated roads and trails Snow Season: Motorized use allowed only on designated trails, some winter range has no designated routes Note: SOME SITE SPECIFIC EXCEPTIONS MAY APPLY, TRAVEL PLAN MAPS SUPERCEDE THIS DIRECTION.	pg 4-43 of RFP	Year-round	Motorized use only on designated roads/trails within elk winter range			
Y (dataset does not distinguish species)	USFS Caribou Targhee	Elk Winter Range	Seasonal closures on construction activity in big game winter range Note: Comment from kickoff meeting		Not specified	Within big game winter range			

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Y	USFS Caribou Targhee	Fish	Aquatic Influence Zones (AIZs) DEFAULT AIZ WIDTHS Fish-bearing Streams: AIZs consist of the stream and whichever of the following parameters is greatest: 1. either side of the stream extending from the edges of the active stream channel to the top of the inner gorge or the outer edges of the riparian vegetation 2. a distance equal to the height of two site-potential trees 3. 300 feet slope distance (600 feet, including both sides of the stream channel) LANDS Guideline: Avoid locating facilities and utility corridors in Aquatic Influence Zones. GENERAL RIPARIAN AREA MANAGEMENT Guidelines: 1. Felled trees should remain on site when needed to meet woody debris objectives and desired AIZ attributes. 2. Use herbicides, pesticides, and other toxicants and chemicals only as needed to maintain desired AIZ attributes. 3. Avoid storage of fuels and other toxicants or refueling within AIZs unless there are no other alternatives. Any refueling sites within an AIZ should have an approved spill containment plan. ROADS AND TRAILS Standard: All new and replaced culverts, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species. Guidelines: 1. Avoid constructing roads within the AIZ unless there is no practical alternative. 2. Culverts (permanent and temporary) should be sized so that the probability of flow exceedance is fifty percent or less during the time the culvert is expected to be in place. Consider bedload and debris when sizing culverts. 3. When feasible, use bridges, arches, and open-bottom culverts in fish-bearing streams. 4. Avoid placing ditch relief culverts where they may discharge onto erodible slopes or directly into streams. 5. Where feasible, install cross-drainage above stream crossings to prevent ditch sediments from entering streams. 6. New or reconstructed roads and trails should cross the AIZ riparian areas as perpendicular as possible. 7. Avoid making channel changes on streams or drainages. 8. Design and install drainage crossings to reduce the chances of turning stream flows down the road prism in case of a blocked or overflowing culvert. 9. Road drainage patterns should avoid disruption of natural hydrologic flow paths.	pgs 4-45, 4-49, 4-50, and 4-51 of RFP	Year-round	Site-specific (at least 300 feet on either side of fish-bearing streams)			
Y	USFS Caribou Targhee	Riparian Species	Aquatic Influence Zones (AIZs) DEFAULT AIZ WIDTHS All Other Permanently Flowing Streams: AIZs consist of the stream and whichever of the following parameters is greatest: 1. either side of the stream extending from the edges of the active stream channel to the top of the inner gorge 2. outer edges of the 100-year flood plain 3. outer edges of riparian vegetation 4. a distance equal to the height of one site-potential tree 5. 150 feet slope distance (300 feet, including both sides of the stream channel) LANDS Guideline: Avoid locating facilities and utility corridors in Aquatic Influence Zones. GENERAL RIPARIAN AREA MANAGEMENT Guidelines: 1. Felled trees should remain on site when needed to meet woody debris objectives and desired AIZ attributes. 2. Use herbicides, pesticides, and other toxicants and chemicals only as needed to maintain desired AIZ attributes. 3. Avoid storage of fuels and other toxicants or refueling within AIZs unless there are no other alternatives. Any refueling sites within an AIZ should have an approved spill containment plan. ROADS AND TRAILS Standard: All new and replaced culverts, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species. Guidelines: 1. Avoid constructing roads within the AIZ unless there is no practical alternative. 2. Culverts (permanent and temporary) should be sized so that the probability of flow exceedance is fifty percent or less during the time the culvert is expected to be in place. Consider bedload and debris when sizing culverts. 3. When feasible, use bridges, arches, and open-bottom culverts in fish-bearing streams. 4. Avoid placing ditch relief culverts where they may discharge onto erodible slopes or directly into streams. 5. Where feasible, install cross-drainage above stream crossings to prevent ditch sediments from entering streams. 6. New or reconstructed roads and trails should cross the AIZ riparian areas as perpendicular as possible. 7. Avoid making channel changes on streams or drainages. 8. Design and install drainage crossings to reduce the chances of turning stream flows down the road prism in case of a blocked or overflowing culvert. 9. Road drainage patterns should avoid disruption of natural hydrologic flow paths.	pgs 4-45, 4-46, 4-49, 4-50, and 4-51 of RFP	Year-round	Site-specific (at least 150 feet on either side of perennial streams)			

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
Y	USFS Caribou Targhee	Riparian Species	Aquatic Influence Zones (AIZs) DEFAULT AIZ WIDTHS Ponds, lakes, reservoirs, and wetlands greater than 1 acre: AIZs consist of the body of water or wetland and whichever of the following parameters is greatest: 1. outer edges of the riparian vegetation 2. extent of the seasonally saturated soil 3. a distance equal to the height of one site-potential tree 4. 150 feet slope distance from the maximum pool elevation of the wetland, pond, or lake LANDS Guideline: Avoid locating facilities and utility corridors in Aquatic Influence Zones. GENERAL RIPARIAN AREA MANAGEMENT Guidelines: 1. Felled trees should remain on site when needed to meet woody debris objectives and desired AIZ attributes. 2. Use herbicides, pesticides, and other toxicants and chemicals only as needed to maintain desired AIZ attributes. 3. Avoid storage of fuels and other toxicants or refueling within AIZs unless there are no other alternatives. Any refueling sites within an AIZ should have an approved spill containment plan. ROADS AND TRAILS Standard: All new and replaced culverts, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species. Guidelines: 1. Avoid constructing roads within the AIZ unless there is no practical alternative. 2. Culverts (permanent and temporary) should be sized so that the probability of flow exceedance is fifty percent or less during the time the culvert is expected to be in place. Consider bedload and debris when sizing culverts. 3. When feasible, use bridges, arches, and open-bottom culverts in fish-bearing streams. 4. Avoid placing ditch relief culverts where they may discharge onto erodible slopes or directly into streams. 5. Where feasible, install cross-drainage above stream crossings to prevent ditch sediments from entering streams. 6. New or reconstructed roads and trails should cross the AIZ riparian areas as perpendicular as possible. 7. Avoid making channel changes on streams or drainages. 8. Design and install drainage crossings to reduce the chances of turning stream flows down the road prism in case of a blocked or overflowing culvert. 9. Road drainage patterns should avoid disruption of natural hydrologic flow paths.	pgs 4-46, 4-49, 4-50, and 4-51 of RFP	Year-round	Site-specific (at least 150 feet slope distance from the maximum pool elevation of wetlands, ponds, or lakes)			
Y	USFS Caribou Targhee	Riparian Species	Aquatic Influence Zones (AIZs) DEFAULT AIZ WIDTHS Seasonally flowing or intermittent streams, wetlands less than 1 acre: This category includes features with high variability in size and site-specific characteristics. Small wetlands can be scattered across the landscape and may not have any direct connectivity with a channel system or permanent body of water. At a minimum, the AIZs must include the intermittent stream channel and whichever of the following parameters is greatest: 1. top of the inner gorge 2. outer edges of the riparian vegetation 3. from the edges of the stream channel, wetland, etc. to a distance equal to the height of one-half site potential tree, or 50 feet slope distance LANDS Guideline: Avoid locating facilities and utility corridors in Aquatic Influence Zones. GENERAL RIPARIAN AREA MANAGEMENT Guidelines: 1. Felled trees should remain on site when needed to meet woody debris objectives and desired AIZ attributes. 2. Use herbicides, pesticides, and other toxicants and chemicals only as needed to maintain desired AIZ attributes. 3. Avoid storage of fuels and other toxicants or refueling within AIZs unless there are no other alternatives. Any refueling sites within an AIZ should have an approved spill containment plan. ROADS AND TRAILS Standard: All new and replaced culverts, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species. Guidelines: 1. Avoid constructing roads within the AIZ unless there is no practical alternative. 2. Culverts (permanent and temporary) should be sized so that the probability of flow exceedance is fifty percent or less during the time the culvert is expected to be in place. Consider bedload and debris when sizing culverts. 3. When feasible, use bridges, arches, and open-bottom culverts in fish-bearing streams. 4. Avoid placing ditch relief culverts where they may discharge onto erodible slopes or directly into streams. 5. Where feasible, install cross-drainage above stream crossings to prevent ditch sediments from entering streams. 6. New or reconstructed roads and trails should cross the AIZ riparian areas as perpendicular as possible. 7. Avoid making channel changes on streams or drainages. 8. Design and install drainage crossings to reduce the chances of turning stream flows down the road prism in case of a blocked or overflowing culvert. 9. Road drainage patterns should avoid disruption of natural hydrologic flow paths.	pgs 4-46, 4-49, 4-50, and 4-51 of RFP	Year-round	Site-specific (at least 50 feet slope distance from the edges of intermittent or ephemeral streams and wetlands less than 1 acre)			
N	USFS Caribou Targhee	Flammulated Owl	SNAG/CAVITY NESTING HABITAT Guideline: Strive not to disturb or destroy existing nests, whether active or inactive. FLAMMULATED OWL HABITAT Guideline: Do not allow timber harvest activities within a 30-acre area around all known flammulated owl nest sites.	pgs 3-27 and 3-31 of RFP	Year-round	30 acres around flammulated owl nests	Y		

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	USFS Caribou Targhee	Gray Wolf	GRAY WOLF HABITAT Standard: Restrict intrusive human disturbances (motorized access, vegetation management, livestock grazing, etc.) within one mile around active den sites and rendezvous sites between April 1 and June 30 when there are five or fewer breeding pairs of wolves in the Yellowstone Nonessential Experimental Population Area (applies to the portion of the Forest east of Interstate 15) or the Central Idaho Nonessential Experimental Population Area (applies to the portion of the Forest west of Interstate 15). After six or more breeding pairs become established in each experimental population area, land use restrictions will not be necessary (USDI, F&W Svc. 1994a and 1994b).	pg 3-29 of RFP	April 1 to June 30	1 mile of active gray wolf den sites and rendezvous sites			
	USFS Caribou Targhee	Greater Sage-grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: If management activities would impact courtship, limit physical, mechanical, and audible disturbances in the breeding complex during the breeding season (March to May) within three hours of sunrise and sunset each day.	pg 3-32 of RFP	March 1 to May 31	Within greater sage-grouse breeding complexes			
	USFS Caribou Targhee	Greater Sage-grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: Where management actions will disturb nesting grouse, avoid manipulation or alteration of vegetation during the nesting period (May to June).	pg 3-32 of RFP	May 1 to June 30	Not specified			
Y	USFS Caribou Targhee	Greater Sage-grouse Breeding Grounds	SAGE GROUSE AND COLUMBIAN SHARP-TAILED GROUSE Guideline: Current guidelines for sage and sharp-tailed grouse management, such as Connelly et al. (2000), should be used as a basis to develop site-specific recommendations for proposed sagebrush treatments. Guideline: Management activities should consider proximity to active lek locations during site-specific project planning. Those within 10 miles of an active sage grouse lek and 2 miles of active sharp-tailed grouse leks should be considered further for suitability as grouse habitat.	pg 3-32 of RFP	Year-round	10 miles of active sage-grouse leks	Y		
Y	USFS Caribou Targhee	Mule Deer Winter Range	PRESCRIPTION 2.7.1 (d) – ELK AND DEER WINTER RANGE CRITICAL ACCESS Standards: Snow free season: Motorized use allowed only on designated roads and trails Snow Season: Motorized use allowed only on designated trails, some winter range has no designated routes Note: SOME SITE SPECIFIC EXCEPTIONS MAY APPLY, TRAVEL PLAN MAPS SUPERCEDE THIS DIRECTION.	pg 4-43 of RFP	Year-round	Motorized use only on designated roads/trails within mule deer winter range			
Y	USFS Caribou Targhee	Mule Deer Winter Range	Seasonal closures on construction activity in big game winter range Note: Comment from kickoff meeting		Not specified	Within big game winter range			
Y	USFS Caribou Targhee	Northern Goshawk	SNAG/CAVITY NESTING HABITAT Guideline: Strive not to disturb or destroy existing nests, whether active or inactive.	pg 3-27 of RFP	Year-round	Not specified	Y		
Y	USFS Caribou Targhee	Northern Goshawk	GOSHAWK HABITAT Standards and Guidelines: Within Nest Area (≥200 acres) and Post-Fledging Family Area (≥400 acres), no management activities April 1 to August 31. Note: This applies only to active nests. There is no restriction for nest areas where current surveys have documented that the nest is unoccupied. Management activities are defined as mechanical treatments and road building.	pg 3-30 of RFP	April 1 to August 31	400 acres around occupied northern goshawk nests	Y		
N	USFS Caribou Targhee	Other Raptors	BOREAL OWL HABITAT Guideline: Within a 3,600-acre area around all known boreal owl nest sites, maintain over 40% of the forested acres in mature and old age classes. (Hayward and Verner, 1994, Hayward, 1997)		Year-round	3600 acres around known boreal owl nests	Y		
N	USFS Caribou Targhee	Other Raptors	GREAT GRAY OWL HABITAT Guideline: Within a 1,600-acre area around all known great gray owl nest sites, maintain over 40% of the forested acres in mature and old age classes. (Hayward and Verner, 1994)		Year-round	1600 acres around known great gray owl nests	Y		
Y	USFS Caribou Targhee	Other Raptors	Active raptors nests would not be removed until after the birds have fledged. Note: USFS comment received during EIS process.		Year-round	At active raptor nest sites	Y		
	USFS Caribou Targhee	Other Raptors	Tree removal restriction. Note: USFS comment received during EIS process.		Sept 1 to June 15	Not specified--entire NF?			
	USFS Caribou Targhee	Other Sensitive Plants	PLANT SPECIES DIVERSITY Standard: Projects and activities shall be managed to avoid adverse impacts to sensitive plant species that would result in a trend toward federal listing or loss of viability. Guideline: Known occurrences or habitat for rare plants on the "Forest Watch" list and rare or unique plant communities on the Forest should be maintained.	pg 3-22 of RFP	Year-round	Known occurrences or habitat for rare plants and rare or unique plant communities			
N	USFS Caribou Targhee	Peregrine Falcon	PEREGRINE FALCON HABITAT Standard: Within 15 miles of all known nest sites, prohibit all use of herbicides and pesticides which cause egg shell thinning as determined by risk assessment (USDA, Forest Service, September 1992).	pg 3-29 of RFP	Year-round	15 miles of known peregrine falcon nest sites	Y		
N	USFS Caribou Targhee	Peregrine Falcon	PEREGRINE FALCON HABITAT Guideline: For proposed projects within two miles of known peregrine falcon nests, minimize such items as: (1) human activities (rock climbing, aircraft, ground and water transportation, high noise levels, and permanent facilities) which could cause disturbance to nesting pairs and young during the nesting period between March 15 and July 31; (2) activities or habitat alterations which could adversely affect prey availability.	pg 3-29 of RFP	March 15 to July 31	2 miles of known peregrine falcon nests	Y		
	USFS Caribou Targhee	Three-toed Woodpecker	SNAG/CAVITY NESTING HABITAT Standard: Snags with existing cavities or nests shall be the priority for retention. Guideline: Strive not to disturb or destroy existing nests, whether active or inactive.	pgs 3-26 and 3-27 of RFP	Year-round	Not specified	Y		
	USFS Caribou Targhee	Wolverine	WOLVERINE Guideline: Restrict intrusive human disturbance within one mile around known active den sites, March 1 to May 15 (Idaho State Conservation Effort 1995).	pg 3-33 of RFP	March 1 to May 15	1 mile of known active wolverine den sites			

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	USFS Medicine Bow	Amphibians	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: Allow no loss or degradation of known or historic habitat for the boreal toad, wood frog, or northern leopard frog. [Medicine Bow NF]	pg 1-44 of RLRMP	Year-round	Within known or historic habitat for boreal toad, northern leopard frog, and wood frog			
N	USFS Medicine Bow	Bald Eagle Nesting	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: For known bald eagle nest sites, ...buffer where surface occupancy is prohibited (within ½ mile of nest), where seasonal disturbance is prohibited (within 1 mile of nest, February 1 to August 15) and where disruption of foraging behavior is prohibited (in suitable foraging habitat, generally within a 2.5 mile radius of nest). Nests that have been occupied within the last 5 years are considered "active" (see Table 1-15). These buffers may be reduced in response to site-specific conditions in consultation with the U.S. Fish and Wildlife Service. [Greater Yellowstone Bald Eagle Working Group; U.S. Fish and Wildlife Service, Cheyenne Field Office]	pgs 1-41, 1-42, and 1-43 of RLRMP	Year-round	0.5 mile of active (used within the last 5 years) bald eagle nests	Y		
N	USFS Medicine Bow	Bald Eagle Nesting	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: For known bald eagle nest sites, ...buffer where surface occupancy is prohibited (within ½ mile of nest), where seasonal disturbance is prohibited (within 1 mile of nest, February 1 to August 15) and where disruption of foraging behavior is prohibited (in suitable foraging habitat, generally within a 2.5 mile radius of nest). Nests that have been occupied within the last 5 years are considered "active" (see Table 1-15). These buffers may be reduced in response to site-specific conditions in consultation with the U.S. Fish and Wildlife Service. [Greater Yellowstone Bald Eagle Working Group; U.S. Fish and Wildlife Service, Cheyenne Field Office]	pgs 1-41, 1-42, and 1-43 of RLRMP	Feb 1 to August15	1 mile of active (used within the last 5 years) bald eagle nests	Y		
N	USFS Medicine Bow	Bald Eagle Nesting	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: For known bald eagle nest sites, ...buffer where surface occupancy is prohibited (within ½ mile of nest), where seasonal disturbance is prohibited (within 1 mile of nest, February 1 to August 15) and where disruption of foraging behavior is prohibited (in suitable foraging habitat, generally within a 2.5 mile radius of nest). Nests that have been occupied within the last 5 years are considered "active" (see Table 1-15). These buffers may be reduced in response to site-specific conditions in consultation with the U.S. Fish and Wildlife Service. [Greater Yellowstone Bald Eagle Working Group; U.S. Fish and Wildlife Service, Cheyenne Field Office]	pg 1-41 of RLRMP	Year-round	2.5 miles of active (used within the last 5 years) bald eagle nests	Y		
	USFS Medicine Bow	Bald Eagle Wintering	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: ...Prohibit activities within 250 yards of the roost between November 15 and March 1. [R2 Desk Guide]	pg 1-42 of RLRMP	Nov 15 to March 1	250 yards of bald eagle winter roost sites			
N	USFS Medicine Bow	Bighorn Sheep Lambing	WILDLIFE Standard: Prohibit new disturbances such as construction, drilling, new recreation facilities, logging, or other concentrated intense activities according to the following table (April 1 to June 30, 1 mile of bighorn sheep lambing areas). Short-term projects designed to improve habitat such as prescribed burning are permitted. Guideline: Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range. BIGHORN SHEEP HABITAT Transportation: Standard: Do not construct new travel routes across lambing grounds.	pgs 1-40 and 1-41 of RLRMP	April 1 to June 30	1 mile of bighorn sheep lambing areas			
N	USFS Medicine Bow	Bighorn Sheep Winter Range	WILDLIFE Guideline: Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range. BIGHORN SHEEP HABITAT Vegetation: Standard: Implement vegetation management practices that maintain or improve bighorn sheep habitat. Timber harvest is not scheduled and does not contribute to the allowable sale quantity. Guideline: Avoid vegetation management activities between November 15 and April 30 unless the treatments are needed to enhance habitat and cannot be completed outside these dates.	pgs 1-41 and 2-68 of RLRMP	Nov 15 to April 30	Within bighorn sheep winter range			
	USFS Medicine Bow	Black-footed Ferret	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: If black-tailed prairie dogs are found on forest land, activities that could have adverse effects will be halted. The area will be surveyed to determine the extent of the colony and to survey for the presence of Mountain Plovers and black-footed ferrets. Mitigation consistent with standards in the Regional Desk Guide will be adopted for the interim and will be applied to activities that may adversely affect the species present. Standards and guidelines will be modified or added to the Forest Plan as needed. [U.S. Fish and Wildlife Service, Cheyenne Field Office; Medicine Bow NF] Activities will be managed to avoid disturbance to sensitive species and species of local concern, which would result in a trend toward Federal listing or loss of population viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components and other pertinent factors. Special attention will be given during breeding, young rearing, and other times which are critical to survival of both flora and fauna. [R2 Desk Guide] Note: Per recent agency direction, all areas in Wyoming are considered block cleared areas; preconstruction surveys will not be required for the Project.	pg 1-43 of RLRMP	Year-round	Within occupied black-footed ferret habitat			
N	USFS Medicine Bow	Blowout Penstemon	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: Activities will be managed to avoid disturbance to sensitive species and species of local concern, which would result in a trend toward Federal listing or loss of population viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components and other pertinent factors. Special attention will be given during breeding, young rearing, and other times which are critical to survival of both flora and fauna. [R2 Desk Guide]	pg 1-43 of RLRMP	Year-round	Within occupied blowout penstemon habitat	Y		
N	USFS Medicine Bow	Canada Lynx	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: New or expanded permanent developments and vegetation management activities and practices must maintain habitat connectivity.	pg 1-43 of RLRMP	Year-round	Within lynx habitats			

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N	USFS Medicine Bow	Columbian Sharp-tailed Grouse Breeding Grounds	WILDLIFE Standard: Prohibit new disturbances such as construction, drilling, new recreation facilities, logging, or other concentrated intense activities according to the following table. Short-term projects designed to improve habitat such as prescribed burning are permitted.	pg 1-40 of RLRMP	March 1 to June 30	1 mile of Columbian sharp-tailed grouse breeding complexes	Y		
N	USFS Medicine Bow	Elk Winter Range	WILDLIFE Guideline: Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range. CRUCIAL DEER AND ELK WINTER RANGE Standard: Restrict intensive management activities such as timber harvest or road construction during the winter and spring periods (November 15-April 30) where conflicts with wintering wildlife are identified. Allow uses and activities only if they do not degrade the characteristics for which the area was designated. DEER AND ELK WINTER RANGE Standard: Restrict management and use activities (new surface disturbing activities prohibited per minerals section) during the winter and spring periods (November 15-April 30) where conflicts with wintering wildlife are identified, except for habitat improvement.	pgs 1-41, 2-49, and 2-65 of RLRMP	Nov 15 to April 30	Within elk winter range			
N	USFS Medicine Bow	Ferruginous Hawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Ferruginous hawk: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: March 1 to July 31	pgs 1-42 and 1-43 of RLRMP	Year-round	0.25 mile of ferruginous hawk nests used within the last 7 years	Y		
N	USFS Medicine Bow	Ferruginous Hawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Ferruginous hawk: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: March 1 to July 31	pgs 1-42 and 1-43 of RLRMP	March 1 to July 31	0.25 mile of ferruginous hawk nests used within the last 7 years	Y		
N	USFS Medicine Bow	Golden Eagle	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Golden eagle: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: February 1 to July 31	pgs 1-42 and 1-43 of RLRMP	Year-round	0.25 mile of active (used within last 7 years) golden eagle nests	Y		

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N	USFS Medicine Bow	Golden Eagle	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Golden eagle: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: February 1 to July 31	pgs 1-42 and 1-43 of RLRMP	Feb 1 to July 31	0.5 mile of active (used within last 7 years) golden eagle nests	Y		
N	USFS Medicine Bow	Greater Sage-grouse Breeding Grounds	WILDLIFE Standard: Prohibit new disturbances such as construction, drilling, new recreation facilities, logging, or other concentrated intense activities according to the following table. Short-term projects designed to improve habitat such as prescribed burning are permitted. Sage grouse breeding complexes: March 1 through June 30, 2 miles	pg 1-40 of RLRMP	March 1 to June 30	2 miles of greater sage-grouse breeding complexes	Y		
	USFS Medicine Bow	Greater Sandhill Crane	WILDLIFE Standard: Prohibit new disturbances such as construction, drilling, new recreation facilities, logging, or other concentrated intense activities according to the following table. Short-term projects designed to improve habitat such as prescribed burning are permitted. Greater sandhill crane breeding complexes: March 1 through June 30, ½ mile	pg 1-40 of RLRMP	March 1 to June 30	0.5 mile of greater sandhill crane breeding complexes			
	USFS Medicine Bow	Mountain Plover	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: If black-tailed prairie dogs are found on forest land, activities that could have adverse effects will be halted. The area will be surveyed to determine the extent of the colony and to survey for the presence of Mountain Plovers and black-footed ferrets. Mitigation consistent with standards in the Regional Desk Guide will be adopted for the interim and will be applied to activities that may adversely affect the species present. Standards and guidelines will be modified or added to the Forest Plan as needed. [U.S. Fish and Wildlife Service, Cheyenne Field Office; Medicine Bow NF] Activities will be managed to avoid disturbance to sensitive species and species of local concern, which would result in a trend toward Federal listing or loss of population viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components and other pertinent factors. Special attention will be given during breeding, young rearing, and other times which are critical to survival of both flora and fauna. [R2 Desk Guide]	pg 1-43 of RLRMP	Not specified	Not specified	Y		
N	USFS Medicine Bow	Mule Deer Winter Range	WILDLIFE Guideline: Apply seasonal restrictions as needed on motorized use of travelways to reduce disturbance in sensitive big game areas, such as birthing areas and winter range. CRUCIAL DEER AND ELK WINTER RANGE Standard: Restrict intensive management activities such as timber harvest or road construction during the winter and spring periods (November 15-April 30) where conflicts with wintering wildlife are identified. Allow uses and activities only if they do not degrade the characteristics for which the area was designated. DEER AND ELK WINTER RANGE Standard: Restrict management and use activities (new surface disturbing activities prohibited per minerals section) during the winter and spring periods (November 15-April 30) where conflicts with wintering wildlife are identified, except for habitat improvement.	pgs 1-41, 2-49, and 2-65 of RLRMP	Nov 15 to April 30	Within mule deer winter range			
	USFS Medicine Bow	Northern Goshawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: ...Within the post fledging area (PFA), prohibit management activities that may degrade goshawk foraging habitat. [Medicine Bow NF]	pg 1-42 of RLRMP	Year-round	Within designated post fledging areas (PFAs)			
Y	USFS Medicine Bow	Northern Goshawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To help reduce disturbance to nesting goshawks, prohibit construction, drilling, timber harvest and fuel treatments, and other intensive management activities within ¼ mile of active northern goshawk nests from April 1 to August 30 unless site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [R2 Desk Guide]	pg 1-42 of RLRMP	April 1 to August 31	0.25 mile of active northern goshawk nests	Y		
N	USFS Medicine Bow	Northern Harrier	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Northern Harrier: Number of years the site is protected after last occupancy: 0 year (ground nester) Buffer for surface occupancy: no buffer Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: April 1 to August 15	pgs 1-42 and 1-43 of RLRMP	April 1 to August 15	0.5 mile of active (for current year) northern harrier nests	Y		

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N	USFS Medicine Bow	Osprey	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Osprey: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: April 1 to August 15	pgs 1-42 and 1-43 of RLRMP	Year-round	0.25 mile of active (used within last 7 years) osprey nests	Y		
N	USFS Medicine Bow	Osprey	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Osprey: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: April 1 to August 15	pgs 1-42 and 1-43 of RLRMP	April 1 to August 15	0.5 mile of active (used within last 7 years) osprey nests	Y		
N	USFS Medicine Bow	Peregrine Falcon	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Peregrine falcon: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: March 1 to August 15	pgs 1-42 and 1-43 of RLRMP	Year-round	0.25 mile of active (used within last 7 years) peregrine falcon nests	Y		
N	USFS Medicine Bow	Peregrine Falcon	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Peregrine falcon: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: March 1 to August 15	pgs 1-42 and 1-43 of RLRMP	March 1 to August 15	0.5 mile of active (used within last 7 years) peregrine falcon nests	Y		
	USFS Medicine Bow	Preble's Meadow Jumping Mouse	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: In suitable habitat within the range of the Preble's meadow jumping mouse, avoid placing new ...trails or roads within the riparian zone. ...[Medicine Bow NF]	pg 1-43 of RLRMP	Year-round	Within suitable habitat within Preble's meadow jumping mouse range	Y		
	USFS Medicine Bow	Raptors	UTILITY CORRIDORS AND ELECTRONIC SITES Guideline: Design and construct power transmission and distribution lines to minimize electrocution hazards for raptors, and provide nest sites where feasible.	pg 2-78 or RLRMP	Year-round	Within the Project area			

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
N	USFS Medicine Bow	Short-eared Owl	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Short-eared owl: Number of years the site is protected after last occupancy: 0 year (ground nester) Buffer for surface occupancy: no buffer Seasonal buffer for human disturbance: 0.25 mile Dates for seasonal disturbance restriction: March 1 to August 1	pgs 1-42 and 1-43 of RLRMP	March 1 to August 1	0.25 mile of active (for current year) short-eared owl nests	Y		
N	USFS Medicine Bow	Swainson's Hawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Swainson's hawk: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: April 1 to August 15	pgs 1-42 and 1-43 of RLRMP	Year-round	0.25 mile of active (used within last 7 years) Swainson's hawk nests	Y		
N	USFS Medicine Bow	Swainson's Hawk	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: To protect nest sites for open-country raptors that are (1) on the Sensitive Species list or (2) sensitive to human disturbance near the nest and also use a limited number of nest sites year after year (listed in the following table): Prohibit construction of new facilities (surface occupancy) yearlong and prohibit activities that create human disturbance (like construction, logging, reclamation, or oil and gas drilling) within the distances and during dates shown in Table 1-15. Sensitive raptors that are not limited by nest sites need protection only from disturbance around active nests. Nest sites of raptors need protection for varying intervals after the last occupancy (depending on availability of nest sites). See table below. Sites may be classified as inactive following natural destruction of the site. Buffers may be reduced if site-specific conditions are such that a lesser distance can be shown to provide the same degree of protection. [U.S. Fish and Wildlife Service, Utah Field Office Guidelines for Raptor Protection, Medicine Bow NF] Swainson's hawk: Number of years the site is protected after last occupancy: 7 Buffer for surface occupancy: 0.25 mile Seasonal buffer for human disturbance: 0.5 mile Dates for seasonal disturbance restriction: April 1 to August 15	pgs 1-42 and 1-43 of RLRMP	April 1 to August 15	0.5 mile of active (used within last 7 years) Swainson's hawk nests	Y		
	USFS Medicine Bow	Ute Ladies'-tresses Orchid	THREATENED, ENDANGERED, AND SENSITIVE SPECIES Standard: Activities will be managed to avoid disturbance to sensitive species and species of local concern, which would result in a trend toward Federal listing or loss of population viability. The protection will vary depending on the species, potential for disturbance, topography, location of important habitat components and other pertinent factors. Special attention will be given during breeding, young rearing, and other times which are critical to survival of both flora and fauna. [R2 Desk Guide]	pg 1-43 of RLRMP	Year-round	Within occupied Ute ladies'-tresses orchid habitat	Y		
Y	Project-wide	Fish	Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.	EPM OM-16	Sept 2 to June 30	Within streams with sensitive fish species			
Y	Project-wide	Riparian Species	Woody vegetation management within 50 feet of streams will be conducted by hand crews.	EPM OM-17	Year-round	50 feet of streams			
Y	Federal land and all land in WY	Fish and Riparian Species	Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.	EPM OM-20	Year-round	100 feet of sensitive aquatic resources			
	Federal land and all land in WY	Blowout Penstemon	Blowout Penstemon – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.	EPM TESPL-1	Year-round	Within occupied blowout penstemon habitat	Y		
	Federal land and all land in WY	Colorado Butterfly Plant	Colorado Butterfly Plant – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations. Note that this species is not expected to occur in Segment D.	EPM TESPL-2	Year-round	Within occupied Colorado butterfly plant habitat	Y		

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	Federal land and all land in WY	Special Status or Globally Rare Plant Species	Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	EPM TESPL-3	Year-round	Within occupied special status or globally rare plant species habitat	Y		
N	Project-wide	Slickspot Peppergrass	Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots. Note that this species is not expected to occur in Segment D.	EPM TESPL-4	Year-round	50 feet of slickspot peppergrass plants, slickspots, and previously known occupied slickspot peppergrass areas	Y		
	Federal land and all land in WY	Sand Dune and Cushion Plant Communities	Sand dune and cushion plant communities will be avoided, where feasible.	EPM TESPL-5	Year-round	Within sand dune and cushion plant communities			
N	Federal land, all land in WY, and state land in ID	Goose Creek Milkvetch	Goose Creek Milkvetch – Surface disturbance will be allowed in suitable habitat for Goose Creek milkvetch where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impacts to populations. Note that this species is not expected to occur in Segment D.	EPM TESPL-6	Year-round	Within occupied goose creek milkvetch habitat	Y		
	Project-wide	Ute Ladies'-tresses Orchid	Ute Ladies'-tresses – Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	EPM TESPL-7	Year-round	Within occupied Ute ladies'-tresses orchid habitat	Y		

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Y	Federal land and all land in WY where other standards, guidelines, stipulations, or avoidance buffers have not been specified	Fish and Riparian Species	Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed. The four categories of stream or water body and the standard INFISH buffer widths for each are: Category 1 - Fish-bearing streams: Interim Riparian Habitat Conservation Areas (RHCAs) consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest. Category 2 - Permanently flowing non-fish-bearing streams: Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet, including both sides of the stream channel), whichever is greatest. Category 3 - Ponds, lakes, reservoirs, and wetlands greater than 1 acre: Interim RHCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest. Category 4 - Seasonally flowing or Intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas: This category includes features with high variability in size and site-specific characteristics. At a minimum the interim RHCAs must include: a. the extent of landslides and landslide-prone areas b. the intermittent stream channel and the area to the top of the inner gorge c. the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation d. for Priority Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest e. for watersheds not identified as Priority Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one-half site potential tree, or 50 feet slope distance, whichever is greatest Minerals Management (MM)-2: Locate structures, support facilities, and roads outside Riparian Habitat Conservation Areas. Where no alternative to siting facilities in Riparian Habitat Conservation Areas exists, locate and construct the facilities in ways that avoid impacts to Riparian Habitat Conservation Areas and streams and adverse effects on inland native fish. Where no alternative to road construction exists, keep roads to the minimum necessary for the approved mineral activity. Close, obliterate and revegetate roads no longer required for mineral or land management activities. MM-4: ..prohibit surface occupancy...unless there are no other options for location and Riparian Management Objectives can be attained and adverse effects to inland native fish can be avoided. General Riparian Area Management (RA)-2: Trees may be felled in Riparian Habitat Conservation Areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives. RA-3: Apply herbicides, pesticides, and other toxicants, and other chemicals in a manner that does not retard or prevent attainment of Riparian Management Objectives and avoids adverse effects on inland native fish. RA-4: Prohibit storage of fuels and other toxicants within Riparian Habitat Conservation Areas. Prohibit refueling within Riparian Habitat Conservation Areas unless there are no other alternatives. Refueling sites within a Riparian Habitat Conservation Area must be approved by the Forest Service or Bureau of land Management and have an approved spill containment plan.	EPM WET-1 and INFISH pgs A-5, A-6, A-10, and A-12	Year-round	Site-specific			
	Project-wide	Fish	When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.	EPM FISH-2	Year-round	Within TES fish-bearing streams			
Y	Project-wide	Birds	Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Appendix H,Table 4-1. Additional locations may be identified by the Agencies or the Company. The flight diverters will be installed as directed in the Company's approved Avian Protection Plans and in conformance with the MBTA and Eagle Acts as recommended in the current APLIC collision manual.	EPM WILD-7	Year-round	Where the Project crosses rivers at the locations identified in Table 4-1			
Y	Project-wide	Migratory Birds	To the extent feasible, all vegetation clearing will be conducted to avoid the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either pre-construction surveys or construction activities, the nest will be identified to species, inconspicuously marked, and vegetation left in place until any young have fledged.	EPM WILD-9	April 15 to July 31	Project-wide	Y		
Y	Federal land and all land in WY	Sensitive Wildlife	Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.	EPM WILD-11	Year-round	0.25 mile of known sensitive wildlife resources			
Y	Federal land and all land in WY	Greater Sage-grouse Breeding Grounds	Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.	EPM TESWL-6	March 1 to July 15	4 miles of occupied or undetermined greater sage-grouse leks in areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks	Y		
Y	Federal land and all land in WY	Columbian Sharp-tailed Grouse Breeding Grounds	Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.	EPM TESWL-6	March 15 to July 15	1.2 miles of occupied or undetermined sharp-tailed grouse leks in areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks	Y		

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	Federal land and all land in WY	Western Yellow-billed cuckoo	Yellow-billed cuckoo - A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.	PEM TESWL-7	Until young have fledged or nest is abandoned	Within occupied yellow-billed cuckoo habitat located within 1 mile of the centerline	Y		
Y	Federal land and all land in WY	Greater Sage-grouse Breeding Grounds	Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.	EPM TESWL-8	Year-round	0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks within Core Areas in WY	Y		
Y	Federal land and all land in WY	Greater Sage-grouse Breeding Grounds	Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.	EPM TESWL-8	Year-round	0.25 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks within Non-Core Areas in WY	Y		
Y	Federal land and all land in WY	Greater Sage-grouse Breeding Grounds	Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions will allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).	EPM TESWL-9	March 1 to July 15	4 miles of occupied or undetermined greater sage-grouse leks	Y		
	Federal land and all land in WY	Greater Sage-grouse Winter Range	Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.	EPM TESWL-10	Nov 1 to March 15	Within designated sage-grouse winter concentration areas			
	Kemmerer RMP lands	Greater Sage-grouse obligate habitats	Sage-Grouse – No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer RMP.	EPM TESWL-11	Year-round	Within occupied greater sage-grouse obligate habitat	Y (leks)		
Y	Federal land only	Fish, Wetland, and Riparian Species	For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat. Note that this is an agency imposed measure.	EPM TESWL-14	Year-round	Within 100-year floodplains			
Y	Federal land only	Fish, Wetland, and Riparian Species	For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat. Note that this is an agency imposed measure.	EPM TESWL-14	Year-round	500 feet of perennial waters, springs, wells, and wetlands			
Y	Federal land only	Fish, Wetland, and Riparian Species	For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment would be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat. Note that this is an agency imposed measure.	EPM TESWL-14	Year-round	100 feet of the inner gorge of ephemeral channels			
Y	Federal land only within lands managed by the BLM Rawlin's Field Office	Black- and White-tailed Prairie Dog	Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins Field Office. Note that this is an agency imposed measure.	EPM TESWL-15	Year-round	1 mile of prairie dog towns within the Rawlin's Field Office	Y		
Y	Project-wide	Fish, Wetland, and Riparian Species	Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.	EPM WQA-21	Year-round	500 feet of streams			
	Private land in Idaho Segment 4	Bald Eagle	The distance given is the closest distance that activities should be conducted to the nest. Landscape buffers are recommended. (Category A - Construction of roads, trails, canals, power lines, and other linear utilities.) Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the breeding season within 660 feet of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current breeding season but not used to raise young, after eggs laid in another nest within the territory have hatched. (Category C - Timber Operations and Forestry Practices)	USFWS National Bald Eagle Guidelines	Jan 1 to August 31	660 feet of bald eagle nests	Y		
	Private land in Idaho Segment 4	Bald Eagle	Avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests, unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area. The distance given is the closest distance that activities should be conducted to the nest. (Category H - Blasting and other loud, intermittent noises)	USFWS National Bald Eagle Guidelines	Jan 1 to August 31	0.5 miles of bald eagle nests	Y		

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	Private land in Idaho Segment 4	Bald Eagle	Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time. (Category C - Timber Operations and Forestry Practices)	USFWS National Bald Eagle Guidelines	Year-round	330 feet of bald eagle nests	Y		
	Private land in Idaho Segment 4	Bald Eagle	Except for authorized biologists trained in survey techniques, avoid operating aircraft within 1,000 feet of the nest during the breeding season, except where eagles have demonstrated tolerance for such activity. (Category G - Helicopters and fixed-wing aircraft)	USFWS National Bald Eagle Guidelines	Jan 1 to August 31	1,000 feet of bald eagle nests	Y		
	Private land in Idaho Segment 4	Bald Eagle	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Jan 1 to August 31	1 mile of bald eagle nests	Y		
	Private land in Idaho Segment 4	Bald Eagle	Winter Roosting Spatial buffer zones would be applied for activities occurring proximal to active bald eagle winter roost areas from November through March, or when identified as active by surveys conducted during this period. We would maintain a 0.5-mile spatial buffer, which is equal to one-half of the recommended buffers for bald eagle nests (1-mile) unless site-specific topography or vegetation allow for smaller buffers. Appropriate Service, state agency, and/or land management agency biologists should be consulted prior to adjusting buffers for bald eagle winter roost areas. Daily activities which must occur within recommended spatial buffers at bald eagle winter roost sites should be scheduled after 0900 hours, after which most eagles have vacated their roost. Likewise, daily activities should terminate at least one hour prior to official sunset to allow birds an opportunity to return to the roost site undisturbed.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 22)	Nov 1 to March 31	0.5 mile of bald eagle winter roosts			
	Private land in Idaho Segment 4	Golden Eagle	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Jan 1 to August 31	0.5 mile of golden eagle nests	Y		
	Private land in Idaho Segment 4	Northern Goshawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 15	0.5 mile of northern goshawk nests	Y		
	Private land in Idaho Segment 4	Northern Harrier	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to August 15	0.5 mile of northern harrier nests	Y		
	Private land in Idaho Segment 4	Cooper's Hawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 15 to August 31	0.5 mile of Cooper's hawk nests	Y		
	Private land in Idaho Segment 4	Ferruginous Hawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 1	0.5 mile of ferruginous hawk nests	Y		
	Private land in Idaho Segment 4	Red-tailed Hawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 15 to August 15	0.5 mile of red-tailed hawk nests	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	Private land in Idaho Segment 4	Sharp-shinned hawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 15 to August 31	0.5 mile of sharp-shinned hawk nests	Y		
	Private land in Idaho Segment 4	Swainson's Hawk	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 31	0.5 mile of Swainson's hawk nests	Y		
	Private land in Idaho Segment 4	Turkey vulture	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	May 1 to August 15	0.5 mile of turkey vulture nests	Y		
	Private land in Idaho Segment 4	Peregrine Falcon	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Feb 1 to August 31	1.0 mile of peregrine falcon nests	Y		
	Private land in Idaho Segment 4	Prairie Falcon	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to August 31	0.25 mile of prairie falcon nests	Y		
	Private land in Idaho Segment 4	Merlin	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to August 31	0.5 mile of merlin nests	Y		
	Private land in Idaho Segment 4	Osprey	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to August 31	0.5 mile of osprey nests	Y		
	Private land in Idaho Segment 4	Boreal Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Feb 1 to July 31	0.25 mile of boreal owl nests	Y		
	Private land in Idaho Segment 4	Burrowing Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 31	0.25 mile of burrowing owl nests	Y		
	Private land in Idaho Segment 4	Flammulated Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to Sept 30	0.25 mile of flammulated owl nests	Y		

Existing Mapped Data Within or Near Disturbance Area?	Jurisdiction	Resource	Restriction Language	Reference	Temporal Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Spatial Construction Restriction (Presence/Absence Surveys Required to Support Exception Requests)	Rocky Mountain Power-Planned Preconstruction Surveys (per NEPA Process)?	Map Sheet Reference (Pending completion of Volume II-2 maps)	Data source (Pending completion of Volume II-2 maps)
	Private land in Idaho Segment 4	Great Horned Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Dec 1 to Sept 30	0.25 mile of great horned owl nests	Y		
	Private land in Idaho Segment 4	Long-eared Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	Feb 1 to August 31	0.25 mile of long-eared owl nests	Y		
	Private land in Idaho Segment 4	Northern Saw-whet Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 31	0.25 mile of northern saw-whet owl nests	Y		
	Private land in Idaho Segment 4	Short-eared Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 1	0.25 mile of short-eared owl nests	Y		
	Private land in Idaho Segment 4	Northern Pygmy Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	April 1 to August 15	0.25 mile of northern pygmy owl nests	Y		
	Private land in Idaho Segment 4	Western Screech Owl	No temporary or permanent surface occupancy occur within species-specific spatial and seasonal buffer zones. Aircraft flight paths should also respect recommended spatial and seasonal buffer zones. Buffer zones are defined as seasonal or spatial areas of inactivity in association with individual nests or nesting territories. Spatial buffers are defined as radii from known occupied and unoccupied nest sites. Seasonal buffers are restrictions on the times when human activities should be allowed to occur within the spatial buffers.	USFWS Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (pg 20)	March 1 to August 15	0.25 mile of western screech owl nests	Y		

APPENDIX I
FRAMEWORK STREAM, WETLAND, WELL, AND SPRING PROTECTION PLAN

Appendix I

Framework Stream, Wetland, Well, and Spring Protection Plan

Gateway West Transmission Line Project

Prepared by:

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, show the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Stream, Wetland, Well, and Spring Protection Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to minimize construction, operations and maintenance-related impacts to stream, wetland, well, and spring resources are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Stream, Wetland, Well, and Spring Protection Plan, which will include the development and mapping of site-specific wetland and stream crossing plans. The Construction Contractor will be responsible for identifying and mapping wells within 600 feet of the Project and wells and springs within areas that may be impacted by blasting.

1.1 Purpose

The purpose of this Plan is to assist the BLM, USFS, other federal and state agencies, and the Companies in meeting their obligations to protect streams, wetlands, wells, and springs from potential impacts during Project construction, operation, and maintenance activities. The objective of this Plan is to present a guide for determining the appropriate site-specific measures to be implemented during construction activities. The goal of this Plan is to provide general measures that result in the following:

- Control of Project-related erosion and sedimentation into streams, wetlands, and springs, and minimization of disturbance and erosion of streambeds and banks.
- Protection of springs and wells in the Project area from impacts due to blasting and hazardous materials contamination.

The Construction Contractor will work cooperatively with the Compliance Inspection Contractor (CIC) and, as appropriate, U.S. Army Corps of Engineers (USACE) and other relevant agency staff throughout construction to determine the most appropriate site-specific measures to be implemented based on a number of factors, including site characteristics, construction techniques to be used, anticipated weather conditions, mandatory permit requirements, and other variables. The Construction Contractor will use the information included in this Plan, including the Aquatic Resource Inventory Reports presented in Attachment I-1 to this Plan, to prepare requests for an agency Notice to Proceed for a particular segment or work element. The use of the term “aquatic resources” in this document refers to streams, wetlands, wells, and springs. The Aquatic Resource Inventory Reports presented in Attachment I-1 document streams, wetlands, and springs within the Project Area. The Construction Contractor will be responsible for identifying wells within 600 feet of the Project centerline, and wells and springs in areas that may be impacted by blasting.

1.2 Contents

The Plan includes information on (1) regulatory requirements pertaining to aquatic resources, (2) specific environmental protection measures (EPMs) to be implemented to meet the goal discussed above, (3) wetland and stream crossing methods to be utilized during Project implementation, and (4) other specific stipulations and methods for protection of sensitive aquatic resources.

1.3 Project Description

Appendix B of the POD, of which this Plan is a part, provides detailed information regarding the components of the transmission system including the transmission structures, communications system, and the substations. It also provides detailed information on construction methods, operation and maintenance, as well as planned stream and wetland crossing methods.

2.0 REGULATORY FRAMEWORK

Construction, operation, and maintenance of the Project include ground-disturbing activities that could impact aquatic resources. The following regulations and associated permits and authorizations will be required for the Project.

The Clean Water Act (CWA; 33 USC Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States (waters of the U.S.). The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. The CWA also requires the USACE to administer permits for dredge or fill in waters of the U.S. Specific sections of the CWA that apply to the Project are described below, followed by a brief description of other aquatic resource permits required for the Project.

2.1 CWA - Section 303(d) List of Impaired Waters

Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that do not meet water quality standards through current technology-based regulations and controls. A water quality standard defines the designated beneficial uses of a water segment and the water quality criteria necessary to support those uses. Currently, both the Idaho Department of Environmental Quality (IDEQ) and Wyoming Department of Environmental Quality (WDEQ) are required to conduct a comprehensive analysis of their respective state's water bodies every two years to determine if they meet water quality standards and develop a list of impaired or threatened waters that require Total Maximum Daily Load (TMDL). The Project would need to implement measures to avoid and / or reduce the potential that it would contribute to the listing of a water body as impaired or be inconsistent with an adopted TMDL.

2.2 CWA - Section 130.7 Total Maximum Daily Load

Section 130.7 of the CWA requires states to establish TMDL programs, which are approved by the U.S. Environmental Protection Agency (USEPA) for streams and lakes that do not meet adopted water quality standards. A TMDL includes a quantitative assessment of water quality problems, contributing sources, and load reductions or control actions needed to restore and protect water bodies. A TMDL budget takes into account loads from point, nonpoint, and natural background sources. National Pollutant Discharge Elimination System (NPDES) permits address point-source pollution to surface waters. Non-point source pollution is addressed by the application of Best Management Practices (BMPs) and EPMs found in this Plan.

In compliance with the federal CWA, the IDEQ and the WDEQ have identified Section 303(d) water quality limited streams and lakes for development of TMDL criteria. TMDLs have been established for surface waters in Idaho. WDEQ is in the process of developing TMDLS at this time as they are just beginning to implement the TMDL program. WDEQ projects that from the time of listing a waterbody as impaired, a TMDL for that waterbody would be developed within 1 to 5 years.

Stream segments within the Project area that have been identified on 303(d) lists as impaired due to either sedimentation (sediment-impaired streams) or high temperatures (temperature-impaired streams) are listed in Table D.16-6 of the Final Environmental Impact Statement (EIS; BLM 2013).

2.3 CWA - Section 401 Water Quality Certification

Pursuant to Section 401 of the federal CWA, any permit or license issued by a federal agency for an activity that may result in a discharge into waters of the U.S. requires certification from the state in which the discharge originates. This requirement allows each state to have input into federally approved projects that may affect its waters (rivers, streams, lakes, and wetlands) and to ensure the projects would comply with state water quality standards and any other water quality requirements of state law. State certification ensures that the project would not adversely impact impaired waters (waters that do not meet water quality standards) and that the project complies with applicable water quality improvement plans (TMDLs). The states must grant, deny, or waive Section 401 certification for a project before a federal permit or license can be issued.

The Departments of Environmental Quality for both Idaho and Wyoming must provide Section 401 Water Quality Certifications for the federally issued permits, including the 404 permits in both states and 402 permits issued in Wyoming. The USEPA has 402 jurisdiction in Idaho. The Companies are responsible for securing the 401 Water Quality Certifications.

2.4 CWA - Section 402 NPDES Permits

The NPDES program requires facilities discharging from a point source into waters of the U.S. to obtain discharge permits. A point source is a conveyance such as a pipe, storm drain or other point. USEPA is responsible for permitting and enforcing all NPDES permits in Idaho. NPDES permits are administered by the WDEQ in Wyoming. Most storm water discharges are considered point sources and require coverage by an NPDES permit. The Construction Contractor is responsible for obtaining coverage for the Project under existing construction storm water programs in Idaho and Wyoming.

The NPDES Stormwater Program requires operators of construction sites that disturb one acre or more to obtain authorization to discharge storm water under an NPDES construction storm water permit. In Idaho and Wyoming, the EPA and WDEQ, respectively, have issued Construction General Permits (CGP). In order to be covered under the CGP, site-specific Storm Water Pollution Prevention Plans (SWPPPs) must be developed. The operator files a Notice of Intent which indicates the operator would comply with the CGP. The site operator must document the erosion, sediment, and pollution controls that would be used during construction and operation, inspect the controls periodically, and maintain the controls throughout the life of the project. If a TMDL has been established for the water body where a project would discharge, and the TMDL indicates that it applies to construction or storm water discharges, then the SWPPP must be consistent with the requirements of that TMDL.

If hazardous materials, including fuels and lubricants, are used or stored in amounts exceeding certain quantities, a Spill Prevention, Containment and Countermeasures

(SPCC) Plan is required. Section 311(j)(1)(c) of the CWA contains the regulations preventing discharge of oil to surface water. The SPCC Plan also contains measures regarding the handling and storage of such materials. The Framework SWPPP and SPCC Plans are found in Appendices F and G of this POD, respectively.

2.5 CWA - Section 404 Waters of the U.S. Permits

Section 404 of the CWA authorizes the USACE to regulate the discharge of dredged or fill material to the waters of the U.S. Discharges are authorized through issuance of nationwide permits or individual permits for specific activities.

The USACE jurisdiction over non-tidal waters of the U.S. extends to the "ordinary high water mark provided the jurisdiction is not extended by the presence of wetlands" (33 CFR § 328.4); and under Title 40 CFR § 230.3 (s)(1-7), waters of the U.S. are defined as:

> *"All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide, all interstate waters including interstate wetlands, all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which would affect interstate or foreign commerce, including such waters which are or could be used by interstate or foreign travelers for recreational or other purposes, or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce, or which are used or could be used for industrial purposes by industries in interstate commerce; all impoundment of waters otherwise defined as waters of the United States interstate commerce, tributaries of waters identified in paragraphs 1-4 of this section, the territorial sea; and wetlands adjacent to waters."*

Many wetlands are protected under the CWA as waters of the U.S. Wetlands are defined by the USACE based on the presence of wetland vegetation, wetland hydrology, and hydric soils. In addition, Executive Order 11990, Protection of Wetlands (42 Federal Register 26961), directs all federal agencies to minimize the destruction, loss, or degradation of wetlands, and to enhance the natural and beneficial values of wetlands. Federal regulation and management of wetlands follows a "no net loss" policy. Under Section 404, the USACE issues a number of nationwide permits for different types of activities that result in minimal individual and cumulative adverse effects on the aquatic environment and individual permits for larger and more complex impacts.

Nationwide permits. A nationwide permit is a general permit that authorizes a category of activities throughout the nation by streamlining the approval process for certain types of activities that have minimal impacts to aquatic resources. These permits are valid only if the conditions applicable to the permit are met. If the conditions cannot be met, a regional or individual permit would be required. Section 404 Nationwide Permit 12 (77 *Federal Register* 10271-10272 February 2012) covers construction, maintenance, and repair of utility lines in all waters of the U.S. provided that there is no change in preconstruction contours. This nationwide permit also covers related facilities including substations, structure foundations, and roads; provided that

these activities do not result in the loss of greater than 0.5 acre of waters of the U.S. Nationwide Permit 12 also authorizes temporary structures, fill, and work necessary to conduct utility line activities as long as (1) appropriate measures are taken to maintain normal downstream flows and minimize flooding, (2) structures and fill consist of materials that would not be eroded by high flows, and (3) structures and fill are removed in their entirety and the affected areas are returned to preconstruction elevations and re-vegetated as appropriate upon project completion. Impact limitations for Nationwide Permit 12 cover all disturbances at a single crossing of a wetland or stream, or multiple crossings of the same wetland or stream.

Any permanent impact over 0.1 acre to waters of the U.S. requires full mitigation, regardless of permit type. Permanent loss of more than 0.5 acre of a water of the U.S. requires an individual (regional) permit.

Nationwide Permits contain general conditions that address potential impacts to the environment that could result from dredge or fill of waters of the U.S., such as adverse effects to soils, migration and spawning habitats, endangered species, or historic properties. Supplemental documentation may be required as part of a preconstruction notification package (e.g., plant and wildlife survey reports, cultural resource survey reports) to support compliance with the general conditions of the Nationwide Permit. Compliance with the National Historic Preservation Act and the Endangered Species Act is addressed in the EIS for this Project (BLM 2013).

It is expected that the Project will comply with Section 404 of the CWA under Nationwide Permit 12. Obtaining nationwide permit coverage is the responsibility of the Companies. Modifications of the nationwide permit during construction will be the responsibility of the Construction Contractor.

2.6 Individual Permits

Individual Permits are issued following a full public notice interest review of an individual application for a USACE Section 404 permit. A public notice is distributed to all known interested persons. After evaluating all comments and information received, a final decision on the application is made. The final decision is made on a case-by-case evaluation and is generally based on the outcome of the public notice process and a determination of project benefits versus detriments (losses). An Individual Permit is not expected to be required for the Project.

2.7 Rivers and Harbors Act of 1899, Sections 9 and 10

Section 9 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403; Chapter 425, March 3, 1899; 30 Stat. 1151) (Act) prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. without Congressional approval. Administration of Section 9 has been delegated to the U.S. Coast Guard. Structures authorized by state legislatures may be built if the affected navigable waters are totally within one state, provided that the plan is approved by the Chief of Engineers and the Secretary of Army (33 U.S.C. 401).

Under Section 10 of the Act, the building of any wharfs, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within

navigable waters requires the approval of the Chief of Engineers. Authority of the USACE to issue permits for the discharge of refuse matter into or affecting navigable waters under section 13 of the 1899 Act (33 U.S.C. 407; 30 Stat. 1152) was modified by title IV of P.L. 92-500, October 18, 1972, the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1341-1345; 86 Stat. 877), as amended, which established the NPDES Permits.

The Fish and Wildlife Coordination Act (16 U.S.C. 661-667e; 48 Stat. 401), as amended, provides authority for the U.S. Fish and Wildlife Service (USFWS) to review and comment on the effects on fish and wildlife of activities proposed to be undertaken or permitted by the USACE. USFWS concerns include contaminated sediments associated with dredge or fill projects in navigable waters.

No navigable waterways are crossed in Segment D of the Project.

2.8 Other Federal Permits and Programs

Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, “each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities.”

Executive Order 11990, Protection of Wetlands (42 Federal Register 26961), directs all federal agencies to minimize the destruction, loss, or degradation of wetlands, and to enhance the natural and beneficial values of wetlands.

2.9 Idaho Permit

An Idaho State Stream Alteration Permit must be obtained prior to altering any stream as defined by Idaho Administrative Code (37.03.07) which includes “to obstruct, diminish, destroy, alter, modify, or change the natural existing shape of the channel or to change the direction of flow of water of any stream channel within or below the mean high water mark.”

3.0 OVERVIEW OF STREAMS, WETLANDS, WELLS, AND SPRINGS

3.1 Streams and Drainages

A review of the National Wetland Inventory (NWI; USFWS 2013) and field surveys conducted in 2009 through 2013 (Tetra Tech 2013a, 2013b, 2013c, and 2013d) identified and will identify perennial, intermittent, and ephemeral streams and drainages that are expected to be impacted by Project construction, operation and maintenance. Aquatic resources potentially impacted by the Project are being delineated during preconstruction surveys and the resulting Aquatic Resources Inventory Reports (included as Attachment I-1 to this Plan) will be used by the USACE and other relevant

agencies to assess the impacts and determine the need for compensatory mitigation as a result of those impacts.

3.2 Wetlands

Wetlands are defined for regulatory purposes as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR Part 328.3, 40 CFR Part 230.3). Wetlands are important ecological resources that perform many functions including groundwater recharge, flood flow attenuation and conveyance, erosion control, and water quality improvement. They also provide habitat for many plants and animals, including threatened or endangered species.

Wetland delineations were conducted following the USACE Wetland Delineation Manual (1987), Arid West Regional Supplement (2008), and/or Western Mountains, Valleys, and Coast Regional Supplement (2010), as applicable. The USACE Wetland Delineation Manual provides technical guidelines and methods for a three-parameter approach to determine the location and boundaries of potentially jurisdictional wetlands. This approach requires that an area support positive indicators of hydrophytic vegetation, hydric soils, and wetland hydrology to be considered a wetland. Surveyors gathered wetland determination information on data forms in the field and mapped wetland boundaries using global positioning system (GPS) technology. Delineated wetlands are shown on the maps contained in Appendix II-2 of Volume II of the POD.

3.3 Wells and Springs

Wells within 600 feet of the Project centerline and wells and springs in known blasting zones will be identified prior to construction by the Construction Contractor. Springs within the Project Area were identified during preconstruction surveys as documented in the Aquatic Resources Inventory Reports included as Attachment I-1.

4.0 PROTECTION OF STREAMS, WETLANDS, WELLS, AND SPRINGS DURING CONSTRUCTION AND OPERATION

The Companies and the Construction Contractor will adhere to the EPMs and other specific stipulations and methods discussed in the following sections to minimize Project impacts to aquatic resources where they occur in the vicinity of the Project right-of-way (ROW), access roads, substations, and temporary work areas. Other specific stipulations and methods presented in Appendix D of the POD – Framework Reclamation Plan, are designed to minimize the potential impacts to other non-jurisdictional drainages and dry swales found along the Project route. In addition to Appendix D of the POD, Appendices E (Framework Noxious Weed Plan), F (Framework SWPPP), G (Framework SPCC Plan), and H (Plant and Wildlife Conservation Measures Plan) also contain EPMs that will result in the protection and minimization of impacts to aquatic resources. All EPMs and their applicability are described in Appendix Z of the POD – Environmental Protection Measures. The EPMs listed below and included in

Appendix Z are a result of consultation conducted between the agencies and the Companies during development of the EIS.

As discussed above, the Construction Contractor will work cooperatively with the CIC and, as appropriate, USACE and other relevant agency staff throughout construction to determine the most appropriate site-specific measures to be implemented. The Construction Contractor will include site-specific plans in the Final Stream, Wetland, Well, and Spring Protection Plan.

4.1 Environmental Protection Measures – Design and Siting

Design features for environmental protection will address many of the concerns associated with direct impacts to aquatic resources. EPMs to protect and minimize environmental impacts to sensitive aquatic resources during construction, operation and maintenance are listed below.

G-1 Resource Management Plan (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements will apply on BLM-managed lands.

G-2 Forest Plan Standards and Guidelines (as amended) will apply on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.

OM-18 Herbaceous plants and low-growing shrubs will be left in place if they do not interfere with the safe operation and maintenance (O&M) of Project lines and equipment as described in Appendix R of the POD.

OM-19 The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.

VIS-6 To minimize sensitive feature disturbance and/or visual contrast in designated areas on federal lands, structures will be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses and cultural sites and/or to allow conductors to clearly span the features, within the limits of standard tower design. Where conflicts arise between resources, the applicable land manager will be consulted.

VIS-8 Crossings of rivers shall be at approximately right angles where practical. Strategic placement of structures will be done both as a means to screen views of the transmission line and ROW and to minimize the need for vegetative clearing.

REC-8 Areas of existing noxious weeds and invasive species will be avoided where possible to reduce the risk of spread.

WET-1 Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, Management Framework Plans, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH; USFS 1995) buffers will be followed.

WET-3 Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land-managing agency. The Companies and/or Construction Contractor will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.

FISH-1 On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.

WQA-23 Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.

WQA-24 On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.

WQA-25 All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.

WQA-26 Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region.

WQA-27 On non-federal lands, culvert placement should comply with state BMPs.

WQA-29 If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.

TRANS-13 Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during the design stage.

4.2 Environmental Protection Measures – Preconstruction

In addition to the design and siting-related EPMs above, the following EPMs will be implemented during preconstruction activities to prevent and minimize impacts to aquatic resources. EPMs to protect and minimize environmental impacts to sensitive aquatic resources that will be implemented prior to construction activities are listed below.

OM-17 Woody vegetation management within 50 feet of streams will be conducted by hand crews.

REC-2 Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.

REC-3 Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.

REC-4 Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable.

REC-5 All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (BLM 2007; http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used,

target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.

REC-6 Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g. handgun, boom, and injector) will be used in open areas readily accessible by vehicles. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.

REC-7 All areas treated will be documented using GPS technologies and included in the annual report.

WET-2 Wetland delineations will be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation will identify both wetland and non-wetland waters of the United States that would be affected by the Project.

WET-4 To meet USACE requirements for CWA 404 permitting, the Companies will submit a mitigation plan that is accepted by the USACE. The framework for this plan is included in the Final EIS.

WQA-1 The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.

WQA-2 NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.

WQA-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.

4.3 Environmental Protection Measures – Construction, Reclamation, and Operations and Maintenance

In addition to the EPMs listed above for design and preconstruction, the following EPMs will be implemented during construction, reclamation, and operations and maintenance activities to prevent and minimize impacts to streams, wetlands, wells, and springs.

These measures will be followed as standard practices to protect sensitive aquatic resources in the Project area. Additional EPMs specific to spill prevention and erosion and sedimentation are provided in Sections 4.5 and 4.6, respectively.

OM-16 Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.

OM-20 Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.

REC-1 The Companies' personnel and their contractor will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of new infestations.

REC-9 Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.

REC-10 When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the Final Reclamation Plan.

REC-11 Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.

REC-12 Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.

REC-13 Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.

REC-14 Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil will be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.

REC-15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

REC-16 The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.

REC-18 Topsoil and sub-surface soils will be replaced in the proper order during reclamation.

REC-19 Where it is necessary to spread soils (subsurface soils or waste rock resulting from excavations or foundation drilling), it will be done where practicable and in close proximity to where the disturbance occurred (within the ROW). Material will be spread uniformly to match existing contours, covered with topsoil when available and reseeded.

REC-20 Temporarily disturbed lands within the ROW will be recontoured to blend with the surrounding landscape. Recontouring will emphasize restoration of the existing drainage patterns and landform to preconstruction conditions, to the extent practicable. (Tower pads will not be recontoured.)

REC-21 De-compaction: Areas within the ROW, laydown or multi-purpose areas, and other areas of extensive vehicle travel will typically contain

compacted soils. These soils will be de-compacted on a case-by-case basis through negotiation with the landowner or land management agency.

REC-22 Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including but not limited to: assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices will be left in place.

REC-29 Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).

WET-5 Limit construction equipment operating in streams and wetlands to that needed to clear temporary access, erect towers, pull conductor, and perform ground disturbing activities.

WET-6 Limit clearing of vegetation at the edges of a stream or wetland to the minimal area necessary for required conductor clearance and vehicle passage. Reclaim at least 70 percent of potential ground cover within 100 feet from the edges of all perennial streams, lakes, and other water bodies, or to the outer margin of the riparian ecosystem where wider than 100 feet.

WET-7 Salvage and respread topsoil in areas subject to temporary disturbance where grading and excavation will occur.

WET-8 Prohibit the use of imported soil, tree stumps, riprap, or brush to stabilize the construction corridor within wetlands.

FISH-3 All wetlands and waters in the project area are assumed to contain aquatic invasive species and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.

WQA-21 Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

WQA-45 Reclaim stream channels/bottoms and wetlands to their approximate preconstruction configuration/contours, unless the original stream bank contours are excessively steep and/or unstable and a more stable final contour can be specified or where permanent stream crossings must be created to maintain access throughout the life of the Project.

WQA-47 Stabilize stream banks, wetlands, and adjacent upland areas by establishing permanent erosion control measures and vegetation cover after the completion of construction (refer to Appendix N – Framework Erosion, Dust Control and Air Quality Plan and Appendix D – Framework Reclamation Plan).

WQA-48 Remove all prefabricated equipment pads, swamp mats, and geotextile fabric used for stream and wetland crossings on completion of construction.

TRANS-16 All temporary culverts and associated fill material will be removed from stream crossings after construction. All permanent culverts will be engineered by the Construction Contractor and approved by the Companies prior to installation.

TRANS-17 The road or highway within the ROW corridor shall be used to the maximum extent possible for construction and maintenance of the new ROW.

TRANS-18 To help set public expectations for when temporary access roads are decommissioned, signs shall be posted on all temporary roads and overland access routes identifying them as reclamation areas. Signs will state “Restoration in Progress – No Vehicle Traffic Allowed.”

4.4 Wetland and Stream Crossing Methods

The transmission line centerline crosses streams and wetlands that will not be permanently impacted by the Project because only the conductors will cross these water features. Where the line must cross forested riparian or wetland areas where the vegetation is now of a height to touch the conductors once strung and tensioned, or could grow into the conductors and create a safety hazard, the taller vegetation will be cut prior to construction.

Operations and maintenance efforts will maintain the vegetation under the conductors at or below a height that prevents interaction with the conductors. See Appendix B of this POD, Section 4.1.5 – Vegetation Management, for a full description of vegetation management under conductors throughout the Project. This ROW preparation and maintenance was taken into consideration when estimating total impact to wetland and riparian areas in the Final EIS (see Sections 3.9, Wetlands, and 3.16, Water Resources; BLM 2013). An updated impact analysis based on field collected data will be presented in the USACE nationwide permit application.

With only a few exceptions, permanent, above-grade roads are needed to each structure and to each substation and regeneration station as part of the Project design. Where feasible, roads have been selected (if existing) or designed (if proposed) to avoid water and wetland crossings. Where such a crossing is not avoidable, several water or wetland crossing methods have been selected to minimize impact to waterbodies while allowing for safe and permanent access to each structure. Those methods, including avoidance of permanent roads in the important wetland area of the Bear River Plain near Cokeville, WY and Montpelier, ID, are detailed below.

4.4.1 Stream Crossing Methods

If a stream or wetland cannot be avoided during construction, the CIC and Construction Contractor will work together to identify the appropriate crossing strategy for vehicular access. Streams that the Project will impact are identified in the Aquatic Resource Inventory Reports (see Attachment A – Aquatic Resource Inventory Reports). The Construction Contractor will provide site-specific proposed crossing methods to the BLM, USFS, and other agencies as part of a request for a Notice to Proceed for a particular segment or work element.

Access roads will be constructed to minimize disruption of natural drainage patterns.. Each crossing will be designed with the roads as advanced engineering is completed, and crossing disturbance will vary. On all federally managed lands, the Companies will consult with the managing agency regarding relevant standards and guidelines pertaining to road crossing methods at waterbodies. Consultation includes site assessment, design, installation, maintenance, and decommissioning. Typical design drawings for the various types of crossing methods are presented in Appendix B of this POD, Section 2.5.3 – Waterbody Crossings with Access Roads, and summarized below:

- Type 1—Drive through: Crossing of a channel with only minimal vegetation removal and no cut or fill needed. This is typical for much of the low-precipitation sagebrush country with rolling topography and ephemeral streams that rarely flow with water.
- Type 2—Ford: Crossing of a channel that includes grading and stabilization. Stream banks and approaches will be graded to allow vehicle passage and stabilized with rock or other erosion control devices. The stream bed will in some areas be reinforced with coarse rock material, where approved by the land management agency, to support vehicle loads, reduce erosion and minimize sedimentation into the waterway.
- Type 3—Culvert: Crossing of a waterbody that includes installation of a culvert and a stable road surface established over the culvert for vehicle passage. Culverts are designed and installed under the guidance of a qualified engineer who, in collaboration with a hydrologist and aquatic biologist where required by the land management agency, recommends placement locations; culvert gradient, height, and sizing; and proper construction methods.
- Avoid Crossing: Where constructing a new waterbody crossing is impractical or would require a bridge or a very large (>48-inch-diameter) culvert, existing

waterbody crossings will be used and access redesigned to avoid a new crossing. All canals and ditches will be avoided by using existing crossings, as would all large perennial waterbodies like rivers.

Volume II, Appendix II-2 identifies the system of stream crossing types that have been identified by the Companies for access. The Construction Contractor will review the stream crossing types and incorporate into the Final Stream, Wetland, Well, and Spring Protection Plan any proposed modifications to, or between, stream crossing types. If the Construction Contractor wants to modify the stream crossing type after the Companies and BLM, BOR or USFS approval of the Final Stream, Wetland, Well, and Spring Protection Plan, the variance approval process outlined in Appendix C of the POD will be followed on federally managed lands, including any additional surveys, reporting, and approvals. The Construction Contractor will also contact private landowners and reach agreement on the change before using stream crossing types other than those approved through this process.

When implemented, these crossing methods will help protect water quality by minimizing stream channel disturbance, erosion, and sedimentation due to Project activities. The performance of low water stream crossings will be monitored for the life of the access road, and maintained or repaired as necessary to protect water quality. If the chosen crossing method is not adequately preventing and/or minimizing sedimentation and erosion, the CIC may require additional sediment controls when circumstances warrant. Streams crossed by the Project will be monitored by the CIC throughout construction for signs of bed and/or bank degradation. If disturbance resulting from installation of erosion control devices across shallow swales outweighs the benefits of having the devices in place, then the CIC, in consultation with the Construction Contractor, will have the option of not prescribing any temporary stream crossing or erosion control method. See Appendix C of this POD (Environmental Compliance Management Plan).

Flow of sediment into the stream will be prevented by installing waterbars on the travel route at or near the top of bank (or other slope break) to redirect road runoff away from the stream. If necessary, downslope protection will be increased by extending silt fence from the down-gradient end of the waterbar.

In cases where it is impractical and highly disruptive to the environment to construct temporary crossings, such as over very large watercourses or deep canyons, vehicles will not attempt to cross the watercourse. The conductor will be strung across these resources by hand or other method and construction equipment will be routed around.

4.4.2 Wetland Crossing Methods

A combination of methods for road construction in wetlands is proposed:

- Construction of permanent above-grade roads that will be utilized during construction, operation, and maintenance. This will typically entail placement of permanent fill in wetlands such that the travel surface would be higher in elevation than the ordinary high water level. The construction of above-grade access roads allows for the use of the types of equipment needed for

construction, operation, maintenance; and for expedited access for emergency restoration throughout the year.

- Construction or use of temporary roads during construction, followed by restoration of the disturbance after construction. The Companies only propose this approach in the area of extensive wetlands in the Bear River Plain, in part because it is feasible to store the amount of matting needed for emergency access in the immediate vicinity. Smaller wetland and riparian area crossings will be constructed using permanent crossing methods because it would not be feasible to provide for temporary crossing materials for scattered crossings along 488 miles of the Project. Where feasible in areas where temporary roads will be used, construction equipment may travel overland if the area is dry. If construction occurs when the ground is solidly frozen, ice roads could be constructed.

If construction must occur when the ground is wet, temporary matting materials will be installed to allow access for heavy vehicles and equipment. The mats typically come in the form of heavy timbers bolted together. They are often used over a geotextile that is applied directly over the wet soil surface. When construction use is complete, the mats are removed, the geotextile taken up, and wetland vegetation is allowed to return. This approach will be used where feasible, since it further reduces vegetation damage and compaction and reduces the time for reclamation. Mats spread the concentrated axle loads from equipment over a much larger surface area than the tires alone, thereby reducing the bearing pressure on fragile soils. Matting has a limited service life before replacement is required and must be stored for maintenance and emergency reclamation activities. Table 4-1 shows an estimate of miles of temporary roads for construction access in the three largest wetland areas crossed by the Proposed Route. Though exact locations may change during final design, the Companies are committed to using temporary crossings wherever feasible in these three important wetland areas.

Table 4-1. Access Road Wetland Crossings in the Bear River Plain

Location	Segment 4 Mileposts	Approximate Miles			
		Total New or Improved Access Roads	**New or Improved Access Road in Uplands**	**Proposed for Permanent Fill in Wetlands**	**Proposed for Temporary Access in Wetlands**
Cokeville	123.0-126.8	2.2	1.3	0.0	0.9
Bear River	133.5-134.5	1.8	0.0	0.0	1.8
Montpelier	148.0-153.6	7.9	5.1	0.0	2.8

Where temporary road access is utilized, road areas will be rehabilitated after construction. No permanent roads will be available for routine operations inspections or repairs. Operational inspections and repairs will be scheduled for times when the ground is dry or frozen and access will be overland along the road alignment by ATV. Emergency repairs requiring heavy equipment will access the damaged area using matting if necessary. After emergency repairs are completed, matting will be removed and the wetland areas allowed to revegetate naturally.

If a wetland will be avoided, but a travel route will be bladed within 20 feet of the wetland edge, silt fence will be installed along the travel route on the wetland side unless the wetland is upgradient.

If removed during construction, wetland soil will be temporarily stored either within the wetland or in upland areas close to the wetland boundaries and will be used to restore the site to preconstruction contours. Silt fence will be installed around tower sites where necessary to minimize the potential for sediment discharge from excavated spoil into adjacent, undisturbed wetlands.

4.5 Spill Prevention Environmental Protection Measures

To prevent potential spills or discharges from entering and impacting streams and wetlands, the EPMs in Appendix G – Framework SPCC Plan will be implemented, including the following:

WQA-13 Construction industry standard practices and BMPs will be used for spill prevention and containment.

WQA-14 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.

WQA-15 All multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC plan will specify BMPs.

WQA-16 If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site.

WQA-17 If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.

WQA-18 For spills in standing water or where spilled materials reach water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water. Other actions will be taken, as necessary, to clean up contaminated waters.

4.6 Erosion and Sedimentation Environmental Protection Measures

To limit erosion and sedimentation from affecting streams and wetlands, the EPMs listed in Appendix F – Framework SWPPP will be implemented. In addition to the EPMs presented in the Framework SWPPP and the sections above, the following measures will comply with NPDES permit requirements and help to limit erosion and sedimentation:

WQA-4 The SWPPPs will be modified as necessary to account for changing construction conditions.

WQA-6 Stormwater BMPs will be inspected and maintained on all disturbed lands during construction activities, as described in the SWPPP and appropriate NPDES permit.

4.7 Soil Storage near Streams

Any soil or other organic debris piled by bulldozers and grading equipment near the stream banks during construction will be stored a minimum of 100 feet from the banks and appropriately re-spread and stabilized to prevent sedimentation during storm events. The Construction Contractor will also adhere to any additional soil storage measures as required by applicable Project permits.

4.8 Stream Obstruction and Flash Flood Hazard

The placement of transmission towers within the channel of a stream, drainage, or flash flood area will be avoided to the extent possible. If placement within these areas is unavoidable, the towers will be engineered to withstand the force of flood flows and will be constructed according to all applicable permits. Where placement of a transmission tower or road is unavoidable within a stream channel, permanent diversion structures, or culverts sufficient to carry the stream's normal conveyance capacity at the site, or armoring for the pole foundations will be constructed.

4.9 Protection of Wells and Springs

All applicable laws and regulations will be followed in respect to the protection for drinking water sources. Wells within 600 feet of the Project centerline and wells and springs in known blasting zones will be identified prior to construction by the Construction Contractor.

Refer to Appendix G – Framework SPCC Plan; Appendix M – Framework Blasting Plan; and Appendix P – Framework Hazardous Materials Management Plan for additional measures pertaining to the protection of wells and springs.

5.0 LITERATURE CITED

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ATTACHMENT I-1
AQUATIC RESOURCE INVENTORY REPORTS

Aquatic Resource Inventory Reports are In Progress

APPENDIX J
FRAMEWORK PALEONTOLOGICAL RESOURCES PROTECTION PLAN

Appendix J

Framework Paleontological Resources Protection Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Paleontological Resources Protection Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to minimize construction, operation, and maintenance-related impacts to paleontological resources are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Paleontological Resources Protection Plan, which will include mapping of environmentally sensitive areas identified during preconstruction surveys and site-specific monitoring locations.

2.0 PURPOSE

Paleontological resources (i.e., fossils) are the remains or traces of ancient life (DOI 2000). Fossil remains may include bones, teeth, shells, leaves, and wood found in geological deposits within which they were originally buried (DOI 2000). Paleontological resources include not only the actual fossils, but also the collecting localities and the geological deposits that contain the fossils (DOI 2000).

The purpose of this Plan is to assist the BLM, USFS, other federal and state agencies, and the Companies in meeting their obligations to protect paleontological resources from potential impacts during Project construction, operation, and maintenance activities. The Plan identifies the mitigation measures needed to avoid or reduce Project-related impacts to paleontological resources. This Plan provides important background and contextual information useful for the paleontological resources protection program. The logistics, procedures, and methods outlined in this Plan ensure compliance with federal and state regulations. The goal of this plan is to ensure that impacts from construction, operation, and maintenance of the Project are kept to a minimum through the use of management practices and environmental protection measures (EPMs) described in this Plan.

The Plan is a work plan for paleontological-related activities needed during the course of construction, operation, and maintenance of the Project. It is not the intent of the Plan to present a comprehensive list of sites with discussions of all significant taxa found in the vicinity of the Project area. Instead, this information was compiled for use in drafting the Final Paleontological Resources Protection Plan and is presented as Attachment J-2 – Evaluation of Existing Conditions (Confidential).

The Plan offers a research-oriented framework and accompanying logistical guidelines to ensure significant non-renewable paleontological resources found either during preconstruction surveys or unearthed during Project construction, operations, or maintenance activities will be managed appropriately and in a timely manner, thereby effectively mitigating adverse impacts to these fossil resources.

2.1 Significant Paleontological Resources

Vertebrate fossils generally are considered to be the most sensitive and are at the highest risk from ground disturbance. These fossils tend to be rare and fragmentary (portions of skeletons) when found, so even disarticulated remains are considered significant. Invertebrate and plant fossils, by contrast, are relatively common but can be very important to paleoecological studies of the area. With invertebrate and plant fossil localities, the “type” sites (i.e., localities that have produced fossils that paleontologists have used to define extinct species) are considered among the most significant scientific resources.

3.0 REGULATORY FRAMEWORK

The following provides a brief overview of federal and state legislation and regulatory compliance applicable to paleontological resources in the Project area considered in the development of this Plan.

3.1 Federal Land Policy and Management Act of 1976 (P.L. 94-579)

The Federal Land Policy and Management Act of 1976 (FLPMA) was enacted "to establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes," and requires that important historic, cultural, and natural aspects of our natural history be preserved. Pursuant to the FLPMA, the BLM issued a regulation that provides additional protection for fossil resources. Section 8365.1-5 of Title 43 of the Code of Federal Regulations prohibits the removal of any scientific resource or natural object without authorization, with the exception of common invertebrate fossils and petrified wood. (BLM 1998, p. V-1; BLM 2009, p. 1).

3.2 Paleontological Resources Preservation of 2009 (Public Law 111-011)

On March 30, 2009, the Paleontological Resources Preservation Act (PRPA) became law with enactment of the Omnibus Public Land Management Act (OPLMA) of 2009. The PRPA requires the Secretaries of the Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. The PRPA includes specific provisions addressing management of these resources by the BLM, the National Park Service, BOR, the U.S. Fish and Wildlife Service, and the USFS.

The PRPA only applies to federal lands and does not affect private lands. It provides authority for the protection of paleontological resources on federal lands including criminal and civil penalties for fossil theft and vandalism.

3.3 Statutes Regarding Protection of Paleontological Resources on State Lands

Wyoming Statute 36-1-114-116 makes it a crime in Wyoming to disturb or remove paleontological materials on state land without permission of the State Lands Board.

Idaho Code 67-4119 mandates protection of vertebrate paleontological sites and resources and ensures their safety and availability for scientific research. In addition, Idaho Code 67-4121 protects vertebrate paleontological sites and deposits on any public land in Idaho. No person shall remove from the state of Idaho any part of any vertebrate paleontological site or deposit without first obtaining the consent of the board of trustees of the Idaho State Historical Society.

4.0 PALEONTOLOGICAL POTENTIAL

4.1 Determination of Paleontological Potential

The Potential Fossil Yield Classification (PFYC) system classifies geological units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential (BLM 2008). The five-part PFYC system, as defined by the BLM (2008), is explained below.

Class 1 – Very low potential: Geological units not likely to contain recognizable fossil remains such as:

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is nonexistent or extremely rare.

Class 2 – Low potential: Sedimentary geological units not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils such as:

- Vertebrate or significant invertebrate or plant fossils not present or very rare.
- Units that are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

The probability for a project to impact vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities will be managed on a case-by-case basis and assessment or mitigation may be unnecessary except in rare or isolated circumstances.

Class 3 – Moderate or unknown potential: Fossiliferous sedimentary geological units where fossil content varies in significance, abundance, and predictable occurrence, or sedimentary units of unknown fossil potential such as:

- Often marine in origin with sporadic known occurrences of vertebrate fossils.
- Vertebrate fossils and scientifically significant invertebrate and plant fossils known to occur intermittently and are predictably known to be low.
- Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

Class 3, 4, and 5 units are divided into subclasses, as described below.

- <u>Class 3a – Moderate potential</u>: Units are known to contain vertebrate fossils or scientifically significant invertebrate or plant fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but the potential is somewhat higher for common fossils.
- <u>Class 3b – Unknown potential</u>: Units exhibit geological features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant fossils. The units in this class may eventually be placed in another class when sufficient surveying and research is performed. The unknown

potential of the units in this class should be carefully considered when developing any mitigation or management plans. This classification includes a broad range of paleontological potential. It includes geological units of unknown potential, as well as units of moderate or infrequent occurrence of fossil resources. Management considerations cover a broad range of options and could include pre-disturbance surveys, monitoring, or avoidance. Ground-disturbing activities will require sufficient assessment to determine where significant paleontological resources occur in the area of the proposed action and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and lower concern of affecting significant paleontological resources.

Class 4 – High potential: Geological units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Ground-disturbing activities may adversely affect paleontological resources in many cases.

- Class 4a – High potential: Units exposed with little or no soil or vegetative cover. Outcrop areas are extensive, with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from ground-disturbing actions. Illegal collection activities may impact some areas.
- Class 4b – High potential: These are areas underlain by geological units with high potential, but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity. Class 4b includes areas exhibiting:
  - Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
  - Areas of exposed outcrop smaller than two contiguous acres.
  - Outcrops forming cliffs of sufficient height and slope that impacts are minimized by topographic conditions.
- Other characteristics present that lower the vulnerability of both known and unidentified paleontological resources.

The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, which may include removal or penetration of the protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the ground-disturbing action usually will be necessary. On-site monitoring or spot-checking may be necessary during construction activities. Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered. Class 4 and 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geological mapping at the

appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

Class 5 – Very high potential: Highly fossiliferous geological units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils and are at risk of human-caused adverse impacts or natural degradation.

- Class 5a – Very high potential: Units are exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from ground-disturbing activities. Unit is frequently the focus of illegal collection activities.
- Class 5b – Very high potential: These are areas underlain by geological units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from ground-disturbing activity. These include areas exhibiting:
  - Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
  - Areas of exposed outcrop are smaller than two contiguous acres.
  - Outcrops forming cliffs of sufficient height and slope that impacts are minimized by topographic conditions.
- Other characteristics present that lower the vulnerability of both known and unidentified paleontological resources.

The probability of impacting significant fossils is high to very high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can be reasonably expected to occur in the impact area. On-the-ground surveys prior to authorizing any ground disturbing activities or land-use adjustments will usually be necessary. On-site monitoring may be necessary during construction activities. Mitigation will often be necessary before and/or during construction. Official designation of areas of avoidance, special interest, and concern may be appropriate.

4.2 Paleontological Potential within the Project Area

Fifty-nine formally mapped rock units (sometimes several formations grouped together) and eight Quaternary unconsolidated units are exposed along the proposed Project alignment.

Table 4-1 provides the number of miles of rock units crossed by the Project with low (PFYC 1 or 2), moderate (PFYC 3), or high (PFYC 4 or 5) paleontological sensitivity. Table 4-2 provides the number of miles of rock units with moderate or high paleontological sensitivity on public lands that are crossed by the Project. Attachment J-1 – Consecutive Milepost Table provides the approximate mileposts and paleontological sensitivity for each formation along the Project.

Table 4-1. Rock Units in Each PFYC Category Crossed by the Project (Miles)

State	PFYC 1/2	PFYC 3	PFYC 4/5	Total
Wyoming	71.5	147.3	201.0	419.8
Idaho	24.3	20.0	23.7	68.0
Total	**95.8**	**167.3**	**224.7**	**487.8**

Table 4-2. Rock Units in PFYC Categories 3 and 4/5 on Public Land Crossed by the Project (Miles)

State	PFYC 3	PFYC 4/5	Total
Wyoming	129.9	138.25	268.15
Idaho	13.9	3.7	17.6
Total	**143.8**	**141.95**	**285.75**

Eighty-five paleontological localities (specific areas where vertebrate fossils have been documented) are known to occur within one mile of the proposed Project route in Wyoming. Most of these localities occur in exposures of the Hanna Formation (41), Steele Shale (14), Fort Union Formation (13), and Ferris Formation (7). Localities within one mile of the route also occur in the White River Formation (1), Sundance Formation (1), Morrison Formation (2), Mesaverde Formation (1), Almond Formation (1), Bridger Formation (1), and the Main Body of the Wasatch Formation (4). No fossil localities are known from within a mile of the Project route in Idaho.

Of these 85 documented paleontological localities, 57 occur on federally managed lands, and 4 occur on State of Wyoming lands. Because this information is considered sensitive, the details are included in Attachment J-2 – Evaluation of Existing Conditions (Confidential). Attachment J-2 is confidential and is not for public review. Attachment J-2 has been submitted to BLM under confidential cover and is available to the Companies and Construction Contractor for planning preconstruction surveys and monitoring activities during construction, operation, and maintenance activities.

5.0 PALEONTOLOGICAL RESOURCES TEAM

The Paleontological Resources Team (PRT) is a part of the Construction Contractor's environmental inspection team and will be report to and coordinate with the Construction Contractor's Environmental Manager and the Compliance Inspection Contractor (CIC), who will coordinate with the BLM Paleontologist. The Construction Contractor's PRT will conduct paleontological resource field monitoring, and implement treatment as described below. Monitoring and treatment activities will be inspected by the CIC.

The PRT will be composed of a Paleontological Resources Specialist (PRS) and Paleontological Resource Monitors (PRMs). The PRS and PRMs will be experienced in paleontological salvage and will be equipped with tools and supplies to allow rapid removal of specimens. The PRS and PRMs will be experienced in paleontological resource evaluation, fossil identification, fossil prospecting, and salvage.

The following sections describe the qualifications, roles, and responsibilities of each member of the PRT. Figure 5-1 presents the PRT reporting structure.

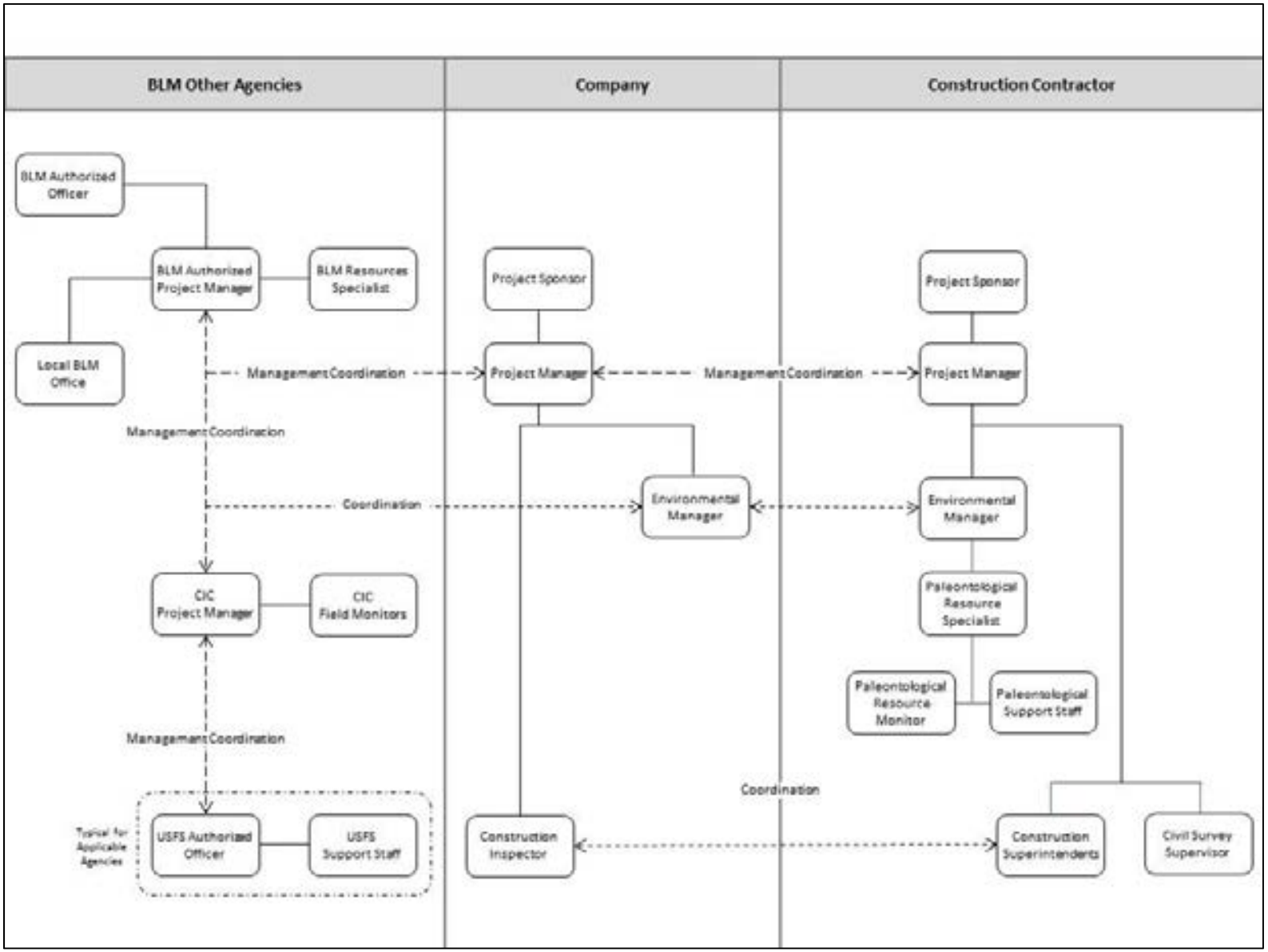

Figure 5-1. Environmental Management Compliance Plan Organization for Paleontological Resources

5.1 Paleontological Resource Specialist

5.1.1 Qualifications

The PRS must, at a minimum, hold a current consulting permit for the states of Idaho and Wyoming, which requires an advanced degree in vertebrate paleontology, and in addition must have:

- At least 5 years of paleontological resource mitigation and field experience, and
- At least 3 years of experience in a decision-making capacity on paleontological resources projects, and the appropriate training and experience to knowledgably make recommendations regarding the significance of paleontological resources.

The Construction Contractor's Environmental Manager will provide written documentation, such as a resume, on the qualifications of the PRS to the CIC and Companies' Environmental Manager(s) no less than 75 days prior to the start of ground disturbance. At least 15 days prior to ground disturbance, the PRS will provide a letter naming anticipated PRMs, including sufficient alternates to account for absences, for the Project demonstrating that the identified PRMs meet the minimum qualifications for paleontological resource monitoring. Preference will be given to monitors who are familiar with the types of paleontological resources in the area.

5.1.2 Responsibilities

The PRS will be the primary point of contact for the PRT. The PRS will coordinate directly with the Construction Contractor's Environmental Manager and with the CIC. The CIC will act as the conduit to the BLM Project Manager and BLM Paleontologist. PRS coordination with the CIC will be done with high-level cooperation with the Construction Contractor. The PRS will be responsible for paleontological resource-related notifications to the Construction Contractor's Environmental Manager, who will be responsible for notifying the Companies, and the CIC, who will be responsible for notifying the BLM.

The PRS will be responsible for developing and providing environmental training related to paleontological resources as part of the Construction Contractor's environmental training program.

The PRS will be responsible for the analysis and the overall quality of field notes and documentation (refer to Section 7.1.2 – Mitigation). The PRS is responsible for the planning, execution, completion, and quality of the paleontological resources monitoring tasks undertaken just prior to and during Project construction.

The PRS will be responsible for obtaining construction plans and schedules from the Construction Contractor for tasking field personnel to monitor construction where identified based on preconstruction surveys (discussed below in Section 6.0 – Preconstruction Surveys) and evaluate or conduct additional investigations where paleontological materials are found.

The PRS will direct the preparations for and execution of day-to-day construction monitoring activities by:

- Ensuring that PRMs are present during 100 percent of ground-disturbing activity along the PFYC Level 4 and 5 areas except as specified below in Section 7.1.1 – Monitoring, and
- Ensuring that PRMs perform spot-checks in PFYC Level 3 areas.

Geologic maps showing the specific areas to be monitored will be provided to the PRS by the Construction Contractor. Based on circumstances in the field, the CIC with the approval of BLM may downgrade some areas if it is determined that reduced monitoring is appropriate.

5.2 Paleontological Resource Monitors

The PRS will direct daily monitoring activities of the PRMs. PRMs will conduct the paleontological construction monitoring as specified in this Plan. The qualifications and responsibilities of the PRMs are as follows.

5.2.1 Qualifications

The PRMs will either:

- Have a Bachelor of Science (BS) or Bachelor of Arts (BA) degree in paleontology, or a related field, at least 2 years of experience conducting paleontological fieldwork under direction of a professional paleontologist with paleontological construction monitoring experience; or
- Have an Associates of Arts (AA) or Associates of Science (AS) degree in paleontology, or related field and at least 4 years of experience conducting paleontological fieldwork under the direction of a professional paleontologist with paleontological construction monitoring experience.

5.2.2 Responsibilities

The PRMs will be present full time at the Project construction sites where monitoring has been determined to be required as described within this Plan. The PRMs will monitor ground-disturbing construction activities and inspect cleared ground and excavation trenches for signs of paleontological resources during construction as indicated in this Plan. During monitoring, the PRMs will provide daily documentation of construction activity and any findings to the PRS. If the PRM or other construction personnel discover paleontological material during construction, the PRM will have authority to halt construction in the vicinity of the find and will notify the PRS.

Backup PRMs will be available to assist in the removal of relatively large, complete, or abundant fossils so that delays to continued construction are minimized. These additional PRMs will report to the site as soon as possible, but no later than 48 hours after the find is reported.

6.0 PRECONSTRUCTION SURVEYS

The Construction Contractor will be responsible for conducting preconstruction surveys by qualified paleontological personnel to determine specific monitoring locations.

Preconstruction surveys will be conducted in PFYC Class 4/5 areas and some Class 3 areas. Preconstruction surveys will not be required in Class 1 and 2 areas because the probability of impacting vertebrate fossils or scientifically significant invertebrate or plant fossils in these rock units is low. Monitoring locations identified as a result of preconstruction surveys will be identified in the Final Paleontological Resources Protection Plan.

The purposes of the preconstruction survey are: 1) to determine if any vertebrate or significant invertebrate or plant fossils are located within areas where ground disturbance will occur; 2) to determine alternative locations, if feasible, to avoid areas where fossils are found on the surface, or to properly remove the fossils; and 3) to determine where monitoring may be required during construction.

Fifty-nine mapped rock formations and eight Quaternary unconsolidated units are exposed along the Project route and may be impacted by construction (note that more than one formation may be grouped under one map symbol). Of these 59 rock formations, the following 14 have a high paleontological potential (PFYC 4 or 5):

- Middle–Upper Jurassic Sundance Formation (KJs)
- Upper Jurassic Morrison Formation (KJ, KJs)
- Lower Cretaceous Cloverly Formation (KJ, KJs)
- Upper Cretaceous Niobrara Formation (Kn, Ksn)
- Upper Cretaceous Lance Formation (Kl)
- Cretaceous–Tertiary (Paleocene) Ferris Formation (TKf)
- Paleocene to earliest Eocene Hanna Formation (Tha)
- Eocene Green River Formation (Tgl, Tglu, Tgtw, Tgrw)
- Eocene Wasatch Formation (Twm, Twc, Twn, Ted)
- Eocene Wind River Formation (Twdr)
- Eocene Bridger Formation (Tb)
- Eocene to Late Pliocene Salt Lake Group (Tpd, Tpv)
- Oligocene White River Formation (Twr, Twru)
- Miocene rocks (Tm, Tmu)

These 14 formations are important fossil-bearing units requiring preconstruction surveys. The specific Project mileposts where each of these rock units will be encountered are presented in Attachment J-1 – Consecutive Milepost Table.

In addition, 41 separate vertebrate fossil localities are recorded near milepost (MP) 2 on BLM-managed land crossed by Segment 2 in the Hanna Basin of Carbon County, Wyoming, and many of these localities are mapped directly on the proposed route. This area requires preconstruction surveys.

The other bedrock units exposed along the Project route have a moderate paleontological potential (PFYC 3):

- Paleozoic rocks (Pzr)
- Permian/Pennsylvanian Casper Formation (P&c)

- Pennsylvanian and Upper Mississippian Amsden Formation and Pennsylvanian-Permian Tensleep Sandstone (PM)
- Permian Phosphoria Formation and related rocks (Pp)
- Permian–Early Triassic Goose Egg Formation (@Pg)
- Lower Triassic Woodside Shale, Thaynes Formation, Dinwoody Formation, and Ankareh Formation (@ad, Tru, TRl)
- Upper Triassic Chugwater Group (@c)
- Jurassic and Triassic Nugget Sandstone (J@n, Jl)
- Middle-Upper Jurassic Twin Creek Limestone, Preuss and Stump fms. (Jst, Ju)
- Lower Cretaceous Thermopolis Shale (Kmt)
- Upper Cretaceous Mowry Shale (Kmt)
- Lower Cretaceous Gannett Group (Kg)
- Lower Cretaceous Bear River Formation (Kbr)
- Lower Cretaceous Aspen Shale (Ka)
- Lower Cretaceous Cokeville, Quealy, and Sage Junction formations (Kss)
- Upper Cretaceous Frontier Formation (Kf)
- Upper Cretaceous Adaville Formation (Kav)
- Upper Cretaceous Hilliard Shale (Kh)
- Upper Cretaceous Steele Shale (Ks, Ksn)
- Upper Cretaceous Cody Shale (Kc)
- Upper Cretaceous Baxter Shale (Kb)
- Upper Cretaceous Mesaverde Formation/Group (Kmv)
- Upper Cretaceous Almond Formation (Kal)
- Upper Cretaceous Ericson Formation (Ke)
- Upper Cretaceous Rock Springs Formation (Kr)
- Upper Cretaceous Baxter Shale (Kb)
- Upper Cretaceous Lewis Shale (Kle, Kfl)
- Upper Cretaceous Fox Hills Sandstone (Kfh, Kfl)
- Upper Cretaceous Medicine Bow Formation (Kmb)
- Upper Cretaceous and Paleocene Evanston Formation (TKe)
- Paleocene Fort Union Formation (Tfu)
- Pliocene and Eocene Fowkes Formation (Tf)
- Late Miocene/Early Pliocene Salt Lake Formation (Tsl)
- Cambrian Ute Formation, Blacksmith Limestone and Nounan Formation (C)
- Ordovician Fish Haven Dolomite (O)

The Construction Contractor will conduct preconstruction surveys per recommendations in Attachment J-2 in these rock units. Pedestrian surveys and/or spot-checking of these units will be conducted prior to and during construction or ground-disturbing activity, depending on the amount of groundcover in each area. Although many of these geologic units are mapped as being exposed on the surface, the bedrock may be covered by thin to deep soils, colluvium, alluvium, or eolian deposits and/or may be well vegetated. Only exposed bedrock can be definitively evaluated for having potential for paleontological resources. Generally, the only way to determine whether bedrock is exposed is by pedestrian survey, although detailed aerial photographs can sometimes be used. The identification of PFYC Class 3 areas that will be subject to preconstruction surveys will be based on the detailed recommendations for each rock unit found in Attachment J-2, and by analyzing recent aerial imagery prior to field work. The specific MPs along the proposed route where each of these PFYC Class 3 rock units will be encountered are presented in Attachment J-1.

Based on preconstruction surveys and the level of disturbance described in Section 7.0, the Construction Contractor will identify areas proposed for monitoring during ground-disturbing activities. These areas will be mapped by the Construction Contractor and shown on Volume II – Map Sets 1 and 2 of the POD.

The Construction Contractor will also conduct preconstruction surveys of the Paleocene Fort Union Formation, on Segment 2 between MPs 63 and 80 and on Segment 4 between MPs 24.4 and 25.8, on BLM-managed land. Although currently rated as PFYC 3, this rock unit has yielded a very important flora and fauna and will therefore be subject to field surveys.

PFYC Class 1 and 2 rock units, including quaternary unconsolidated sediments also occur along the Project route. These units have a low paleontological sensitivity and do not require preconstruction surveys.

7.0 PALEONTOLOGICAL STIPULATIONS AND METHODS

7.1 Monitoring and Mitigation Procedures for Paleontological Resource Protection during Construction – General

The BLM has specific assessment and management guidelines in place for the protection of vertebrate fossil resources on public lands. In addition, statutes exist for protecting fossil resources on lands managed by the states of Wyoming and Idaho. These guidelines can be found above in Section 3 – Regulatory Framework. When fossil material (vertebrate, invertebrate, plant, or trace) is likely to be encountered during ground disturbance associated with construction, the following paleontological monitoring and mitigation resource protection protocols will be followed.

7.1.1 Monitoring

The purpose of the monitoring program is to protect scientifically significant paleontological resources by documenting and collecting identifiable fossils that are found during construction. This includes monitoring of ground-disturbing activity where fossil-bearing rock could be disturbed as defined by analysis of existing data and the results of preconstruction surveys. In sedimentary units established as highly paleontologically significant (PFYC 4 or 5), a qualified PRM should be present as

specified in Section 5.0 – Paleontological Resources Team. In geologic units classified as moderately significant (PFYC 3), a paleontological monitor will perform spot-checks of debris during construction. The location of spot-checks will be based on the lithology of the unit.

During construction in areas requiring monitoring, a PRM will follow earth-moving equipment and examine excavated material and excavated areas for evidence of fossil resources. The PRM may conduct a follow-up survey through sensitive areas after weather events such as rain and strong winds to reaffirm the presence or lack of fossil material (wind and rain frequently expose fossil material that may have been missed during the initial evaluation).

If significant fossil material is found, the PRM will have the authority to halt construction in the vicinity of the find, and will notify the PRS. The PRS will notify the Construction Contractor's Environmental Manager and CIC. The CIC will notify and coordinate with the BLM Paleontologist. The Construction Contractor's Environmental Manager will notify the Companies' Environmental Manager(s). If not already done so by the PRM, the PRS will halt construction within the immediate vicinity of the significant fossil material to allow further evaluation of exposed fossil resources by the PRM. If a small fossil is discovered, the PRM will immediately excavate and evaluate it through coordination with the PRS, and construction will be allowed to proceed. If a complex fossil is discovered, the area will be marked for temporary avoidance. The PRS, in cooperation with the CIC and BLM Paleontologist, will arrange for sampling and/or immediate removal. Construction at the site may resume upon receipt of written approval from the BLM Paleontologist.

Some significant vertebrate fossil resources are small and may not be readily apparent during construction activity. If microfossils (e.g., mammal teeth) are observed by the PRT within geologic units in the construction area, matrix samples will be collected by the PRMs while the rock is exposed on the debris pile for further fossil recovery off-site. An adequate sample size will be determined by the PRS through coordination with the BLM Paleontologist. The sampling and testing of rock debris will be done expeditiously during construction, to avoid delays, and in a safe manner that does not impede work or traffic.

Based on the characteristics of the transmission line system with long spans between structures and typical methods used for construction, the following approach will be used by the Construction Contractor in conjunction with the CIC and as approved by BLM to determine specific locations for monitoring on federally managed lands as well as state-owned lands.

- **Structure Sites:** Transmission line structures will involve augered holes for foundations or direct embedment. Bedrock is generally pulverized by the auger in the process of digging the hole. As a result, if subsurface fossil resources were to be encountered during construction, it is very likely that they would be unrecognizable. The Construction Contractor will conduct test monitoring at the beginning of the Project in the first PFYC Class 4/5 rock unit encountered on public land. If the rock (and any contained fossils) is indeed pulverized by the construction process, no further monitoring will be required. If recognizable fossils can be detected, monitoring may be required in that rock unit.

- **Roads:** Section 8.0 of Appendix L – Framework Traffic and Transportation Management Plan describes the access road disturbance types planned for the Project. Each has a different potential to affect paleontological resources.
  - No New Disturbance (Type D1) – No new disturbance will include paved highways and other developed roadways, included well-traversed and established gravel or unsurfaced roadways that do not require improvements.
  - Overland Drive-and-Crush (Type D2) - Drive-and-crush will occur in terrain that is relatively level to gently rolling and has low growing grasses and shrubs. Vegetation will be crushed but not cropped. Soil will be compacted, but no surface soil will be removed. Drive-and-crush will not have a significant effect on paleontological resources. Drive and crush locations will be identified on Volume II maps by the Construction Contractor. No monitoring is required.
  - Overland Clear-and-Cut (Type D3) – Clear-and-cut involves mowing or grubbing of all vegetation in order to improve or provide suitable access for equipment. Methods for removal of vegetation will include mowing (brush hog flail type mower), hand clearing with small tools such as loppers and chain saws, and back dragging a bulldozer blade above the surface of the soil to remove surface vegetation. The vegetation roots will be left in place wherever practical. Clear-and-cut will not have a significant effect on paleontological resources. Clear-and-cut locations will be identified on Volume II maps by the Construction Contractor. No monitoring is required.
  - Blade-and-Shape (Type D4) – Blade-and-shape roads in hilly or steep terrain may require cuts that could expose rock and affect paleontological resources. The Construction Contractor will identify the areas along roads on federally managed lands in PFYC Class 4/5 areas on the maps in Volume II. The mapped locations will be subject to paleontological monitoring. Blade-and-shape roads in relatively flat terrain will not require monitoring.
- **Temporary Multipurpose Areas, Pulling and Tensioning Sites and Fly Yards:** The multipurpose areas serve as material storage yards, structure work sites, batch sites, helicopter landing sites, etc. To serve these purposes these sites are located in areas with flat terrain. Minimal blading and shaping will be necessary. No monitoring is required.
- **Substations:** Substations are located in areas of variable terrain. Unless the substation is an expansion on flat terrain, monitoring will be required on federally managed lands in PFYC Class 4/5 areas during site preparation activities.
- **Regeneration Stations** – Regeneration sites are located in areas of flat terrain. No monitoring is required.

7.1.2 Mitigation

The purpose of the mitigation program is to protect all scientifically significant paleontological resources that are discovered during construction. This includes those fossils which are found during monitoring phases of the project, as well as unanticipated discoveries made anywhere in the construction area by any Project personnel. All phases of the mitigation are to be supervised by a PRS and will include the following procedures:

1. To prevent damage to known paleontologically sensitive resources and to prevent construction delays, avoidance, salvage, or rerouting recommendations will be made well before the beginning of construction.
2. Specific boundaries of sensitive formations (PFYC Class 3, 4 or 5) or known fossil localities will be delineated on the maps in Volume II of the POD and identified as Environmentally Sensitive Areas to inform the Companies and Construction Contractor personnel of areas requiring continuous monitoring or spot-checks.
3. Prior to the commencement of construction, all construction personnel will be made aware that scientifically significant fossils occur in the area, and personnel will be instructed not to remove or touch them if they are found. In addition, they will be made aware that they must immediately contact the PRS or PRM if any subsurface fossil bones or other potential fossils are exhumed during construction. If no paleontological personnel are in the vicinity, they will be given adequate time to reach the site.

   Indirect impacts to fossil resources outside the construction area are possible. All workers will be advised that access to adjacent lands is restricted and that fossil resources may be found nearby. Unauthorized collection by workers or the general public may occur due to the increased access to the area. All workers will be advised that unauthorized collection of fossils is illegal. This is a law enforcement issue and will be handled accordingly.
4. Inadvertent discoveries are defined as fossils or fossil concentrations that were not anticipated in the monitoring and mitigation plan because their occurrence was considered to be unlikely. Construction Contractor personnel will be made aware that the PRS and/or PRM must be contacted immediately if vertebrate or significant fossil material is unearthed during construction, even in areas where monitoring is not required. Construction will temporarily halt in the immediate area of vertebrate fossil discovery until it can be evaluated. Work will be allowed to continue within 100 feet of the area of discovery without interruption unless further vertebrate fossil material is encountered. The BLM Paleontologist will be directly involved in the decisions regarding recovery of fossils and determining when construction may proceed at the fossil discovery site. Salvaging and removal of fossil specimens will be conducted as efficiently as possible to avoid delays to construction, while taking appropriate measures to avoid damaging the fossils.
5. The PRS or PRMs will be given adequate time to reach the site of an inadvertent discovery of significant fossils. In addition, any vertebrate fossil discovery on federal lands will be reported immediately to the CIC.
6. All significant fossils found in the construction area will be documented, by the PRMs, in field notebooks as well as on specimen tags. The Universal Transverse Mercator (UTM) and latitude/longitude coordinates of each fossil locality will be recorded with a global position system (GPS) unit. The types/taxa/numbers of fossils observed and or collected will be recorded in field notes as well as on individual specimen identification tags/field labels. The lithology and any other pertinent sedimentological information will be included in the locality description,

as well as the geologic unit from which it was collected, the collector, and date. All fossils collected will be stabilized as necessary prior to their removal from the site.

7.2 Postconstruction

7.2.1 Preparation and Identification of Fossils

After removal from the construction area, all fossils collected during the monitoring and mitigation phases of the Project will require preparation and identification. The PRS will be responsible for preparing small- to medium-sized vertebrate fossil material. Special arrangements will be made for preparation of large specimens, such as dinosaurian fossils. In addition, plant or invertebrate fossils also will be collected if scientifically important.

Preparation of fossils involves cleaning (including rock removal) and stabilizing (treating with appropriate preservatives and assembly). Identification of fossils involves their assignment to a known (or possibly new) taxon. This may involve comparisons with specimens in museum collections and literature review. Numbering, boxing, and storage will be done as prescribed by the designated curation facilities. Fossil localities encountered in the field survey, as well as during construction, will be plotted on United States Geological Survey 7.5-minute quadrangle sheets and on geographic information systems (GIS) maps. A set of field and laboratory records as well as photographs with an itemized specimen inventory will be compiled and filed at the curation facilities.

7.2.2 Curation Facilities

The Construction Contractor is responsible for identifying curation facilities. These facilities are chosen by their proximity to the fossil site, by the PRS, or by the federal or state agency that has authority over the site or that portion of the transmission line route. Curation agreements with potential repositories for fossils found during construction must be in place prior to construction in accordance with BLM paleontology permit regulations. Potential institutions most appropriate for curation of fossil materials from this Project are the University of Wyoming Collection of Fossil Vertebrates and the Idaho Museum of Natural History.

7.2.3 Final Report

Upon completion of construction and evaluation of fossil samples collected, the Construction Contractor's PRS will compile a final report. Included in this report will be:

1. Description of fieldwork, including preconstruction, monitoring and mitigation planning;
2. Geologic history and stratigraphy of the formations along the route.
3. Survey results and evaluation of the formations impacted, with a description of fossil localities by formation;
4. Significance of recovered paleontological resources with regard to other known localities;
5. Selected bibliography of formations and paleontological resources;

6. Appendix of BLM paleontology locality forms with maps and photographs. A confidential fossil locality appendix will be bound separately from the main report and will be distributed only to the BLM Field Office Paleontology Coordinators, the BLM Regional Paleontologists, and the curation facilities. This requirement is for the protection of sensitive paleontological resources in or near the Project area;
7. Appendix of an itemized specimen inventory of collected samples with the curatorial facility accession numbers if applicable; and
8. Appendix of collection permits, curation agreements, and other appropriate communications.

Copies of the final report will be submitted for review and approval to the BLM as well as other applicable federal and state agencies. Additional copies will be provided to all agencies after the final report has been approved by appropriate federal and state officials.

8.0 ENVIRONMENTAL PROTECTION MEASURES

Implementation of the following EPMs will avoid or reduce impacts paleontological resources associated with construction, operation and maintenance of the Project. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

PALEO-1 If significant fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the Authorized Officer. The site will be protected to reduce the risk of damage to fossils and context. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer.

PALEO-2 Paleontological resources (as defined by omnibus Public Land Management Act – Paleontological Resources Preservation Section) on federally managed land shall be managed and protected using scientific principles and expertise. Appropriate plans for inventory, monitoring, and the scientific and educational use of these resources shall be developed in accordance with applicable agency laws, regulations and policies.

PALEO-3 Where fossil-bearing sediments are exposed by construction, the sediments must be covered with a 4-inch layer of soil where feasible to reduce unauthorized removal or disturbance of resources.

PALEO-4 To ensure compliance with the Paleontological Resources Preservation Section of the Public Land Management Act, the Companies' Paleontological Resources Protection Plan for the Project (see PALEO-2) shall specify that:

- Monitoring of excavation and grading in sensitive sediments, especially access roads and tower sites, must occur when construction is near or in those geologic formations.
- Monitoring of excavations in sensitive sediments, screening the excavated spoils, and processing of bulk sediment samples for microinvertebrate and microvertebrate fossils must occur where there is a significant potential for data recovery from those spoils.
- Monitoring must be performed by a qualified paleontologist and in consultation with a designated paleontologist in each state, NF, or BLM district. The Authorized Officer will designate the appropriate paleontologist depending on project location.

Note that this is an agency imposed measure.

PALEO-5 Field surveys will be completed prior to surface disturbance in areas with potential fossil yields of Class 3, 4, or 5, in accordance with criteria stated in the Paleontological Resources Protection Plan and as required by the land management agency.

Note that this is an agency imposed measure.

9.0 LITERATURE CITED

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ATTACHMENT J-1
CONSECUTIVE MILEPOST TABLE

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
Windstar to Aeolus, Segment 1W(a)											
WY	Converse	Glenrock	0	1.4	1.4	Kl	Lance Fm.	5			1.4
			1.4	1.6	0.2	Qs	Q	2	0.2		
			1.6	1.9	0.3	Kl	Lance Fm.	5			0.3
			1.9	2.3	0.4	Qa	Quaternary alluvium	2	0.4		
			2.3	6.4	4.1	Kl	Lance Fm.	5			4.1
		Parkerton	6.4	9	2.6	Kfh	Fox Hills Fm.	3		2.6	
			9	10	1	Kmv	Mesaverde Fm.	3		1	
			10	10.9	0.9	Qa	Quaternary alluvium	2	0.9		
			10.9	13.5	2.6	Kmv	Mesaverde Fm.	3		2.6	
		Protsman's Knob	13.5	14.2	0.7	Kc	Cody Shale	3		0.7	
		Banner Mountain	14.2	15.7	1.5	Qa	Quaternary alluvium	2	1.5		
			15.7	15.9	0.2	Kc	Cody Shale	3		0.2	
			15.9	16.3	0.4	Qa	Quaternary alluvium	2	0.4		
			16.3	16.8	0.5	Kc	Cody Shale	3		0.5	
			16.8	17.9	1.1	Qa	Quaternary alluvium	2	1.1		
			17.9	18.1	0.2	Kf	Frontier Fm.	3		0.2	
			18.1	18.3	0.2	Kmt	Mowry Shale and Thermopolis Fm.	3		0.2	
			18.3	18.4	0.1	KJ	Morrison and Cloverly	5			0.1
			18.4	18.6	0.2	Qa	Quaternary alluvium	2	0.2		
			18.6	20	1.4	P&c	Casper Fm.	3		1.4	
			20	20.5	0.5	Pzr	Paleozoic rocks	3		0.5	
			20.5	21.2	0.7	Qa	Quaternary alluvium	2	0.7		
			21.2	21.7	0.5	P&c	Casper Fm.	3		0.5	
			21.7	22	0.3	Pzr	Paleozoic rocks	3		0.3	
	Natrona		22	24.3	2.3	Wgn	Granite Gneiss	1	2.3		
		Reno Hill	24.3	27.3	3	Tmu	Miocene upper	5			3
		Ice Cave Mountain	27.3	32.5	5.2	Wg	granite	1	5.2		
		Bates Creek Reservoir	32.5	40.4	7.9	Twru	White River Fm., upper cgl	5			7.9
	Carbon	Moss Agate Reservoir	40.4	44.8	4.4	Twr	White River Fm.	5			4.4
		Walker Draw NW	44.8	53.2	8.4	Twdr	Wind River Fm.	5			8.4
		Cameron Creek	53.2	55.8	2.6	Ks	Steel Shale	3		2.6	
			55.8	56.8	1	Qa	Quaternary alluvium	2	1		

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Carbon		56.8	57.2	0.4	Ks	Steele Shale	3		0.4	
			57.2	57.9	0.7	Kn	Niobrara Fm.	5			0.7
			57.9	58.1	0.2	Kf	Frontier Fm.	3		0.2	
			58.1	59.7	1.6	KJs	Sundance, Morrison and Cloverly	5			1.6
			59.7	62	2.3	@c	Chugwater Fm.	3		2.3	
			62	63	1	@Pg	Goose Egg Fm.	3		1	
		Windy Hill	63	63.3	0.3	PM		3		0.3	
			63.3	66.5	3.2	@Pg	Goose Egg Fm.	3		3.2	
		Difficulty	66.5	67.8	1.3	@c	Chugwater Fm.	3		1.3	
			67.8	69.1	1.3	@Pg	Goose Egg Fm.	3		1.3	
			69.1	70.4	1.3	@c	Chugwater Fm.	3		1.3	
			70.4	70.7	0.3	KJs	Sundance, Morrison and Cloverly fms.	5			0.3
			70.7	71.2	0.5	Kmt	Mowry Shale and Thermopolis Fm.	3		0.5	
			71.2	71.8	0.6	KJs	Sundance, Morrison and Cloverly fms.	5			0.6
			71.8	72.7	0.9	Kmt	Mowry Shale and Thermopolis Fm.	3		0.8	
			join with 1W(c)	**Total**	**73**				**13.9**	**25.9**	**32.8**
Dave Johnston to Heward to Shirley Basin, Segment 1W(c)											
WY	Converse	Glenrock	0	0.8	0.8	Qa	Quaternary alluvium	2	0.8		
			0.8	5.7	4.9	Kl	Lance Fm.	5			4.9
		Parkerton	5.7	6.7	1	Kfh	Fox Hills Fm.	3		1	
			6.7	7.2	0.5	Kmv	Mesaverde Fm.	3		0.5	
			7.2	9.1	1.9	Kc	Cody Shale	3		1.9	
			9.1	9.5	0.4	P&c	Casper Fm.	3		0.4	
			9.5	10	0.5	Qa	Quaternary alluvium	2	0.5		
			10	10.1	0.1	@Pg	Goose Egg Fm.	3		0.1	
			10.1	10.5	0.4	Qa	Quaternary alluvium	2	0.4		
		Protsman's Knob	10.5	12.5	2	Kc	Cody Shale	3		2	
		Banner Mountain	12.5	15.9	3.4	Qa	Quaternary alluvium	2	3.4		
			15.9	16.2	0.3	Kf	Frontier Fm.	3		0.3	
			16.2	16.4	0.2	Kmt	Mowry Shale and Thermopolis Fm.	3		0.2	

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Converse	Banner Mtn	16.4	16.6	0.2	KJ	Morrison and Cloverly fms.	5			0.2
			16.6	16.9	0.3	Qa	Quaternary alluvium	2	0.3		
			16.9	18.5	1.6	P&c	Casper Fm.	3		1.6	
			18.5	18.8	0.3	Pzr	Paleozoic rocks	3		0.3	
			18.8	19	0.2	Wgn	Granite Gneiss	1	0.2		
			19	19.7	0.7	Qa	Quaternary alluvium	2	0.7		
			19.7	20.1	0.4	P&c	Casper Fm.	3		0.4	
			20.1	20.5	0.4	Pzr	Paleozoic rocks	3		0.4	
	Natrona		20.5	22.6	2.1	Wgn	Granite Gneiss	1	2.1		
		Reno Hill	22.6	25	2.4	Tmu	Miocene rocks, upper	5			2.4
		Ice Cave Mountain	25	31.2	6.2	Wg	granite	1	6.2		
	Carbon	Bates Creek Reservoir	31.2	39	7.8	Twru	White River Fm., upper cgl.	5			7.8
		Moss Agate Reservoir	39	43.5	4.5	Twr	White River Fm.	5			4.5
		Walker Draw NW	43.5	52.9	9.4	Twdr	Wind River Fm.	5			9.4
			52.9	54.1	1.2	Ks	Steele Shale	3		1.2	
			54.1	54.8	0.7	Qa	Quaternary alluvium	2	0.7		
			54.8	55.7	0.9	Ks	Steele Shale	3		0.9	
		Cameron Creek	55.7	59.8	4.1	Kn	Niobrara Fm.	5			4.1
			59.8	59.9	0.1	Kf	Frontier Fm.	3		0.1	
			59.9	60	0.1	Kmt	Mowry Shale and Thermopolis Fm.	3		0.1	
			60	61.3	1.3	Qa	Quaternary alluvium	2	1.3		
			61.3	64.5	3.2	@c	Chugwater Fm.	3		3.2	
		Windy Hill	64.5	64.6	0.1	@Pg	Goose Egg Fm.	3		0.1	
			64.6	65.4	0.8	@c	Chugwater Fm.	3		0.8	
		Difficulty	65.4	66.9	1.5	@Pg	Goose Egg Fm.	3		1.5	
			66.9	69.8	2.9	@c	Chugwater Fm.	3		2.9	
			69.8	71.7	1.9	@Pg	Goose Egg Fm.	3		1.9	
			71.7	72.7	1	@c	Chugwater Fm.	3		1	
			72.7	73	0.3	KJs	Sundance, Morrison, and Cloverly fms.	5			0.3
		Windy Hill	73	73.5	0.5	Kmt	Mowry Shale and Thermopolis Fm.	3		0.5	
			73.5	73.8	0.3	Kf	Frontier Fm.	3		0.3	
			73.8	74.4	0.6	Kn	Niobrara Fm.	5			0.6

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Carbon	Windy Hill	74.4	75.1	0.7	Qa	Quaternary alluvium	2	0.7		
			75.1	75.7	0.6	Ks	Steele Shale	3		2.6	
				Total	**76**				**17.3**	**26.2**	**34.2**
Aeolus to Creston, Segment 2											
WY	Carbon	Difficulty	0	0.5	0.5	Kn	Niobrara Fm.	5			0.5
			0.5	1.5	1	Qa	Quaternary alluvium	2	1		
			1.5	2.5	1	Ks	Steele Shale	3		1	
			2.5	18.7	16.2	Tha	Hanna Fm.	5			16.2
		TE Ranch, Elmo	18.7	20	1.3	TKf	Ferris Fm.	5			1.3
		Tenmile Spring	20	20.3	0.3	Qa	Quaternary alluvium	2	0.3		
		Dana	20.3	24.5	4.2	TKf	Ferris Fm.	5			4.2
		Walcott	24.5	25.1	0.6	Kmb	Medicine Bow Fm.	3		0.6	
			25.1	26	0.9	Tm	Miocene rocks	5			0.9
			26	26.3	0.3	Kmb	Medicine Bow Fm.	3		0.3	
			26.3	27.5	1.2	Kle	Lewis Shale	3		1.2	
			27.5	28.1	0.6	Kmv	Mesaverde Fm.	3		0.6	
			28.1	29.1	1	Kle	Lewis Shale	3		1	
			29.1	30	0.9	Kmb	Medicine Bow Fm.	3		0.9	
			30	30.8	0.8	Tm	Miocene rocks	5			0.8
			30.8	31.9	1.1	Qa	Quaternary alluvium	2	1.1		
			31.9	32.6	0.7	Tm	Miocene rocks	5			0.7
			32.6	32.8	0.2	Kmv	Mesaverde Fm.	3		0.2	
			32.8	33.1	0.3	Tm	Miocene rocks	5			0.3
			33.1	33.4	0.3	Kmv	Mesaverde Fm.	3		0.3	
			33.4	33.8	0.4	Tm	Miocene rocks	5			0.4
		Ft. Steele	33.8	37.3	3.5	Ks	Steele Shale	3		3.5	
			37.3	37.6	0.3	Qa	Quaternary alluvium	2	0.3		
		Savage Ranch	37.6	41.5	3.9	Ksn	Steele Shale and Niobrara Fm.	3		3.9	
		Smith Draw East	41.5	43.8	2.3	Qa	Quaternary alluvium	2	2.3		
		Sinclair	43.8	47.7	3.9	Ksn	Steele Shale and Niobrara Fm.	3		3.9	
		Rawlins	47.7	48.4	0.7	Qa	Quaternary alluvium	2	0.7		
		Smith Draw West	48.4	48.6	0.2	Ksn	Steele Shale and Niobrara Fm.	3		0.2	
			48.6	49.5	0.9	Qt	Quaternary	2	0.9		

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Carbon	Smith Draw West	49.5	52	2.5	Ksn	Steele Shale and Niobrara Fm.	3		2.5	
		Coal Mine Ridge	52	56.9	4.9	Kmv	Mesaverde Fm.	3		4.9	
			56.9	59.2	2.3	Kle	Lewis Shale	3		2.3	
		Separation Peak	59.2	63.5	4.3	Kl	Lance Fm.	5			4.3
			63.5	65.8	2.3	Tfu	Fort Union Fm.	3		2.3	
			65.8	66.1	0.3	Qa	Quaternary alluvium	2	0.3		
		Riner	66.1	67.3	1.2	Tfu	Fort Union Fm.	3		1.2	
	Sweetwater		67.3	68	0.7	Qa	Quaternary alluvium	2	0.7		
			68	71.2	3.2	Tfu	Fort Union Fm.	3		3.2	
			71.2	71.6	0.4	Qa	Quaternary alluvium	2	0.4		
		Creston Junction	71.6	73.9	2.3	Tfu	Fort Union Fm.	3		2.3	
			73.9	76.4	2.5	Ql	Quaternary	2	2.5		
			76.4	77.3	0.9	Tfu	Fort Union Fm.	3		0.9	
			77.3	77.6	0.3	Qa	Quaternary alluvium	2	0.3		
			77.6	80.2	2.6	Tfu	Fort Union Fm.	3		2.6	
	Carbon	Creston	80.2	85.9	5.7	Twm	Wasatch Fm., main body	5			5.7
			85.9	86.4	0.5	Qa	Quaternary alluvium	2	0.5		
		Wamsuttter	86.4	90.3	3.9	Twm	Wasatch Fm., main body	5			3.9
	Sweetwater	Eightmile Lake	90.3	91.1	0.8	Ql	Quaternary landslide debris	2	0.8		
				Total	**91**				**12.1**	**39.8**	**39.2**
Creston to Anticline, Segment 3											
WY	Sweetwater	Eightmile Lake	0	2.1	2.1	Ql		2	2.1		
		Wamsutter	2.1	2.3	0.2	Twm	Wasatch Fm., main body	5			0.2
		Eightmile Lake	2.3	2.7	0.4	Tglu	Green River, Luman Tongue	5			0.4
			2.7	2.9	0.2	Twm	Wasatch Fm., main body	5			0.2
		Red Desert SE	2.9	6.8	3.9	Tgt	Green River, Tipton Shale	5			3.9
			6.8	7.3	0.5	Tgw	Green River, Wilkins Peak	5			0.5
		Red Desert SW	7.3	11.6	4.3	Twc	Wasatch Fm., Cathedral Bluffs tongue	5			4.3
			11.6	13.5	1.9	Tgw	Green River, Wilkins Peak	5			1.9
			13.5	14.3	0.8	Tgt	Green River, Tipton Shale	5			0.8
		JO Dugway	14.3	15.9	1.6	Tgw	Green River, Wilkins Peak	5			1.6
			15.9	17.7	1.8	Tgt	Green River, Tipton Shale	5			1.8
			17.7	18.3	0.6	Twn	Wasatch Fm., Niland tongue	5			0.6

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Sweetwater	JO Dugway	18.3	18.8	0.5	Tglu	Green River, Luman Tongue	5			0.5
		Tipton	18.8	21.1	2.3	Twm	Wasatch Fm., main body	5			2.3
			21.1	21.3	0.2	Qs	Quaternary dune sand	2	0.2		
			21.3	22	0.7	Twm	Wasatch Fm., main body	5			0.7
			22	24.4	2.4	Qs	Quaternary dune sand	2	2.4		
		Desert Springs	24.4	26.5	2.1	Twm	Wasatch Fm., main body	5			2.1
			26.5	28.3	1.8	Qs	Quaternary dune sand	2	1.8		
		Bitter Creek NE	28.3	34.5	6.2	Twm	Wasatch Fm., main body	5			6.2
		Bitter Creek NW	34.5	39.9	5.4	Tfu	Fort Union Fm.	3		5.4	
			39.9	41.4	1.5	Kl	Lance Fm.	5			1.5
			41.4	42	0.6	Kfl	Lewis Shale and Fox Hills Fm.	3	0.6		
			42	42.6	0.6	Qa	Quaternary alluvium	2	0.6		
			42.6	42.8	0.2	Kfl	Lewis Shale and Fox Hills Fm.	3		0.2	
			42.8	44.2	1.4	Qa	Quaternary alluvium	2	1.4		
			44.2	46.1	1.9	Kfl	Lewis Shale and Fox Hills Fm.	3		1.9	
				Total	**46**				**9.1**	**7.5**	**29.5**
Jim Bridger to Anticline - Segment 3A											
WY	Sweetwater	Bitter Creek NW	0	0.4	0.4	Kal	Almond Fm.	3		0.4	
			0.4	5	4.6	Kfl	Lewis Shale and Fox Hills Fm.	3		4.6	
				Total	**5**						
Anticline to Populus, Segment 4											
WY	Sweetwater	Point of Rocks	0	1.1	1.1	Kfl	Lewis Shale and Fox Hills Fm.	3		1.1	
			1.1	4.4	3.3	Kal	Almond Fm.	3	**5**	3.3	
			4.4	4.6	0.2	Ke	Ericson Fm.	3		0.2	
			4.6	5.2	0.6	Kal	Almond Fm.	3		0.6	
		Thayer Junction	5.2	7	1.8	Ke	Ericson Fm.	3		1.8	
			7	10.3	3.3	Kr	Rock Springs Fm.	3		3.3	
			10.3	10.9	0.6	Qa	Quaternary alluvium	2	0.6		
		North Baxter	10.9	14.4	3.5	Kr	Rock Springs Fm.	3		3.5	
			14.4	17.4	3	Kbl	Blair Fm.	3		3	
		Reliance	17.4	20.5	3.1	Kba	Baxter Shale	3		3.1	

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Sweetwater	Reliance	20.5	21.8	1.3	Kbl	Blair Fm.	3		1.3	
			21.8	23.3	1.5	Kr	Rock Springs Fm.	3		1.5	
			23.3	23.8	0.5	Ke	Ericson Fm.	3		0.5	
			23.8	24.4	0.6	Kal	Almond Fm.	3		0.6	
			24.4	25.8	1.4	Tfu	Fort Union Fm.	3		1.4	
			25.8	26.3	0.5	Qa	Quaternary alluvium	2	0.5		
		Pilot Butte	26.3	29.4	3.1	Twm	Wasatch Fm., main body	5			3.1
			29.4	30.4	1	Tgwt		5			1
		Scott Spring	30.4	40	9.6	Tgl	Green River, Laney Shale	5			9.6
		Clay Buttes SW	40	40.3	0.3	Qa	Quaternary alluvium	2	0.3		
		Chrisman Ranch	40.3	41.1	0.8	Tgl	Green River, Laney Shale	5			0.8
		Big Island Bridge	41.1	51	9.9	Tb	Bridger Fm.	5			9.9
		Stevens Flat	51	51.2	0.2	Tgl	Green River, Laney Shale	5			0.2
			51.2	52.5	1.3	Qa	Quaternary alluvium	2	1.3		
			52.5	52.6	0.1	Tgl	Green River, Laney Shale	5			0.1
		Blue Point	52.6	64.1	11.5	Tb	Bridger Fm.	5			11.5
		Lombard Buttes	64.1	65.1	1	Qs	Quaternary dune sand	2	1		
		Whiskey Buttes	65.1	65.5	0.4	Tb	Bridger Fm.	5			0.4
			65.5	65.8	0.3	Qs	Quaternary dune sand	2	0.3		
	Lincoln	Fontenelle SE	65.8	72.4	6.6	Tb	Bridger Fm.	5			6.6
			72.4	72.8	0.4	Tgl	Green River, Laney Shale	5			0.4
			72.8	74	1.2	Tb	Bridger Fm.	5			1.2
		Cow Hollow Creek	74	77	3	Tgl	Green River, Laney Shale	5			3
			77	77.9	0.9	Tb	Bridger Fm.	5			0.9
		Opal	77.9	83.1	5.2	Tgl	Green River, Laney Shale	5			5.2
			83.1	83.4	0.3	Qs	Quaternary dune sand	2	0.3		
			83.4	84.7	1.3	Tb	Bridger Fm.	5			1.3
			84.7	87.2	2.5	Tgl	Green River, Laney Shale	5			2.5
		Willow Springs	87.2	88.4	1.2	Twm	Wasatch Fm., main body	5			1.2
			88.4	90.6	2.2	Tgw	Green River, Wilkins Peak	5			2.2
			90.6	92	1.4	Twg	New Fork tongue of Wasatch and Fontanelle tongue of GR	5			1.4
			92	92.8	0.8	Kg	Gannet Group	3		0.8	
			92.8	93	0.2	Kbr	Bear River Fm.	3		0.2	

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Lincoln		93	93.5	0.5	Twg	New Fork tongue of Wasatch and Fontanelle tongue of GR	5			0.5
		Kemmerer	93.5	95.1	1.6	Ka	Aspen Shale	3		1.6	
			95.1	97	1.9	Kf	Frontier Fm.	3		1.9	
		Sublet	97	100.8	3.8	Kh	Hilliard Shale	3		3.8	
		Sublet	100.8	101.3	0.5	Kav	Adaville Fm.	3		0.5	
			101.3	103.3	2	Kh	Hilliard Shale	3		2	
			103.3	103.7	0.4	Kf	Frontier Fm.	3		0.4	
			103.7	103.8	0.1	Tke	Evanston Fm.	3		0.1	
			103.8	104.1	0.3	Pp	Phosphoria Fm.	3		0.3	
		Kemmerer Reservoir	104.1	106.5	2.4	Twd	Wasatch, diamictite and ss	5			2.4
			106.5	107	0.5	(water)			0.5		
			107	107.2	0.2	Qa	Quaternary alluvium	2	0.2		
			107.2	107.8	0.6	Twm	Wasatch Fm., main body	5			0.6
			107.8	108.6	0.8	Qls	Quaternary landslide debris	2	0.8		
		Kemmerer Reservoir	108.6	110.5	1.9	Tgrw	Green River and Wasatch fms.	5			1.9
			110.5	111	0.5	Qls	Quaternary landslide debris	2	0.5		
		The Rock Slide	111	116	5	Tgrw	Green River and Wasatch fms.	5	5		
		Sublette Canyon	116	116.4	0.4	P&M	Wells and Amsden fms.	3		0.4	
			116.4	117.6	1.2	Qt	Quaternary gravel	2	1.2		
			117.6	118	0.4	@ad	Ankareh, Thaynes, Woodside, Dinwoody	3		0.4	
			118	118.8	0.8	J@n	Nugget Sandstone	3		0.8	
			118.8	119.7	0.9	Jst	Twin Creek Limestone, Preuss and Stump fms.	3		0.9	
			119.7	119.8	0.1	Kg	Gannet Group	3		0.1	
		Cokeville	119.8	121.4	1.6	QTg	Pleistocene or Pliocene terrace gravel	2	1.6		
			121.4	122.2	0.8	Qa	Quaternary alluvium	2	0.8		
			122.2	122.9	0.7	Tf	Fowkes Fm.	3		0.7	
			122.9	123.5	0.6	Kss	Cokeville, Quealy, and Sage Junction fms.	3		0.6	

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
WY	Lincoln	Cokeville	123.5	123.9	0.4	Jst	Twin Creek Limestone, Preuss and Stump fms.	3		0.4	
			123.9	124.3	0.4	Kg	Gannet Group	3		0.4	
			124.3	124.4	0.1	Kss	Twin Creek Limestone, Preuss and Stump fms.	3		0.1	
			124.4	125	0.6	Qt	Quaternary terrace deposits	2	0.6		
			125	127.7	2.7	Qa	Quaternary alluvium	2	2.7		
			127.7	128	0.3	Tf	Fowkes Fm.	3		0.3	
			128	128.6	0.6	J@n	Nugget Sandstone	3		0.6	
		Boundary Ridge	128.6	129.4	0.8	Jst	Twin Creek Limestone, Preuss and Stump fms.	3		0.8	
			129.4	130.4	1	Tke	Evanston Fm.	3		1	
		Border	130.4	131.3	0.9	Qt		2	0.9		
			131.3	131.7	0.4	Twd	Wasatch, diamictite and ss	5			0.4
			131.7	132.2	0.5	Tsl	Salt Lake	3		0.5	
									19.1	**44.8**	**68.3**
							424.7 total miles in WY	**Totals**	**71.5**	**149.2**	**204**
ID	Bear Lake	Border	132.2	134.8	2.6	Ted	Wasatch Fm.	5			2.6
			134.8	135.2	0.4	Ju	Late Jurassic siltstone and shale	3		0.4	
			135.2	136.7	1.5	Qa	Quaternary alluvium	2	1.5		
		Pegram	136.7	140.7	4	Ju	Late Jurassic siltstone and shale	3		4	
			140.7	141	0.3	Jl	Early Jurassic limestone and sandstone	3		0.3	
			141	141.1	0.1	Qa	Quaternary alluvium	2	0.1		
			141.1	141.3	0.2	Ju	Late Jurassic siltstone and shale	3		0.2	
			141.3	141.8	0.5	Jl	Early Jurassic limestone and sandstone	3		0.5	
			141.8	142	0.2	Tru	Late Triassic shale and siltstone	3		0.2	
		Montpelier Canyon	142	145.9	3.9	TRl	Early Triassic siltsone and shale	3		3.9	
		Montpelier	145.9	149	3.1	Tpd	Pliocene sandstone and conglomerate	5			3.1
		Ovid	149	156	7	Qa	Quaternary alluvium	2	7		

Table J-1-1. Consecutive Mileposts along Proposed Gateway West Transmission Line, Showing Rock Units Encountered by Mile and Their Associated Paleontological Sensitivity (continued)

State	County	7.5' quad	MP In	MP Out	Miles	Formation Abbrev.	Formation Name	PFYC	Low (PFYC 1, 2)	Moderate (PFYC 3)	High (PFYC 4, 5)
ID	Bear Lake	Nounan	156	161.8	5.8	Tpd	Pliocene sandstone and conglomerate	5			5.8
		North Canyon	161.8	165.7	3.9	Z2s	Late Proterozoic sandstone and limestone	1	3.9		
	Franklin		165.7	169	3.3	C	Cambrian limestone and sandstone	3		3.3	
		Thatcher	169	174	5	O	Ordovician dolomite	3		5	
			174	175.6	1.6	Qpd	Late Pleistocene unconsolidated deposits	2	1.6		
			175.6	176.2	0.6	Qa	Quaternary alluvium	2	0.6		
		Thatcher Hill	176.2	179	2.8	Qpd	Late Pleistocene unconsolidated deposits	2	2.8		
			179	181	2	Tpd	Pliocene sandstone and conglomerate	5			2
		Treasureton	181	183.2	2.2	Z2s	Late Proterozoic sandstone and limestone	1	2.2		
	Bannock	Swan Lake	183.2	187.2	4	Tpd	Pliocene sandstone and conglomerate	5			4
			187.2	189.4	2.2	C		3		2.2	
			189.4	189.8	0.4	Z2s	Late Proterozoic sandstone and limestone -Brighman Quartzite	1	0.4		
		Downey East	189.8	196	6.2	Tpv	Pliocene sandstone and conglomerate	5			6.2
		Downey West	196	200.2	4.2	Qs	Quaternary loess	2	4.2		
							68 miles in ID		**24.3**	**20**	**23.7**

ATTACHMENT J-2
EVALUATION OF EXISTING CONDITIONS (CONFIDENTIAL)

The Evaluation of Existing Conditions contains confidential information is not for public review

APPENDIX K
AGRICULTURAL PROTECTION PLAN

Appendix K

Agricultural Protection Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Agricultural Protection Plan (Plan) was prepared for Segment D because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

The Construction Contractor will be responsible for coordinating with landowners to identify the location of underground water lines prior to finalizing tower locations to avoid siting the towers above or adjacent to buried lines. The locations of fences, gates, cattle guards, and corrals will also be identified by the Construction Contractor to identify the potential need for repair and/or grounding. Underground water lines, fences, gates, cattle guards, and corrals will be mapped by the Construction Contractor prior to construction of a given segment.

2.0 PURPOSE

The purpose of this Plan is to identify measures the Construction Contractor will take to avoid, mitigate, repair, and/or provide compensation for impacts that may result from the construction, operation and maintenance of the Project on agricultural land.

For the purposes of this Plan, “landowner” includes the fee owner of private land and the land-managing agency on public land. On public land, communication and coordination will follow the procedures established in Appendix C – Environmental Compliance Management Plan.

3.0 RESOURCE FRAMEWORK

Livestock grazing occurs on both publicly managed and private lands. Rangeland and pasture are the dominant land uses and comprise 93 percent of the area crossed by the transmission line in Segment D. The area crossed includes lands that are part of BLM- and USFS-managed grazing allotments, as well as Idaho and Wyoming state lands that are leased for grazing. BLM and USFS allotments typically include a mixture of public, private, and state lands. Irrigated and dryland cultivated agricultural lands occupy 4 percent of the area crossed. No prime farmland soils are crossed in Segment D. The U.S. Department of Agriculture Farm Services Agency (FSA) indicates that there are no Conservation Reserve Program (CRP) lands within the Wyoming portion of Segments 1 through 4, and approximately 6 miles of CRP lands are crossed in the Idaho portion of Segment 4.

4.0 MITIGATION ACTIONS

The Construction Contractor will reasonably reclaim the land to its former condition or compensate each landowner, as appropriate, for damages and/or impacts to agricultural operations caused by the Construction Contractor as a result of construction. The decision to reclaim land or provide compensation will be made by the Companies after discussion with the landowner and/or landowner’s designee. Other environmental protection measures and their applicability are described in Appendix Z – Environmental Protection Measures.

4.1 Construction Scheduling

The Construction Contractor will contact landowners through coordination with the Companies’ right-of-way (ROW) agent as soon as possible once construction time frames have been developed. The Construction Contractor will consult with landowners when planning the construction schedule to minimize impacts on livestock practices, calving, crops, harvesting, and other activities.

4.2 Construction Debris

Project-related construction debris and material will be removed from the landowner’s property at the Construction Contractor’s expense.

4.3 Damaged Soil Conservation Practices

Soil conservation practices, such as terraces and grassed waterways that are damaged by Project construction, operation and maintenance will be restored to the extent practicable to their preconstruction condition.

4.4 Weed Control

- Weed control will be carried out consistent with Appendix E – Framework Noxious Weed Plan.
- On permanent ROW areas where the Companies have control of the surface use of the land such as towers, multi-purpose areas or access roads, the Construction Contractor will provide for weed control in a manner that does not allow the spread of weeds to adjacent lands used for agriculture. Herbicide application on such areas will be conducted by an applicator licensed by the applicable state.
- The Construction Contractor will conduct a preconstruction noxious weed survey and consult with the BLM, USFS, and other appropriate agencies to determine the location of noxious weeds in the ROW.
- Preconstruction weed treatment will be conducted by the Construction Contractor prior to the start of ground-disturbing activities and at the time most appropriate for the target species.
- Preconstruction weed treatment will be limited to areas that are expected to be subject to surface-disturbing activities.
- To prevent the introduction of weeds from other geographic regions, the Construction Contractor will thoroughly clean construction vehicles and equipment of soil and debris capable of transporting invasive plant seeds or other propagules prior to the initial move of those units to the Project.
- Construction equipment will also be cleaned periodically following the measures specified in Appendix E – Framework Noxious Weed Plan, especially when operating in areas with an abundance of noxious weeds, prior to moving equipment to the next construction location.
- The Construction Contractor will use straw bales for erosion control and straw for mulch that are certified free of noxious and nuisance weed contamination. If certified weed-free materials are not available, then alternative erosion control materials will be used, with prior approval of the CIC on federally managed lands.
- To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation will be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed free” and seed mix will be agreed to in advance by the landowner or land-managing agency.
- The Construction Contractor will monitor the construction areas for infestations of noxious weeds and treat new infestations resulting from construction activities.

4.5 Livestock Operations

- The Construction Contractor will work with the landowner or landowner's designee to coordinate and schedule construction activities to minimize impacts to livestock operations. Construction Contractor(s) will also construct temporary fences and gates during construction, as necessary.
- Any fences, gates, cattle guards, or corrals damaged by construction will be immediately repaired or replaced. The affected landowner may negotiate to undertake the responsibility for repair, relocation, reconfiguration, or replacement of damaged fences, or other livestock-related infrastructure in fair settlement with the Construction Contractor.
- In the event livestock must be relocated temporarily, or supplemental feed is necessary, Construction Contractor will reimburse the reasonable cost incurred for the transport of livestock, acquisition of temporary pasture land and/or additional supplemental feed during construction and reclamation activities.
- Removal or alteration of existing range improvements on public land is prohibited unless approved by the land-managing agency.

4.6 Irrigation Systems

- If Project construction or temporary work areas intersect an operational (or soon-to-be operational) spray irrigation system, the Construction Contractor will establish with the landowner and/or landowner's designee an acceptable amount of time during which the irrigation system may be out of service.
- For crops that are being irrigated during the construction period, the maximum time that application of irrigation water can be interrupted will be 24 hours, unless otherwise agreed upon with the landowner or landowner's designee.
- If it is feasible and mutually acceptable to the Construction Contractor and the landowner, temporary measures will be implemented to allow an irrigation system to continue to operate across land on which the transmission line is also being constructed. The Construction Contractor will work with the landowner and/or landowner's designee to identify a preferable construction time.
- To avoid damaging the pipes or creating difficult access to the irrigation lines for maintenance, the Construction Contractor will work with landowners to identify the location of underground water lines prior to finalizing tower locations to avoid siting the towers above or adjacent to buried lines.
- If irrigation lines or access to those lines for maintenance are adversely affected by the construction, operation or maintenance of the Project, the Construction Contractor will restore the function of the irrigation lines, including the relocation, reconfiguration, and replacement of existing lines. The affected landowner may negotiate to undertake the responsibility for repair, relocation, reconfiguration, or replacement of damaged lines in fair settlement with the Construction Contractor. In the event the landowner chooses to take on this responsibility, the Construction Contractor will not be responsible for correcting repairs after construction completion.

4.7 Access Roads

The location of access roads to be used for construction, operation and maintenance purposes are identified in Volume II of the POD, but will also require agreement with the landowner and/or landowner's designee.

- Access roads will be designed so as not to impede proper drainage and will be built to mitigate soil erosion on or near the temporary and permanent roads.
- The Construction Contractor will attempt to identify existing farm lanes as preferred temporary access roads for construction when existing maintained (e.g., gravel or asphalt) roads are not available.
- Upon abandonment, temporary roads may be left intact through mutual agreement of the landowner and Companies.
- If a temporary road is to be removed, the agricultural land upon which it is constructed will be returned to its previous use and reclaimed as nearly as possible to the condition that existed prior to construction, which may include decompaction.

4.8 Topsoil Separation and Storage

To preserve productive soils, topsoil in cultivated agricultural lands will be removed and stored separately prior to construction of temporary access roads, towers, and possibly specific locations within multi-purpose areas. Topsoil and other subsoil layers removed during construction on cultivated agricultural lands will be stored separately and replaced in the proper sequence after construction is complete and the disturbed area reclaimed. Unless otherwise specified in an agreement with the landowner, the Construction Contractor will not use this soil for any other purpose.

4.9 Excess Rock

Rock contained in any material brought to the construction area by the Construction Contractor for construction will be completely removed from cultivated agricultural lands and used or disposed of within the Project site boundary, following the completion of all site reclamation activities, unless otherwise specified in an agreement with the landowner.

4.10 Construction in Wet Conditions

- Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.
- As feasible, the Construction Contractor will schedule most construction activities to avoid the months of greatest precipitation.

4.11 Dust Control

- The Construction Contractor will implement dust control measures during construction in accordance with Appendix N – Framework Erosion, Dust Control and Air Quality Plan.
- The Construction Contractor will coordinate with farm operators to provide adequate dust control in areas where specialty crops are susceptible to damage from dust.

4.12 Prevention of Soil Erosion

- The Construction Contractor will implement erosion prevention and sediment control measures during construction in accordance with Appendix F – Framework Stormwater Pollution Prevention Plan.
- Following construction, cultivated agricultural lands will generally be reseeded or replanted by the landowner. The Construction Contractor will reseed and mulch non-cultivated agricultural land such as pastures and perennial grass hayfields in consultation with landowners, or will make arrangements with landowners who prefer to conduct the reseeding of these areas.
- The Construction Contractor will work with the landowner or landowner's designee to prevent erosion on cultivated agricultural lands in instances where the area disturbed by construction cannot be planted before the first winter season.

4.13 Induced Voltage

- Very rarely, barbed wire or other metal fences paralleling transmission lines may acquire induced voltage. Electric fences around livestock enclosures may also acquire an increase in voltage levels. Cathodic protection may be required to prevent excessive corrosion of irrigation distribution lines as a result of induced voltage.
- The Construction Contractor will assist landowners in determining the best ways to safely ground permanent or temporary fences if problems arise. The Companies will compensate landowners for any additional materials needed to properly ground or protect fences or irrigation equipment from induced voltage. The Construction Contractor will provide reasonable assurance during construction that all fences, gates, cattle guards, or other objects or structures of a permanent nature that could become inadvertently charged with electricity are electrically grounded or bonded.

5.0 ADVANCE NOTICE OF ACCESS TO PRIVATE PROPERTY

Once an agreement has been reached between the Companies and the landowner and scheduling of construction, operation or maintenance activities has been discussed, the Construction Contractor will provide the landowner or landowner's designee with advance notice before beginning construction on the property. Prior notice will consist

of a personal contact, email, letter, or a telephone contact informing the landowner or landowner's designee of the Construction Contractor's intent to access the land.

- Where feasible, the Construction Contractor will coordinate its activities to provide access for farm equipment and livestock to fields otherwise isolated by construction activities.
- The Construction Contractor will construct temporary fences and gates across the construction area to prevent entry by livestock, as necessary.
- Contractor will document all contact with landowners and, if requested, provide copies of such documentation and any correspondence to the Companies.

6.0 IMPACTS TO CONSERVATION RESERVE PROGRAM LANDS

The Companies will work with the local FSA with jurisdiction over the CRP lands that may be impacted. CRP lands affected by construction, operation or maintenance activities will require special attention. Generally, the placement of transmission line towers within CRP fields does not reduce the payments a landowner will receive due to loss of acreage within the tower footprint. Temporary access roads will require a waiver from the FSA as long as the road is decommissioned and reseeded to FSA specifications. The Companies will consult with the FSA and landowners to determine how construction may affect the CRP status of the land currently enrolled in CRP.

APPENDIX L
FRAMEWORK TRAFFIC AND TRANSPORTATION MANAGEMENT PLAN

Appendix L

Framework Traffic and Transportation Management Plan

Gateway West Transmission Line Project

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations and modification of three other substations beginning at the Windstar Substation and ending at the Populus Substation at Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, show the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Traffic and Transportation Management Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to minimize construction, operation and maintenance -related impacts to roads, public transportation, and traffic are outlined in this Plan. The Construction Contractor will be responsible for obtaining transportation-related permits, mapping of Project roads, documentation of preconstruction road condition, and development of the Final Traffic and Transportation Management Plan, which will include site-specific details.

2.0 PURPOSE

The purpose of this Plan is to provide authorizing agencies and the Construction Contractor with a description of the types of approved access associated with the construction, operation, and maintenance of the Project, and to provide the approved measures to minimize construction, operation, and maintenance-related impacts to roads, public transportation, and traffic. The goal of this Plan is to ensure that impacts from construction of any Project-related access roads are kept to a minimum through the application of environmental protection measures (EPMs) described in this Plan. These EPMs are intended to mitigate the effects of Project transportation on environmental resources, roads, traffic, travel, and road safety.

This document serves as a baseline for the development of a detailed Final Traffic and Transportation Management Plan. The Construction Contractor is responsible for developing the Final Traffic and Transportation Management Plan with site-specific details, including but not limited to determining the feasibility of and finalizing the preliminary access road network of primary and secondary access roads, designating each access road's disturbance type, and documenting preconstruction condition of roads. The Construction Contractor will be responsible for obtaining approval from all applicable authorizing agencies and/or landowners of the Final Traffic and Transportation Management Plan.

The Construction Contractor will also be responsible for obtaining all transportation-related permits. The Construction Contractor must file encroachment and oversized vehicle permit applications with appropriate authorizing agencies prior to construction for those areas where the transmission line crosses public roads or where oversized vehicles will be used on public roads. It is important to note that other permits and approvals not directly related to transportation could affect the construction, use, and/or maintenance of roads in certain areas. Persons responsible for Project transportation activities must be familiar with all relevant sections of the Project's Plan of Development (POD), of which this Plan is a part.

3.0 REGULATORY FRAMEWORK

A number of agencies have jurisdiction over the transportation-related components of the Project. These include the BLM, USFS, BOR, Wyoming Department of Transportation (WDOT), Idaho Transportation Department (ITD), Federal Highway Administration, local law enforcement and road departments, and local highway districts in the counties crossed by the Project.

4.0 TRAFFIC MANAGEMENT PRACTICES

Ground travel will be the primary means of transporting construction and maintenance crews and equipment. Helicopters may be used for construction activities if the Construction Contractor deems them expedient and their use is approved by the BLM or USFS Authorized Officer or his/her designated representative.

All vehicles will obey jurisdictional traffic speed regulations and the posted speed limit. On unsurfaced roads where speed limits are not posted, the speed limit is assumed to be 25 miles per hour (mph), unless otherwise directed by the Compliance Inspection Contractor (CIC). Speeds along access roads and spur roads within the right-of-way (ROW) will be limited to 25 mph on unposted Project roads to prevent excessive amounts of construction related dust, (e.g., in construction zones near residential and commercial areas and/or along major highways and interstates, sensitive wildlife areas, etc.), as needed (refer to Appendix N – Framework Erosion, Dust Control and Air Quality Plan).

As part of the development and approval of the Final Traffic and Transportation Management Plan (see Section 2.0 - Purpose), the Construction Contractor will review the preliminary access road network of primary and secondary roads and will ensure each access road is compatible with the Construction Contractor's means and methods for construction along that access road. Once the Final Traffic and Transportation Management Plan is complete and prior to construction, authorized access routes will be mapped as described in Section 8.0 – Access Road Disturbance Type, and clearly marked in the field with signs or flagging (refer to Appendix U – Framework Flagging, Fencing, and Signage Plan). The Construction Contractor will review the location of permitted access and will be responsible for ensuring construction travel is limited to designated areas that clearly identify the limits of disturbance.

All field personnel will attend an environmental training program. Through this program, field personnel will be instructed to use only approved access roads, drive within the delineated road limits, and obey jurisdictional and posted speed limits to minimize potential impacts to environmental resources.

Every effort will be made to minimize the effects of Project construction activities on public transportation and to provide for public safety. The Construction Contractor and all environmental inspectors will maintain a communications network that consists of one or both of the following devices: two-way radios or cellular phones. This will allow for coordination of equipment traffic along existing access roads so public safety, traffic impacts, and resource impacts are minimized.

The number of construction vehicles needed for the Project is not expected to substantially increase traffic volumes. Similarly, road and lane closures are anticipated to be minimal and will most likely occur during conductor stringing activities or during blasting. If road and lane closures are needed, the appropriate regulatory agencies, affected parties, and emergency service providers will be notified in advance.

Although construction traffic is not expected to disrupt access to residences along the ROW, adjacent landowners will be notified of the construction schedule (where appropriate). Signs will be posted in the Project area to notify landowners and others of the construction activity. Flagging and signage will be maintained until final cleanup and/or reclamation is completed, after which they will be removed. The final flagging scheme will be developed by the Construction Contractor and included in Appendix U – Final Flagging, Fencing, and Signage Plan. The final flagging scheme will include, at a minimum, the following:

- Project access road;
- Temporary work areas (pulling sites, multi-purpose areas, etc.);
- Protected animals/plants or sensitive environmental areas;
- Reclamation project areas;
- Invasive weed cleaning stations;
- Proposed structure locations;
- Structure offsets;
- Outside edge of permitted ROW or centerline;
- Cadastral survey monuments; and
- Non-authorized access roads.

Construction crews will park only in designated areas and will be shuttled to the appropriate work sites, as necessary.

5.0 DOCUMENTATION OF ROAD CONDITION

Numerous EPMs for reclamation, and TRANS-10, require that roads be restored to "preconstruction condition." Therefore, the preconstruction condition of roads to be used during construction, including roads not needing improvement and roads that will need to be improved, as well as the post-construction condition of those same roads, will need to be carefully documented. The Construction Contractor will include in the Final Traffic and Transportation Management Plan a proposal for photo-documentation that may include satellite or high-resolution aerial photography, site photos with photo location map, or other documentation methods that can be used to show compliance with these EPMs. Photo documentation will be completed prior to initiating construction for each work element for which a Notice to Proceed is requested.

6.0 PRIMARY AND SECONDARY ROAD NETWORK

Primary roads are those that will allow for the safe construction and operation of the Project and provide a permanent road to each structure and facility. These roads were selected as "Primary" roads based upon the Companies' expertise, anticipated construction techniques, and field reconnaissance. The primary road network will become the operations network of roads once construction is complete. The operations road network will include, at a minimum, one permanent road to each structure and regeneration station and a sufficient number of other roads to access the ROW or individual roads to structures.

Secondary roads are roads of similar quality to the primary roads that may provide:

- Alternatives to the Construction Contractor if a primary road identified by the Companies is not feasible, as long as the secondary road successfully provides access and the minimum requirements for permanent roads are met;

- Alternative access to the ROW that may improve traffic management, reduce impact on sensitive areas, or control dust;
- Alternative access should a primary road become damaged or dangerous during construction to allow construction to continue during the primary road repair; or
- Alternative access to avoid seasonal restrictions and to avoid conflicts with other road users.

Volume II, Appendices II-1 – Location Maps and II-2 – Environmental Resource Maps, identify the preliminary system of primary and secondary access roads that have been identified by the Companies for access and surveyed for cultural resources. The Construction Contractor will review the preliminary access road network and determine the feasibility of each access road per the Construction Contractor's construction means and methods. The Construction Contractor will incorporate into the Final Traffic and Transportation Management Plan any proposed substitutions between primary and secondary roads. The Construction Contractor will be responsible for obtaining approval from all applicable authorizing agencies and/or landowners of the Final Traffic and Transportation Management Plan.

If the Construction Contractor wants to modify the primary access road network in the Final Traffic and Transportation Management Plan after approval from the Companies and all applicable authorizing agencies and/or landowners, the variance approval process outlined in Appendix C – Environmental Compliance Management Plan of the POD will be followed, including any additional surveys, reporting, and approvals. The Construction Contractor will also contact private landowners and reach agreement on the change before using roads other than those approved through this process.

7.0 ACCESS ROAD TYPE

The preliminary access road network of primary and secondary roads designates each access road as one of four types of permanent access or as temporary access.

7.1 Existing Roads – No Improvement

The Existing Roads – No Improvement access road level includes existing maintained paved or all-weather surfaced roads that are able to be used in their current condition. The Companies' construction standards will be met, including the use of a minimum travel surface width of 14 feet wide and requiring a travel surface width of up to 20 feet depending on the radius of curves. The use of the term 'No Improvement' is intended to signify that no additional new disturbance will be created outside of an established disturbed area. As such, the Existing Roads – No Improvement access road level could include regular maintenance to make the road passable for construction. Regular maintenance could include but are not limited to minor blading activities, repair of washed out areas, wash boarded areas, depressions requiring graveling, approach installation, and other minor improvements. If it is determined that one of these roads does need improvement beyond routine maintenance, the Companies must be notified and any change approved through the variance process described in Appendix C to this POD – Environmental Compliance and Management Plan.

7.2 Existing Roads – Improvements Required

The Existing Roads – Improvements Required access road level includes existing roads that require improvements to meet the Companies' construction road standards. The Existing Roads – Improvements Required access road level includes existing roads that may require widening to a minimum 14 foot travel surface width to meet the Companies' construction road standards. In areas of steep terrain, the road travel surface width could be a maximum of 22 feet to meet the Companies' construction road standards, depending on radius of curves and the slope of the terrain. As a result, total disturbance has the potential to exceed 22 feet, depending on the slope of terrain. Disturbed areas, as a result of cut and fill slopes, will exceed the travel surface width in areas of steep terrain.

Improvements to this access road level could include but are not limited to blading to create a road to meet the Companies' construction road standards, cut and fill activities, re-establishing drainage features, tree removal, boulder and rock removal, bridge and culvert construction, installation of wash crossings, and other improvements to provide an adequate surface to support construction and maintenance vehicles. The amount of disturbance due to hilly terrain conditions is described in Appendix B – Transmission Line and Substation Components.
Improvements to this access road level may require reclamation to preconstruction conditions as determined by land-managing agency or landowner requirements.

7.3 New Roads – Bladed

The New Roads –Bladed access road level includes the construction of new permanent access roads where existing roads do not exist with the purpose of allowing for access to the Project ROW. New bladed access roads will be constructed to meet the Companies' construction road standards. The Companies' road construction standards include constructing a minimum travel surface width of 14 feet. In areas of steep terrain, the road travel surface width could be a maximum of 22 feet to meet the Companies' construction road standards, depending on radius of curves and the slope of the terrain. As a result, total disturbance has the potential to exceed 22 feet, depending on the slope of terrain. Disturbed areas, as a result of cut and fill slopes, will exceed the travel surface width in areas of steep terrain. The amount of disturbance due to hilly terrain conditions is described in Appendix B – Transmission Line and Substation Components.

7.4 New Roads – Overland Travel

The New Roads – Overland Travel access road level includes new permanent access routes that will utilize Overland Travel with the purpose of allowing for access to the Project ROW. It is intended that Overland Travel access is used in areas where access can be attained without construction of roads according to the Companies' access road standards. As such, overland travel will be utilized in areas of relatively flat topography. The result will be an access route that will eventually become a two trail or naturally revegetate completely, but still allow Company access without grading after construction.

Overland travel is comprised of two different methods, which are:

- Drive and Crush, which is vehicular travel to access a site without significantly modifying the terrain. Vegetation is crushed, but not cropped. Soil is compacted but no surface soil is removed. Even though vegetation may be damaged or destroyed, this creates vertical mulch upon the surface soil and leaves the seed bank in place. Crushed vegetation will likely resprout after temporary use is stopped. A dozer, grader or other type of equipment may be used to move boulders or other obstructions that prevent overland travel. Additionally, minor areas where the planned access crosses side slope that exceeds allowable for access by construction or maintenance vehicles, may be graded to provide safe passage. The disturbed area will be blended, to the extent practicable, into the existing grades and revegetated according to the prescribed mitigations.

- Clear and Cut, which is above grade removal of vegetation in order to improve or provide suitable access for equipment. All vegetation is removed using above grade cutting methods that leave the root crown intact. Soils are compacted, but no surface soil is removed. This also helps in the prevention of spreading weeds as there is nothing to get hung up on the bottom of the vehicles and be transported to other locations. A dozer, grader or other type of equipment may be used to move boulders or other obstructions that prevent overland travel. Additionally, minor areas where the planned access crosses side slope that exceeds allowable for access by construction or maintenance vehicles, may be graded to provide safe passage. The disturbed area will be blended, to the extent practicable into the existing grades and revegetated according to Appendix D – Framework Reclamation Plan.

7.5 Temporary Roads

The Temporary Roads access road level can include existing trails or two track roads or overland travel access to support the construction of the Project and access the Project ROW. These roads will be constructed to temporary facilities such as multi-purpose areas and fly yards, and to access structures in Segment 4 in the Bear River Plain to reduce impacts to a large wetland complex. This access road level does not require construction to meet the Companies' road construction standards, provided they are temporary. However, this type of access road level will be constructed to provide a safe travel way and as such, temporary disturbance could result. Temporary disturbance will be dictated by the underlying ground conditions, but disturbance could range from significant, such as blading/cut and fill activities, to minor, such as overland travel. Unless otherwise noted by the land management agency or landowner, this access road level requires reclamation, to the extent practicable, to preconstruction conditions.

8.0 ACCESS ROAD DISTURBANCE TYPE

As part of preparing the Final Traffic and Transportation Management Plan, the Construction Contractor will assign disturbance levels to the primary and secondary roads of the preliminary access road network. The Construction Contractor will be responsible for finalizing the access road network of primary and secondary roads in the Final Traffic and Transportation Management Plan and obtaining approval from all applicable authorizing agencies and/or landowners of the Final Traffic and Transportation Management Plan. Table 8-1 – Relationship between Disturbance Types and Road Types, shows the relationship between disturbance types and road types.

Table 8-1. Relationship between Disturbance Types and Road Types

	Disturbance Type					
Road Type	**Type D1: No New Disturbance**	**Type D1: No New Disturbance outside existing footprint; maintenance only**	**Type D2: Overland Drive-and-Crush; level to gently rolling terrain**	**Type D3: Overland Clear-and-Cut; level to gently rolling terrain**	**Type D4: Blade-and-Shape**	**Type D5: Bear River Plain Matting**
Existing Roads Not Needing Improvement	X	X				
Existing Roads Needing Improvement			X	X	X	
Permanent New Roads			X	X	X	
Temporary Roads			X	X	X	X

The assigned type will be shown on revised Volume II, Appendix II-2 – Environmental Resource Maps prepared by the Construction Contractor. Each road and road segment will be coded as follows:

8.1 Type D1 – No New Disturbance

This type includes paved highways and other developed roadways, including well traversed and established gravel or unsurfaced roadways with a well-graded 14-foot-wide or wider road surface and a road base in good condition. Routine maintenance for construction (regarding wash-out areas, graveling, and installation of gravel pads within the existing road footprint for controlling trackout) may be applied as needed on unpaved roads. No improvements to these roads would be required to initiate construction of the Project. These types of roads are typically maintained by entities other than the Companies, such as WDOT, ITD, and counties. Stabilized construction entrances would be used to transition from paved surfaces to other access types.

8.2 Type D2 – Overland Drive-and-Crush

Type D2 will have a 14-foot or less traveled surface and disturbance width. Drive-and-crush will occur in areas that are relatively level and have low growing grasses and shrubs. Drive-and-crush would not significantly modify the landscape. Vegetation would be crushed but not cropped. Soil is compacted, but no surface soil is removed.

8.3 Type D3 – Overland Clear-and-Cut

Type D3 will have a 14-foot-wide or less traveled surface. Vegetation within the travel surface and trees within 5 feet of the travel surface would be cut at the ground surface preserving the roots. Clear-and-cut is considered as mowing or grubbing of all vegetation in order to improve or provide suitable access for equipment. Methods for removal of vegetation will include mowing (brush hog flail type mower), hand clearing with small tools such as loppers and chain saws, and back dragging a bulldozer blade above the surface of the soil to remove surface vegetation. The vegetation roots would be left in place wherever practical to facilitate reestablishment. Clear-and-cut will be used in relatively flat terrain where trees, brush, or other dense vegetation predominate. At some point in the future, a road built using this technique may require clear-and-cut maintenance work to make the route passable for operation and maintenance activities.

8.4 Type D4 – Blade-and-Shape

Type D4 disturbance will apply to existing roads needing improvement and new roads for permanent access needed for construction, operation, and maintenance. This road construction will adhere to the Companies' construction and maintenance standards and have a 14-foot traveled surface width, except in specific circumstances, as defined in the Companies' Transmission Construction Standards (refer to Appendix V) where, in steeper terrain, the travel surface width could be a maximum of 22 feet for radius of curves and the total disturbance width would be wider depending on percent slope and the extent of cut and fill (refer to Appendix B, Section 2.5.1 – Construction Access Roads). Trees within 5 feet of the access road surface will be cleared to allow for needed crowning, ditching, cuts, or fills where needed. The constructed travel surface road base shall be compacted to provide a smooth, uniform surface. Stabilized construction entrances would be used to transition from paved surfaces to other access types.

8.5 Type D5 –Bear River Plain Matting

Type D5 will have a 14-foot or less traveled surface and disturbance width. Temporary matting materials will be used when heavy vehicles and equipment need to access structures during wet ground conditions. The mats are typically heavy timbers bolted together and may be used over a geotextile that is applied directly on the wet soil surface. When construction is complete, the mats are removed and the geotextile taken up. This approach is limited to this wetland area only because it severely limits the Companies' ability to respond to emergency repair needs but is needed to reduce wetland impacts. It is feasible only in this area because there is available storage for the heavy timber matting needed for emergency access in the immediate vicinity (refer to Appendix B, Section 2.5.4 – Wetlands Crossings with Access Roads). Within 30

days of the completion of the construction and/or maintenance activity, the mats and geotextile will be removed allowing the vegetation to naturally re-establish.

9.0 ENVIRONMENTAL PROTECTION MEASURES

Implementation of the following EPMs will avoid or reduce impacts associated with access to and from the Project. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

TRANS-1 A Final Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in this attachment. The Final Traffic and Transportation Management Plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction.

TRANS-2 If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.

TRANS-3 On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.

TRANS-4 To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.

TRANS-5 Unauthorized vehicles will not be allowed within the construction ROW or along roadsides near the ROW.

TRANS-6 Construction vehicles will follow a 25 mph speed limit on unposted project roads.

TRANS-7 Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.

TRANS-8 Emergency vehicle access to private property will be maintained.

TRANS-9 Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day, without blocking residential traffic.

TRANS-10 Roads negatively affected by construction and as identified by the applicable jurisdictional agency and/or landowner will be returned to

preconstruction condition. The method of preconstruction condition documentation will be coordinated by the Construction Contractor and the applicable jurisdictional agency and/or landowner.

TRANS-11 Roads developed specifically for this project that are identified by the Companies as no longer necessary will be reclaimed as specified in the Final Reclamation Plan. Culverts will be removed.

TRANS-12 The Companies will attempt to identify existing two-track trails as preferred access roads for construction when existing maintained (e.g., gravel or asphalt) roads are not available.

TRANS-13 Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during the design stage.

TRANS-14 Access roads built for the Project on federal lands will be closed to the public unless otherwise agreed upon with the land management agency. Signs will indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage and road closure measures will be evaluated during routine visits and maintained or replaced as necessary as part of routine maintenance. Access roads constructed solely for use by the Companies will be maintained by the Companies as needed for the Companies' use in accordance with the ROW grants/special use authorization.

TRANS-15 Roads to be abandoned may be left intact through mutual agreement of the land management agency, landowner, the tenant, and the Companies, unless located in flood areas or drainage hazard areas or otherwise restricted by federal, state, or local regulations.

TRANS-16 All temporary culverts and associated fill material will be removed from stream crossings after construction. All permanent culverts will be engineered by the Construction Contractor and approved by the Companies prior to installation.

TRANS-17 The road or highway within the ROW corridor shall be used to the maximum extent possible for construction and maintenance of the new ROW.

TRANS-18 To help set public expectations for when temporary access roads are decommissioned, signs shall be posted on all temporary roads and overland access routes identifying them as reclamation areas. Signs will state "Restoration in Progress – No Vehicle Traffic Allowed."

TRANS-19 During wet road conditions, any ruts deeper than 4 inches remaining on the roads from the Project will be repaired.

SOIL-30 Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.

APPENDIX M
FRAMEWORK BLASTING PLAN

Appendix M

Framework Blasting Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall locations of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Blasting Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to minimize environmental impact associated with blasting during construction are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Blasting Plan, which will include mapping of explosive storage locations and areas where blasting will occur, including identification of blasting within 0.25 mile of a known sensitive resource, blasting in the vicinity of pipelines, and wells and springs that may be impacted by blasting.

2.0 PURPOSE

The purpose of this Plan is to provide preventive procedural actions, environmental protection measures (EPMs), and other specific stipulations and methods to minimize the environmental impact associated with blasting during construction, operation, and maintenance. The Final Blasting Plan will provide construction crews, the Compliance Inspection Contractor (CIC), and environmental monitors with Project-specific information concerning blasting procedures, including the safe use and storage of explosives. The objective of the Final Blasting Plan is to prevent adverse impacts to human health and safety, property, and the environment that could potentially result from the use of explosives during project construction.

Blasting may be needed in certain areas with rocky terrain to excavate tower footings, prepare substation pads, and construct access roads. Blasting will be used only in areas where traditional excavation and earth-moving equipment and practices are unable to accomplish the excavation. In addition, the Construction Contractor may elect to utilize implosive sleeves during line stringing activities to fuse conductor wire together. Areas where blasting will likely occur will be identified based on the geologic setting of the proposed alignment, as identified in the geotechnical investigation for the Project.

3.0 REGULATORY COMPLIANCE AND PROCEDURES

The Construction Contractor will be responsible for preparing and implementing the Final Blasting Plan and must comply with all applicable federal, state, and local laws and regulations which pertain to explosives. No blasting operations will be undertaken until approval and appropriate permits have been obtained from the applicable agencies. Failure to comply with such laws could result in substantial financial penalty and/or imprisonment.

The Construction Contractor will use qualified, experienced, and licensed personnel that will perform blasting using current and professionally accepted methods, products, and procedures to maximize safety during blasting operations. Blasting procedures will be carried out according to, and in compliance with, applicable laws and will be closely monitored by the CIC.

4.0 BLASTING PLAN GUIDANCE

Prior to blasting, the Construction Contractor shall prepare a Final Blasting Plan for review and approval by the BLM, CIC, and any other relevant jurisdictional organization (i.e., county, city, etc.) as applicable. The plan will address safety as well as design for production and controlled blasting. The Final Blasting Plan also will contain the full details of the drilling and blasting patterns, as well as the controls the Construction Contractor proposes to use for both controlled and production blasting. Review of the plan by the parties shall not relieve the Construction Contractor of the responsibility for the accuracy and adequacy of the Final Blasting Plan when implemented in the field. A minimum of two weeks should be allowed for review and approval of the Blasting Plan by the BLM and appropriate agencies. If at any time changes are proposed to the Final

Blasting Plan, the Construction Contractor shall submit them to the Companies, who will then submit the proposed changes to the BLM and CIC for review and approval.

4.1 Overview of Blasting Principles

4.1.1 Locations

The Construction Contractor will avoid blasting in potential rockslide/landslide areas to the maximum extent possible and will consult with a geologist before blasting in such areas. A common practice for fusing conductor wire together is the use of implosive sleeves, which utilize explosive materials. The Construction Contractor will be knowledgeable about this practice and will coordinate with the CIC, particularly with regard to the locations of these practices.

4.1.2 Materials

The Construction Contractor will determine the specific materials needed for blasting operations. These materials will be included on the hazardous materials list for the Project, and their use and storage will comply with applicable federal, state, and local laws and regulations.

4.2 Blasting Plan Contents

The Final Blasting Plan prepared by the Construction Contractor shall contain the following minimum information in the following format:

1. Purpose
2. Scope of the Blasting
3. Definitions
4. Responsibilities
    a. Management Organization
    b. Authority Responsibility
    c. Blaster in Charge (licensed in Wyoming and Idaho)
5. Location of Blasting Area
    a. Description of Blasting Area
    b. Description of Bedrock and Geological Problems
    c. Description of Adjacent Utility Facilities
6. Environmental Considerations
7. Safety Considerations
    a. General
    b. Warning Signs and Signals
    c. Procedures around Adjacent Utility Facilities
    d. Traffic Control
    e. Emergency Blast Initiation
    f. Safety Publications
    g. Fire Prevention
    h. Safety Hazards
    i. Emergency Services and Communication
    j. Minor or Non-Emergency Medical Care
    k. First Aid
8. Risk Management

   a. Protection of Adjacent Utility Facilities
   b. Lightning
   c. Flyrock (Note: Flyrock will be controlled with blasting mats.)
   d. Carbon Monoxide
   e. Ground Vibrations
   f. Seismically Sensitive Receptors
   g. Pre-blast Survey and Inspection
   h. Blast Damage Complaints
   i. Airblast
9. Blast Design Concept
   a. Station limits of proposed shot
   b. Plan and section views of proposed drill pattern, including free face, burden, blast hole spacing, blast hole diameter, blast hole angles, lift height, and sub-drill depth
   c. Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming
   d. Initiation sequence of blast holes, including delay times and delay system
   e. Manufacturers' data sheets for all explosives, primers, and initiators to be employed
10. Procedures
   a. Delivery of Explosives
   b. Storage of Explosives and Blasting Agents
   c. Blast Hole Drilling
   d. General Handling of Explosives
   e. Blast Hole Loading
   f. Notification
   g. Initiation of Blast
   h. Misfire Management
   i. Test Blasting
11. Records
12. Attachments

5.0 SAFETY PROCEDURES

Safe storage and use of explosive materials will be a top priority during construction. The safety measures discussed in this section are intended to prevent theft and/or vandalism of the explosive materials, protect against fire, and prevent personal injury and property damage. These measures are intended as general guidelines.

5.1 Storage

Explosives must be stored in an approved structure (magazine) and kept cool, dry, and well-ventilated. The Construction Contractor will provide the Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF) Cheyenne, Wyoming, and Boise, Idaho, Field Offices with a list of dates and locations for the explosives and blasting agent storage facilities to be used on the Project at least 14 days before the establishment of such storage facilities.

At a minimum, the following storage requirements will be implemented:

- Explosives must be stored in an approved structure (magazine), and storage facilities will be bullet-resistant, weather-resistant, theft-resistant, and fire-resistant.
- Magazine sites will be located in remote (out-of-sight) areas with restricted access; kept cool, dry, and well ventilated; and will be properly labeled and signed.
- Detonators will be stored separately from other explosive materials.
- The most stringent spacing between individual magazines will be determined according to the guidelines contained in the BATF publication or state or local explosive storage regulations.
- Both the quantity and duration of temporary on-site explosives storage will be minimized.
- The Construction Contractor will handle and dispose of dynamite storage boxes in accordance with relevant federal, state, and local laws.

5.2 Blasting Notification and Safety Procedures

The Construction Contractor will obtain a permit from the appropriate county as needed, for the period when blasting may occur and will comply with the following requirements developed by the BLM:

- The Construction Contractor shall publish a proposed blasting schedule in the local newspaper one week prior to any blasting taking place. The schedule shall identify the location, dates, and times blasting will occur. No blasting shall occur outside of the published schedule, except in emergency situations.
- The Construction Contractor shall post warning signs at all entry points for the Project. Warning signs shall include information on blasting, including the general hours blasting might take place, and audible signals to be used warning of impending blasting and to indicate that the site is all clear.
- Access points to areas where blasting will take place will be blocked to prevent access by the public at least 30 minutes prior to blasting. The site shall be swept 5 minutes prior to blasting to ensure no unauthorized personnel have wandered onto the site. An audible warning signal, capable of carrying for one-half mile, shall be used at least 2 minutes prior to blasting. An “all-clear” signal will be given once it has been determined the area is safe.
- Blasting in the vicinity of pipelines will be coordinated with the pipeline operator and will follow operator-specific procedures, as necessary.
- Damages that result solely from the blasting activity will be repaired or the owner fairly compensated.
- A determination of all clear danger will be derived once the blasting area has been inspected for undetonated or misfired explosives. The blasting area will also be inspected for hazards such as falling rock and rock slides. Once the area has been inspected and these issues have been addressed, the all-clear signal

as described above will sound and persons will be able to safely re-enter the blast zone.

- Additional safety precautions will be developed to address site-specific conditions at the time of the blast. Special attention will be given to preventing potential hazards in the blasting area resulting from flying rock, destabilized walls, structures, presence of low flying aircraft, and dispersion of smoke and gases.

5.3 Fire Safety

The presence of explosive materials on the Project site could potentially increase the risk of fire during construction. Special precautions will be taken to minimize this risk in conjunction with the Appendix O - Framework Fire Prevention and Suppression Plan, including but not limited to:

- Prohibiting ignition devices within 50 feet of explosives storage areas;
- Properly maintaining magazine sites so they are clear of fuels and combustible materials, well ventilated, and fire-resistant;
- Protecting magazines from wildfires that could occur in the immediate area;
- Posting fire suppression personnel at the blast site during high fire danger periods; and
- Prohibiting blasting during extreme fire danger periods.

5.4 Transportation of Explosives

Transportation of explosives will comply with all applicable federal, state, and local laws, including Title 49 of the Code of Federal Regulations, Chapter III. These regulations are administered by the U.S. Department of Transportation (USDOT) and govern the packaging, labeling, materials compatibility, driver qualifications, and safety of transported explosives. In general, these regulations require vehicles carrying explosive materials must be well-maintained, properly marked with placards, and have a non-sparking floor. Materials in contact with the explosives will be non-sparking, and the load will be covered with a fire- and water-resistant tarpaulin. Vehicles also must be equipped with fire extinguishers and a current copy of the Emergency Response Guidebook (USDOT and Transport Canada 2012). Every effort will be made to minimize transportation of explosives through congested or heavily populated areas.

Prior to loading an appropriate vehicle for carrying explosives, the vehicle shall be fully fueled and inspected to ensure its safe operation. Refueling of vehicles carrying explosives shall be avoided. Smoking shall be prohibited during the loading, transporting, or unloading of explosives. In addition, the following specific restrictions apply to transport of other items in vehicles carrying explosives:

- Tools may be carried in the vehicle, but not in the cargo compartment.
- Detonation devices can, in some cases, be carried in the same vehicle as the explosives, but they must be stored in a specially constructed compartment(s).
- Batteries and firearms shall never be carried in a vehicle with explosives.

- Vehicle drivers must comply with the specific laws related to the materials being transported.
- Vehicles carrying explosives shall not be parked or left unattended except in designated parking areas with approval of the State Fire Marshall. When traveling, vehicles carrying explosives will avoid congested areas to the maximum extent possible.

5.5 Environmental Protection Measures

Blasting has the potential to cause environmental impacts. Implementing the EPMs listed below will mitigate these impacts. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

WILD-11 Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.

BLA-1 The Blasting Plan will identify blasting procedures including safety, use, storage, and transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.

BLA-2 All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).

BLA-3 Appropriate flags, barricades, and warning signals will be used to ensure safety during blasting operations. Blast mats will be used when needed to prevent damage and injury from fly rock.

BLA-4 Blasting in the vicinity of pipelines will be coordinated with the pipeline operator, and will follow operator-specific procedures, as necessary.

BLA-5 Damages that result from blasting will be repaired or the owner fairly compensated.

BLA-6 Proper blasting techniques, including proper cover of charges, will be followed.

BLA-7 Matting will be used in rock blasting operations to minimize and control dust.

BLA-8 Notification of blasting activities will be provided to nearby residents.

BLA-9 The Construction Contractor will prepare site-specific blasting plans.

BLA-10 The Blasting Plan for the proposed Project will also stipulate the following:

- Explosives will not be stored on federal land without prior written permission from the land-management agency. Copies of this permission will be posted on each magazine.

- Seventy-two hours advance notice of blasting activities will be given to the land-management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers.
- Warning signs will be erected and maintained at all approaches to the blast areas and flaggers will be stationed on all roadways passing within 1,000 feet of blasting activities.
- Explosives will not be primed or fused until just before use.
- Blasting will take place during daylight hours only and will be monitored with three axis seismographs to ensure safe vibration levels are not exceeded.
- Vibration measured as peak particle velocity will not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground structure (including water wells).

WILD-11 will be followed for protection of sensitive species as well as the required notification discussed above in Section 5.2. The Construction Contractor will notify the CIC and environmental monitors 72 hours prior to scheduled blasting and comply with the permit requirements for notification by appropriate counties, including any requirements for dust abatement. Regular field meetings will be held with the CIC and environmental monitors to review the process and its implementation. If changes are needed to the notification process, changes will be made to facilitate protection of environmental resources.

6.0 LITERATURE CITED

USDOT (U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration) and Transport Canada. 2012. Emergency Response Guidebook: A Guidebook for First Responders During the Initial Phase of a Dangerous Goods/Hazardous Materials Transportation Incident. Available online at http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/Hazmat/ERG2012.pdf

APPENDIX N
FRAMEWORK EROSION, DUST CONTROL AND AIR QUALITY PLAN

Appendix N

Framework Erosion, Dust Control and Air Quality Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, show the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Erosion, Dust Control and Air Quality Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to minimize dust and air emissions from construction-related activities and address soil erosion and sedimentation are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Dust Control and Air Quality Plan (Final Plan), including mapping locations of water sources to be used for construction and areas of expansive soils, landslide risk, or other geotechnical hazards.

2.0 PURPOSE

This purpose of this Plan is to provide measures to be utilized by the BLM and other applicable land management agencies, the Compliance Inspection Contractor (CIC), and the Construction Contractor to ensure protection of the air quality and soils and that will be affected by the Project. The Final Plan will be implemented during the construction, operation, and maintenance phases of the Project. Measures provided in this Plan are intended to 1) minimize dust and air emissions from construction-related activities and 2) address soil erosion and sedimentation.

3.0 REGULATORY COMPLIANCE

Construction, operation, and maintenance activities for the Project are subject to various regulations designed to protect environmental resources and the public from erosion, dust, and other possible effects to air quality. The following permits and documents contain requirements for preventing accelerated erosion and minimizing dust and air emissions. Refer to these documents, along with this Plan, when assessing which mitigation measures are appropriate for a specific area. At a minimum, the Companies and the Construction Contractor will adhere to or obtain the following permits:

3.1 Federal Permits

- BLM – Right-of-way (ROW) grant and temporary use permit: Federal Land Policy and Management Act of 1976 (Public Law 94-579); 43 United States Code (U.S.C.) 1761-1771; 43 Code of Federal Regulations (CFR) 2800
- USFS – Special-use authorization: 36 CFR 251.50; 36 CFR 220
- U.S. Army Corps of Engineers (USACE) – Clean Water Act (CWA), Section 401: CWA (33 U.S.C. 1344)
- U.S. Environmental Protection Agency (USEPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit

3.2 State Permits

- Wyoming Department of Environmental Quality (WDEQ) – Air Quality Division Construction Permit to control fugitive dust emissions during construction.
- WDEQ – Sections 401, 402, and 404, CWA, Water Quality Certification (State implementation of the USACE permits for air quality and stormwater discharges).
- Idaho Department of Environmental Quality (IDEQ) – Fugitive dust control plan for construction projects.
- IDEQ – State implementation of the USACE CWA Section 401, 402, and 404 permits.

3.3 Local Permits

County conditional use permits, temporary use permits for staging areas, road crossing permits and/or encroachment permits may have erosion or air quality considerations. Natrona County requires submittal of an erosion control plan that addresses dust control, Sweetwater County requires a grading permit. Requirements vary by county.

4.0 ENVIRONMENTAL CONSIDERATIONS

4.1 Soil Conservation and Erosion

Soil conservation for the Project includes minimizing impacts that will affect soils from the construction and operation of the proposed transmission line, such as minimizing wind and water erosion, soil compaction, surface disturbance, and construction activities in wet soils. Prior to ground disturbance, geotechnical studies have been conducted and a report for affected areas has been prepared to provide more specific detail/measures regarding soil conservation for the Project.

Erosion potential is the result of several factors including slope, vegetation cover, climate, and the physical and chemical characteristics of the soil. Increased soil erosion may occur when vegetation is removed during construction, or in areas where the surface is disturbed by heavy equipment. Increased water erosion often occurs during high-intensity or long-duration rainstorms and may reduce the productivity of the soil as well as affect water quality of streams by accelerating sediment loading. Wind is also an erosion factor throughout portions of the Project area. Soil compaction could also be a concern for sections of access roads subject to repeated use. In areas of prone to soil erosion, prevention measures will be as directed in Appendix F – Framework Stormwater Pollution Prevention Plan.

Where disturbance is anticipated in areas of steep terrain with high potential for erosion; vegetation clearing and grading will be conducted in a manner to minimize these effects. Soil stabilization and reclamation practices will also be implemented to reduce erosion. In select locations, helicopter construction may be used to further reduce these impacts. In areas of soil compaction (e.g., temporary access roads), soil treatment and reclamation will be implemented as directed in Appendix D – Framework Reclamation Plan.

4.2 Air Quality and Dust Control

Construction of the transmission line and related facilities will cause a temporary and minimal increase in fugitive dust. Ambient levels of nitrogen oxides, hydrocarbons, and carbon monoxide near the construction zone will also temporarily increase due to emissions from heavy construction equipment. Related facilities will cause a minimal increase in fugitive dust.

Air quality control measures are intended to minimize fugitive dust and air emissions and to maintain conditions as free from air pollution where practical. All requirements of those entities having jurisdiction over air quality matters will be adhered to, and any permits needed for construction activities will be obtained. The Construction Contractor

will not proceed with any construction activities without taking reasonable precautions to prevent excessive particulate matter from becoming airborne and creating nuisance conditions.

Excessive exhaust emissions from vehicles and heavy equipment will be prevented by proper maintenance, and no open burning of construction trash or other open fires will be allowed.

Where necessary, water or magnesium chloride ($MgCl_2$) may be used as BLM-approved dust control methods during construction, including the grading of roads or the clearing of land and of the ROW. Dust control methods will be applied on unpaved roads, material stockpiles, and other surfaces which can create airborne dust. Where application of water is not possible, material stockpiles will be enclosed or covered. In addition, open-bodied trucks transporting materials likely to become airborne will be covered. Earth or other materials that may become airborne will promptly be removed from paved roads. Matting will be used in rock blasting operations to minimize and control dust (see Appendix M – Framework Blasting Plan).

5.0 ENVIRONMENTAL PROTECTION MEASURES

Environmental protection measures (EPMs) in this plan are applicable to project construction, operation and maintenance to ensure activities employ erosion control, dust control, and air quality protection measures. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

General

G-1 Resource Management Plan (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements will apply on BLM-managed lands.

G-2 Forest Plan Standards and Guidelines (as amended) will apply on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.

G-3 Third-party Environmental CIC Monitors approved by the Agencies will monitor construction activities. Monitoring activities will be structured in accordance with the Environmental Compliance Management Plan included as Appendix C of the POD.

Soil Conservation and Erosion

WQA-5 The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.

WQA-6 Stormwater BMPs will be inspected and maintained on all disturbed lands during construction activities, as described in the SWPPP and appropriate NPDES permit.

WQA-7 Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.

WQA-8 Temporary BMPs will be used to control erosion and sediment at multi-purpose areas (equipment storage yards, fly yards, lay down areas) and substations.

WQA-9 The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.

WQA-10 Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP and appropriate NPDES permit.

WQA-11 Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs and appropriate NPDES permit.

WQA-12 In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.

WQA-19 If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.

WQA-23 Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.

WQA-24 On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.

WQA-25 All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.

WQA-26 Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region.

WQA-27 On non-federal lands, culvert placement should comply with state BMPs.

WQA-28 Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.

SOIL-4 Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent waterbars, cross-ditching (e.g., rolling dips) or other methods to reduce compaction while preventing gully formation. Ripping pattern should be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies.

SOIL-5 The Companies are responsible for monitoring to ensure soil protection is achieved, and providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit.

SOIL-8 When feasible, reroute all construction or maintenance activities around wet areas so long as the route does not cross into sensitive resource areas and at the approval of the CIC.

SOIL-9 Limit access of construction equipment to the minimum area feasible, remove and separate topsoil in wet or saturated areas subject to temporary disturbance, and stabilize subsurface soils with a combination of one or more of the following: perform grading to dewater problem areas, utilize weight dispersion mats, and maintain erosion control measures such as surface drilling and back-dragging. After construction is complete, regrade and recontour the area, replace topsoil, and reseed to achieve the success standard plant densities as stated in the Reclamation Plan.

SOIL-10 Vegetation removal and soil disturbances (including temporary road improvements) will be minimized in areas where soil constraints occur. In areas of overland construction, where vegetation removal is required, mowing or cutting and/or back-dragging a cat blade will be the primary method used (also refer to Appendix D –Framework Reclamation Plan).

SOIL-12 Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.

SOIL-13 Inform all construction personnel, before they are allowed to work on the Project, of environmental concerns, pertinent laws and regulations, and elements of the erosion control plan.

SOIL-14 Slope and berm graded material, where possible, to reduce surface water flows across the graded area.

SOIL-15 Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling.

SOIL-16 Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.

SOIL-17 Re-establish native vegetation cover in highly erodible areas as quickly as possible following construction where determined necessary (refer to Appendix D – Framework Reclamation Plan).

SOIL-20 To prevent accelerated wind or water erosion on dirt roads, gravel mulches may be added if other mitigation measures are not adequate or if the area is not in a sensitive receptor zone. Gravel of approximately 0.75 to 1.5 inches in diameter should be used and cover a minimum of 90 percent of the soil surface. Slopes steeper than 3:1 may require additional sediment and erosion control structures.

SOIL-21 Surface roughening aids establishment of vegetative cover, reduces runoff velocities, increases infiltration, and reduces erosion by providing sediment trapping. Graded areas with smooth surfaces increase the potential for accelerated erosion; therefore, surfaces should be left in a roughened condition whenever possible.

SOIL-22 On steep slopes (greater than 30 percent) or in areas of concentrated flows (e.g., waterways) erosion control matting or riprap may be used to stabilize the surface and increase infiltration times.

SOIL-23 Areas graveled for stabilization will be inspected to ensure depressions caused by vehicle traffic are filled and runoff is not being directed toward wetlands or other receiving waters.

SOIL-24 Roughened surfaces should be periodically inspected for rills and washes. Areas exhibiting accelerated erosion will be filled and reseeded as necessary or determined by the BLM or USFS Authorized Officer or his/her designated representative.

SOIL-25 Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.

REC-15 Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.

REC-17 Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the Stormwater Pollution Prevention Plan (SWPPP) to stabilize the stockpile and limit erosion and standing water, control dust,

and control the establishment of noxious or invasive weeds in stockpiled soils.

REC-20 Temporarily disturbed lands within the ROW will be re-contoured to blend with the surrounding landscape. Re-contouring will emphasize restoration of the existing drainage patterns and landform to preconstruction conditions, to the extent practicable. (Tower pads will not be recontoured.)

Air Quality and Dust Control

AIR-1 Minimize idling time for diesel equipment whenever possible.

AIR-2 Ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.

AIR-3 Prohibit engine tampering to increase horsepower.

AIR-4 Reduce construction-related trips as feasible for workers and equipment, including trucks.

AIR-5 Dust suppression techniques will be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.

FISH-2 When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS).

SOIL-18 Construction water and water used for dust control will come from permitted sources identified by the Construction Contractor and a map showing the locations of these sources will be provided to the CIC. If the quality of the water is found to be causing any environmental changes (i.e., dying vegetation, excessively hard crusting of soils), the Construction Contractor will test the quality of the water and provide the results to the BLM for review.

SOIL-19 All Project personnel will be educated on dust control procedures.

WQA-29 If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.

6.0 MONITORING MEASURES

Maintenance and monitoring of erosion control measures will be implemented as described in the Framework SWPPP (Appendix F of the POD). Monitoring of erosion control mitigation measures in areas subject to reclamation activities will continue once

construction is complete as described in the Framework Reclamation Plan (Appendix D of the POD).

7.0 OPERATION AND MAINTENANCE PHASE

After construction and reclamation, monitoring the erosion control mitigation measures will continue until affected soils have been stabilized. These measures will be applied during for new ground disturbing operation and maintenance activities. Monitoring should continue until there is no or minimal accelerated erosion or air emissions.

APPENDIX O
FRAMEWORK FIRE PREVENTION AND SUPPRESSION PLAN

Appendix O

Framework Fire Prevention and Suppression Plan

Gateway West Transmission Line Project

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion of three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Fire Prevention and Suppression Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This Plan describes the framework for measures to ensure fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations. Measures identified in this Plan apply to work within or pertaining to all Project facilities during construction and operation. The Construction Contractor will be responsible for development of the Final Fire Prevention and Suppression Plan, including mapping of safe locations/cleared areas to go to in the event of a fire that exceeds immediate control.

1.1 Purpose

The risk of fire danger during Project construction is related to various activities including but not limited to refueling activities, operating vehicles and other equipment off roadways, welding activities, and the use of explosive materials and flammable liquids. During operation, the risk of fire is primarily from vehicles and maintenance activities that require welding. Additionally, weather events that affect the Project could result in the transmission line igniting a fire.

This Plan establishes standards and practices to minimize risk of fire ignition and, in case of fire, provide for immediate suppression that will be incorporated into the Final Fire Prevention and Suppression Plan.

1.2 Wildfire Protection System

The prevention and suppression of wildfires in southern Wyoming is carried out by the BLM, USFS, BOR, and local fire districts and agencies (Table 1-1). The agencies' activities are closely coordinated, primarily through the National Interagency Fire Center in Boise, Idaho, and Regional Interagency Dispatch Centers in Casper, Wyoming, and Rawlins, Wyoming. Individual fire crews from BLM field offices and USFS Ranger Districts coordinate fire suppression activities on federal land within their jurisdictions. The Wyoming State Forestry Division (WSFD) is responsible for fire suppression on Wyoming state land. Local fire districts and agencies provide fire prevention and suppression activities on private land, and may assist with fires on state or federal lands as requested by those agencies.

Table 1-1. Fire Suppression Responsibilities in Segment D

Who	Where	Miles of Proposed Route
Bureau of Land Management	National System of Public Lands	187
U.S. Forest Service	National Forest (NF) and National Grasslands	13.7
Bureau of Reclamation	Bureau of Reclamation Lands	3.2
Wyoming State Forestry Division, Idaho Department of Lands	Wyoming or Idaho State Lands	51.8
City fire departments and rural fire protection districts in mutual aid pacts	Project-related facilities in Wyoming's or Idaho wildland interface areas covered by mutual-aid agreements.	233

Source: GIS Ownership_Analysis_20111219.xlsx.

Wildland fire suppression and fire-management activities in Idaho are organized through the National Interagency Fire Center in Boise, Idaho, and locally on federal land by individual BLM field offices or USFS Ranger Districts. Various mutual-aid agreements with community fire departments and the Idaho Department of Lands (IDL) are in force throughout the Project area.

1.3 Responsibilities and Coordination

This Plan will be implemented by the Companies and the Construction Contractor on the Project. The Construction Contractor will be responsible for providing all necessary fire-fighting equipment on the Project site to their respective employees and operating under the requirements of this Plan and the to-be-developed Final Fire Prevention and Suppression Plan.

It will be the responsibility of the Construction Contractor to notify the applicable land management agency when a Project-related fire occurs within or adjacent to the construction area. The Construction Contractor will be responsible for any fire started, in or out of the Project area, by its employees or operations during construction. The Construction Contractor will be responsible for fire suppression and rehabilitation. The Construction Contractor will take safe and immediate action to prevent and suppress fires on and adjacent to the Project area that are a result of contractor activities. The Construction Contractor will use its workers and equipment on the Project for preventing the spread of fires started by contractor activities unless the fire exceeds immediate control, at which time all Construction Contractor employees will exit the area to predetermined locations safe from wildfire.

All federal, state, and county laws, ordinances, rules, and regulations, which pertain to prevention, pre-suppression, and suppression of fires, will be strictly adhered to by the Construction Contractor. All personnel will be advised of their responsibilities under the applicable fire laws and regulations.

Costs involved with Construction Contractor-caused fires will be charged to the Construction Contractor. There will be no extension of time for construction-based delays caused by Construction Contractor-related fires. Specific construction related activities and safety measures will be implemented during construction of the Project to prevent fires and to ensure quick response and suppression in the event a fire occurs as specified in this Plan and the to-be-developed Final Fire Prevention and Suppression Plan.

Prior to construction, the Construction Contractor will contact the appropriate fire-control authorities to establish communications, obtain any required permits (such as burning or fire waiver permits prior to conducting any heavy equipment or burning activities), and/or fulfill other obligations as directed by fire-control authorities.

The Construction Contractor will ensure the following:

- Prevention, detection, pre-suppression, and suppression activities are in accordance with this Plan and federal, state, and county laws; ordinances; and regulations pertaining to fire.
- Accompany agency representatives on fire tool and equipment inspections and take corrective action upon notification of any fire-protection requirements not in compliance.
- Restrict operations on federal lands during conditions of high fire danger as described in Section 2.2, Restricted Operations.

The fire prevention and suppression measures described in this Framework Plan and the to-be-developed Final Fire Prevention and Suppression Plan will be in effect throughout the life of the Project. These restrictions may change by advance written notice by fire-control authorities.

2.0 FIRE PREVENTION MEASURES

2.1 Preconstruction and Construction

Methods and procedures to be implemented prior to and during construction, operation, maintenance, and termination of the Project to minimize the risk of fire are described in the following sections.

2.1.1 Training

The Construction Contractor will train all personnel on the measures to take in the event of a fire. The Construction Contractor will also inform each construction crew member of fire dangers, locations of extinguishers and equipment, safe locations and escape routes should a fire exceed immediate control and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules also will be discussed with the Construction Contractor and all field personnel during the Project's environmental training.

2.1.2 Smoking

Smoking signs and fire rules regarding the Project will be posted on the Project bulletin board at the Construction Contractor's field office, at all show-up locations, and on all portable toilet doors during the fire season (to be determined by the BLM Authorized Officer or his/her designated representative).

2.1.3 Spark Arrestors

All equipment assigned to the Project will be inspected and approved by the Construction Contractor. Internal combustion engines (stationary or mobile) will be equipped with spark arrestors that meet agency standards, and for which the following standards will apply:

- Light trucks and cars with factory-installed (type) mufflers (in good condition) may be used on roads where the roadway is cleared of all vegetation.
- On roads where vegetation exists, spark arrestors will be used.
- Spark arrestors will be in good working order.
- Vehicles equipped with catalytic converters may represent potential fire hazards and will be parked on areas where vegetation is less than 8 inches tall.
- If required, flues used in extra work areas will be equipped with spark arrestors in good working order and meets agency standards.

Agency fire inspection officers will have full authority to inspect spark arrestors on Project equipment prior to its use on federal lands within the Project area and periodically during construction.

2.1.4 Parking, Vehicle Operation, and Storage Areas

In no case will motorized equipment, including worker transportation vehicles, be driven or parked outside the designated and approved work limits. Equipment parking areas, the right-of-way (ROW), staging areas, designated vehicle-parking areas, and small stationary engine sites—where permitted—will be cleared of all flammable material. Clearing will extend a minimum of 2 feet beyond the edge of the area to be occupied but not beyond the boundaries of the approved ROW, extra workspace, or ancillary site. Glass containers will not be used to store gasoline or other flammables.

2.1.5 Equipment

All motorized vehicles and equipment in each active construction area (spread) will carry the following:

- One long handled round point, size 0 shovel;
- One axe or Pulaski fire tool;
- Equipment will carry extinguishers rated ABC-10 pound minimum and vehicles will carry ABC-2.5 pound minimum;
- One 5-gallon water backpack (or other approved container) full of water or other extinguishing solution; and
- Hardhat, work gloves, and eye protection.

All equipment will be kept in a serviceable condition and readily available.

The Construction Contractor shall maintain a list, to be provided to local fire-protection agencies, of all equipment that is either specifically designed for or capable of being adapted to fighting fires. The Construction Contractor shall provide basic fire-fighting equipment on-site during construction, including fire extinguishers, shovels, axes, and other tools in sufficient numbers so each employee on-site can assist in the event of a fire-fighting operation.

2.1.6 Road Closures

The Construction Contractor will notify the appropriate fire-suppression agency of the scheduled closures prior to the open-cut crossing of a road. If required, the Construction Contractor will construct a bypass prior to the open-cut installation of a road crossing, unless a convenient detour can be established on existing Project-approved roads or within Project-approved work limits. All bypasses will be clearly marked by the Construction Contractor. During road closures, the Construction Contractor will designate one person who knows the bypass to direct traffic. The Construction Contractor will minimize, to the extent possible, the duration of road closures.

2.1.7 Refueling

Fuel trucks will have a large fire extinguisher charged with the appropriate chemical to control electrical and gas fires. The extinguisher will be a minimum size 35-pound capacity with a minimum 30 BC rating. Power-saw refueling will be done in an area that has first been cleared of flammable material.

2.1.8 Burning (Not Allowed)

No burning activities, campfires, or barbecues will be allowed in Project construction areas.

2.1.9 Flammable Liquids and Explosives

The handling and use of explosives shall be conducted in strict conformance with all local, state, and federal regulations as detailed in the Companies' Construction Specification on Blasting.

2.1.10 Communications

The Construction Contractor will be responsible for maintaining contact with fire-control agencies and will be equipped with a radio or cellular telephone to enable immediate contact with local fire-control agencies. If cellular telephone coverage is not available, the Construction Contractor will use the radio to contact their base, who will telephone emergency dispatch.

2.1.11 Welding

One 5-gallon backpack pump will be required with each welding unit in addition to the standard fire equipment required in all vehicles. All equipment will be kept in a serviceable condition and readily available.

Any spark-producing equipment or tools, including welding, cutting, drilling steel or grinding, will require wetting or removing flammable vegetation to an area large enough to contain all sparks (minimum of 10 feet around activity). The Construction Contractor's Construction Manager must approve any welding, grinding, or cutting. A spark shield is required. At least one person will be designated as a "spotter" to watch for ignitions while equipped with suppression tools including fire extinguishers, a shovel, and a backpack water pump. The "spotter" will not be the same person who is engaged in welding, cutting, grinding or drilling. The "spotter" will remain on the scene for at least one hour after the work has been completed to ensure no fire risk exists. In addition, these activities will stop one hour before all fire suppression personnel leave a construction area to reduce the possibility of smoldering to ignite a fire. Vehicles assigned to this work will be equipped with fire suppression equipment.

2.1.12 Fire Suppression

The Construction Contractor will take the following actions should a fire occur within the Project area during construction:

- Take immediate action to suppress fires using all available manpower and equipment.

- Immediately notify the nearest fire-suppression agency of the fire location, action taken, and status (see Section 4.0).
- Immediately notify the Companies of the fire location and action taken.
- Relinquish fire-suppression activities to agency fire-management officers upon their arrival.

If a reported fire is controlled, the Construction Contractor will note the location and monitor the progress in extinguishing the fire. A Construction Contractor's employee will remain at the fire scene until it is fully extinguished. The extinguished fire will be monitored in accordance with procedures described in Section 2.3 of this document.

If the fire is unmanageable, field crews will evacuate via planned escape routes to predetermined safe locations (e.g., cleared areas) and first call 911, then the district dispatch for the area (refer to emergency contacts listed in Table 4-1). All fires must be reported to the jurisdictional fire agency regardless of size and actions taken.

2.2 Restricted Operations

The Construction Contractor will restrict or cease operations in specified locations during periods of high fire danger at the direction of the land management agency's closure order. Restrictions may vary from stopping certain operations at a given time to stopping all operations.

The Construction Contractor will monitor daily for local fire restrictions. It is the Construction Contractor's responsibility to ensure personnel are aware of and following area fire orders.

2.2.1 Fire Danger Ratings

Fire Danger Ratings will be used to direct daily activities and in field crew safety briefings. Fire Danger Ratings take into account current and antecedent weather, fuel types, and both live and dead fuel moisture, and will be used by the land management agency in determining mitigation or curtailment of operations.

Fire Danger Ratings and their descriptions are available on the Wildland Fire Assessment website at: http://www.wfas.net/index.php/fire-danger-rating-fire-potential--danger-32.

2.2.2 Red Flag Warnings

When the National Weather Service has issued a Red Flag Warning for low humidity and high winds, the Fire Precaution Levels in Table 2-1 will be adhered to. The Red Flag Warnings are posted on http://www.wrh.noaa.gov/firewx/main.php.

Table 2-1. Fire Precaution Levels

Fire Danger Rating	No Red Flag	Red Flag
Low	Normal fire precautions.	Consider additional measures and resources.
Moderate	Normal fire precautions.	Consider additional measures and resources.
High	One engine[1/] is required for blasting.	One engine[1/] is required for blasting, welding, cutting, and grinding, AND operations will shut down from noon until 8 p.m.
Very High	One engine[1/] is required for blasting, welding, cutting, and grinding.	Two engines[1/] required for blasting, welding, cutting, and grinding AND operations will shut down from 10 a.m. until 8 p.m.
Extreme	Two engines[1/] required for blasting, welding, cutting, and grinding AND operations will shut down from 10 a.m. until 8 p.m.	Unless authorized by the jurisdictional land management agency, ALL OPERATIONS SHUT DOWN EXCEPT on mineral soil involving watering or equipment maintenance.

1/ Minimum fire suppression vehicle and equipment requirements are presented in Section 2.1.5 – Equipment.

2.2.3 Industrial Fire Precaution Levels

BLM and the USFS use the same four-level industrial regulation system. This system, which helps prevent wildfires by regulating work in the woods, is known as the Industrial Fire Precaution Level (IFPL) system. The four levels are:

- **Level I**: Closed Fire Season – fire equipment and firewatch service is required.
- **Level II:** Partial Hootowl – limits certain activities to occur only between the hours of 8 p.m. and 1 p.m.
- **Level III:** Partial Shutdown – prohibits some activities altogether and limits other activities to occur only between the hours of 8 p.m. and 1 p.m.
- **Level IV:** General Shutdown – All operations prohibited.

The Construction Contractor shall check the forecasted and current weather, Fire Danger Ratings, and Fire Precaution Levels each day of operation. If there are questions as to the level of fire danger and operations, the Construction Contractor or Compliance Inspection Contractor (CIC) shall contact the appropriate land management agency prior to conducting work. Regardless of the fire danger or warnings, the Construction Contractor and CIC must determine when additional measures should be taken or operations should be shut down due to periods of extreme dryness and wind.

The Companies may obtain approval to continue some or all operations if acceptable precautions are implemented. A written waiver must be issued to the Construction Contractor.

2.3 Inspections

The Construction Contractor will be responsible for compliance with all provisions of this Plan. In addition, federal, state, and local fire-control agencies may perform inspections in areas under their jurisdiction at their discretion.

3.0 OPERATION AND MAINTENANCE

During Project operation and maintenance, the Final Fire Prevention and Suppression Plan will be implemented, including all measures and stipulations contained therein.

4.0 NOTIFICATION PROCEDURES

The Construction Contractor will notify the CIC and the Companies, who will immediately notify the BLM Authorized Officer or his/her designated representative and the USFS, of any fire started in the Project area during construction. During operation and maintenance activities, the Companies' maintenance or contract crews will be responsible for the immediate notification of any fire started in the Project area. The Construction Contractor and the Companies will have notification numbers readily available for all employees in case of fire, and will update the following emergency contact numbers for any changes prior to construction or maintenance within the Project area.

Table 4-1. Fire Notification Numbers*****

In Case of Emergency - Call 911 **Fire – Call 911 First**		
Casper:	**Rawlins:**	**Rock Springs:**
Pocatello:	**Converse County:**	**Natrona County:**
Carbon County:	**Sweetwater County:**	**Lincoln County:**
Bear Lake County:	**Franklin County:**	**Bannock County:**
Regional Interagency Dispatch Centers in: Casper, Wyoming, and Rawlins, Wyoming (307) 261-7691	**National Interagency Fire Center in**: Boise, Idaho (208) 387- 5512	
BLM Authorized Officer or Designated Representative:	**BLM Rawlins Field Office** PO Box 2407 Rawlins, WY 82301 (307) 328-4282	**BLM Kemmerer Field Office** 312 Highway 189 North Kemmerer, WY 83101 (307) 828-4505
USFS Authorized Officer or Designated Representative:	**BLM Rock Springs Field Office** 280 Highway 191 North Rock Springs, WY 82901 (307) 352-0334	**Caribou/Targhee National Forest** 1405 Hollipark Drive Idaho Falls, ID 83401 (208) 847-8935

Table 4-1. Fire Notification Numbers* (continued)

In Case of Emergency - Call 911 **Fire – Call 911 First**		
BLM Pocatello Field Office 4350 Cliffs Drive Pocatello, ID 83204 (208) 478-6341	**BLM Casper Field Office** 2987 Prospector Drive Casper, WY 82604 (307) 261-7522	**Medicine Bow –Routt National Forest** 2468 Jackson Street Laramie, WY 82070 (307) 358-7102
BLM Wyoming State Office PO Box 1828 Cheyenne, WY 82003 (307) 775-6189		

*Completed table to be included in Final Fire Prevention and Suppression Plan

5.0 POST-FIRE REHABILITATION STRATEGIES

If the cause of a fire is determined to be the result of the Project, the Construction Contractor will implement rehabilitation measures as required by the land management agency, and the following post-fire rehabilitation measures will be implemented by the Construction Contractor:

- After a fire has been extinguished, the burn areas will be reclaimed in accordance with BLM and/or USFS requirements. Small burn areas will be revegetated with native vegetation using appropriate seed mixtures as identified in Final Reclamation Plan.
- Larger burn areas may require specific reclamation plans. Coordination with the BLM and USFS is necessary to determine requirements for each particular area, depending on the size and location of a fire, and the location of sensitive resources.
- To prevent the spread of noxious weeds and invasive species during post-fire rehabilitation, the measures as outlined in the Final Noxious Weed Plan will be implemented by the Construction Contractor.

6.0 ENVIRONMENTAL PROTECTION MEASURES

The following fire prevention- and suppression-related Project EPMs will be adhered to during construction, operations and maintenance on a Project-wide basis, as applicable. A complete list of all EPMs to be implemented for the Project is presented in Appendix Z of the Plan of Development.

FIRE-1 Train all personnel about the measures to take in the event of a fire including fire dangers, locations of extinguishers and equipment, emergency response, and individual responsibilities for fire prevention and suppression.

FIRE-2 Equip all construction equipment operating with internal combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with spark arrestors. Qualified spark arrestors will be in a maintained and nonmodified condition and meet U.S. Department of Agriculture USFS Standard 5100-1a, or the Society of Automotive Engineers Recommended Practices J335 or J350. Refer to 43 Code of Federal Regulations §8343.1.

FIRE-3 Restrict motorized equipment, including worker transportation vehicles, to the designated and approved work limits. Operate all vehicles on designated roads or park in areas where vegetation is less than 8 inches tall. Vehicles, including the undercarriages, will be cleared of vegetation accumulations and checked periodically to ensure no buildup of flammable vegetation.

FIRE-4 Require all motor vehicles and equipment to carry, and individuals using handheld power equipment to have, specified fire prevention equipment. Carry shovels, water, and fire extinguishers on all equipment and vehicles. Equipment will carry extinguishers rated ABC-10 pound minimum and vehicles will carry ABC-2.5 pound minimum.

FIRE-5 Provide a list of equipment capable of being adapted to fighting fires to local fire protection agencies.

FIRE-6 Notify the appropriate fire suppression agencies of scheduled road closures.

FIRE-7 Prohibit burning of slash, brush, stumps, trash, explosives storage boxes, or other Project-generated debris unless authorized by the applicable land management agency.

FIRE-8 Designate a Fire Guard on each construction crew prior to the start of construction activities each day and provide a communications system for maintaining contact with fire control agencies.

FIRE-9 The Companies shall comply with fire restrictions and/or waivers as applicable.

FIRE-10 If a fire spreads beyond the suppression capability of workers with these tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.

FIRE-11 Initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If fire ignitions cannot be prevented or contained immediately, or it may be foreseeable to exceed the immediate capability of workers, the operation must be modified or discontinued. No risk of ignition or re-ignition will exist on leaving the operation area.

FIRE-12 Prior to any operation involving potential sources of fire ignition from vehicles, equipment, or other means, review weather forecasts and potential fire danger. Prevention measures to be taken each workday will be included in the specific job briefing. Consideration for additional

mitigation or discontinuing the operation must be given in periods of extreme wind and dryness.

FIRE-13 Operate welding, grinding, or cutting activities in areas cleared of vegetation within range of the sparks for that particular action. A spark shield adequate for the sparks may be used to prevent sparks from carrying. A spotter equipped with a round-nose shovel and two ABC-rated 5-pound fire extinguishers and a 5-gallon backpack waterpump is required to watch for ignitions during, and one hour after, the activity. Water may be used to wet down surrounding vegetation but does not take the place of an adequately cleared area and spark shield.

FIRE-14 No smoking will be allowed while operating equipment or while walking or working in areas with vegetation.

FIRE-15 Smoke only in cleared areas.

FIRE-16 In areas where smoking is allowed, completely extinguish all burning tobacco and matches and discard them in ash trays, not on the ground.

FIRE-17 Do not allow any fires or barbecues on the transmission line ROW, at material yards, substations, access roads, or other construction areas.

FIRE-18 Clear away all flammable material to a minimum of 10 feet, including snags (fallen or standing dead trees) from areas of operation where a spark, fire, or flame could be generated.

FIRE-19 If a fire does start by accident, take immediate steps to extinguish it (if it is safe to do so) using available fire suppression equipment and techniques taught at field crew emergency response training provided by the Construction Contractor or the Companies.

APPENDIX P
FRAMEWORK HAZARDOUS MATERIALS MANAGEMENT PLAN

Appendix P

Framework Hazardous Materials Management Plan

Gateway West Transmission Line Project

Prepared by:

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and

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation at Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Hazardous Materials Management Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to reduce risks associated with the use, storage, transportation, production, and disposal of hazardous materials are outlined in this Plan. The Construction Contractor will be responsible for development of the Final Hazardous Material Management Plan, including the creation of site maps containing storage and safety precautions for each location containing hazardous materials and hazardous wastes.

2.0 PURPOSE

The purpose of this Plan is to reduce the risks associated with the use, storage, transportation, production, and disposal of hazardous materials (including hazardous substances and wastes). This Plan will identify Project-specific environmental protection measures (EPMs) and other specific stipulations and methods to address spill prevention, response, and cleanup procedures for the Project. This document provides a template for the development of a detailed Final Hazardous Materials Management Plan to be developed by the Construction Contractor.

In conjunction with the Hazardous Materials Management Plan, a Final Spill Prevention, Containment, and Countermeasures (SPCC) Plan will be developed to identify specific legal requirements and practices to achieve identified goals. Refer to Appendix G – Framework Spill Prevention, Containment, and Countermeasures Plan of the POD for more information.

The term "hazardous material," as presented in this Plan, will refer to hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, and materials designated as hazardous for transportation as defined in 49 Code of Federal Regulations (CFR) 171.8.

The Final Hazardous Materials Management Plan will clearly identify which legal requirements apply to specific types of hazardous materials and will identify best management practices that, although not legally required, will be followed to reduce risks associated with hazardous materials. Nothing in this framework Plan or in the Final Hazardous Materials Management Plan (to be developed by the Construction Contractor) shall be construed as an admission regarding the legal applicability of requirements or practices to any particular class of hazardous material.

The objectives of this Plan are to 1) minimize the potential for a spill of fuel or other hazardous material, 2) contain any spill to the smallest possible area, 3) protect areas that are environmentally sensitive, and 4) provide a template for the development of a detailed Final Hazardous Materials Management Plan (by the Construction Contractor). This Plan includes the following components:

- A list of relevant regulations;
- A framework for developing the Final Hazardous Materials Management Plan;
- Spill control, response, and cleanup methods;
- An overview of the notification and documentation procedures to be followed in the event of a spill; and
- Operation and maintenance considerations.

In addition, sample hazardous materials management forms (which may be used as examples by the Construction Contractor) are provided in Attachment P-1.

In general, hazardous materials, hazardous wastes, and cleanup equipment will be stored in approved containers until they can be properly transported and disposed of at an approved treatment, storage, and disposal facility. Persons responsible for handling or transporting hazardous materials for the Project will be trained in the proper

use/management of the materials and should be familiar with all applicable laws, policies, procedures, and EPMs related to such handling or transportation.

It is the responsibility of the Construction Contractor to maintain file records of proper training/certification for any individual(s) who may potentially handle hazardous materials for the Project. The Companies reserve the right to audit any contractors and/or subcontractors to ensure compliance.

3.0 REGULATORY FRAMEWORK

Major legislation pertaining to hazardous materials includes the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act, Clean Air Act, and Clean Water Act.

Numerous other federal, state, and local regulations also govern the use, storage, transportation, production, and disposal of hazardous materials. Some of the key requirements of these laws are outlined in:

3.1 Occupational Safety and Health Administration (OSHA) (29 CFR 1900-1910)

- 28 CFR 1900-1910 Occupational Safety and Health Act
- 29 CFR 1904 Recording and Reporting Occupational Injuries and Illness
- 29 CFR 1910.120 Hazard Communication
- 29 CFR 1926 Safety and Health Regulations for Construction

3.2 Clean Water Act (40 CFR 100-149)

- 40 CFR 110 Discharges of Oil
- 40 CFR 112 Oil Pollution Prevention
- 40 CFR 116 Designation of Hazardous Substances
- 40 CFR 117 Determination of Reportable Quantities for Hazardous Substances
- 40 CFR 129 Toxic Pollutant Effluent Standards
- 40 CFR 131 Water Quality Standards
- 40 CFR 141-149 Safe Drinking Water Act

3.3 Clean Air Act (40 CFR 50-99)

- 40 CFR 50 National Ambient Air Quality Standards
- 40 CFR 61-63 National Emissions Standards for Hazardous Air Pollutants

3.4 Toxic Substances Control Act (TSCA) (40 CFR 700-799)

- 40 CFR 710 TSCA Chemical Inventory Regulations
- 40 CFR 761 PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions

3.5 CERCLA/Superfund Amendments and Reauthorization Act (40 CFR 300-399)

- 40 CFR 300 National Oil and Hazardous Substances Pollution Contingency Plan
- 40 CFR 302 Designation, Reportable Quantities, and Notification
- 40 CFR 355 Emergency Planning and Notification
- 40 CFR 370 Hazardous Chemical Reporting: Community Right-to-Know
- 40 CFR 372 Toxic Chemical Release Reporting: Community Right-to-Know

3.6 Solid and Hazardous Wastes (40 CFR 239-299)

- 70 CFR 201-211 Noise Abatement Programs
- 40 CFR 243 Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
- 40 CFR 260 Hazardous Waste Management System: General
- 40 CFR 261 Identification and Listing of Hazardous Waste
- 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 273 Standards for Universal Waste Management
- 40 CFR 279 Standards for the Management of Used Oil

3.7 Hazardous Materials Transportation Act (49 CFR 100-199)

- 49 CFR 130 Oil Spill Prevention and Response Plans
- 49 CFR 171 General Information, Regulations, and Definitions
- 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- 49 CFR 177 Carriage by Public Highway

3.8 Wyoming-Specific Regulations

- Wyoming Department of Environmental Quality (WDEQ) Wyoming Air Quality Standards and Regulations (WAQSR) Chapter 1 Wyoming Environmental Quality Act
- WAQSR Chapter 2 Ambient Standards
- WAQSR Chapter 3 General Emissions Standards
- WAQSR Chapter 6 Permitting Requirements
- WAQSR Chapter 7 Monitoring Requirements
- WAQSR Chapter 8 Non-attainment Area Regulations
- WAQSR Chapter 9 Visibility Impairment/PM Fine Controls

- WAQSR Chapter 13 Mobile Sources
- WDEQ Water Quality Standards (WQS) Chapter 1 Surface Water Quality Standards
- WQS Chapter 4 Regulations for Release of Oil and Hazardous Substances into Waters of the State
- WQS Chapter 8 Quality Standards for Wyoming Groundwater
- WQS Chapter 9 Wyoming Groundwater Pollution Control Permit
- WDEQ Solid and Hazardous Waste Division (SHWD) Hazardous Waste Permitting and Corrective Action
- SHWD Voluntary Remediation
- SHWD Inspection and Compliance
- SHWD Storage Tank Program

3.9 Idaho-Specific Regulations

- Idaho Department of Environmental Quality (IDEQ) Idaho Administrative Procedures Act (IDAPA) IDAPA 58.01.01 Rules for the Control of Air Pollution in Idaho
- IDAPA 58.01.02 Water Quality Standards
- IDAPA 58.01.05 Rules and Standards for Hazardous Waste
- IDAPA 58.01.11 Ground Water Quality Rule
- IDAPA 58.01.18 Land Remediation Rules
- IDAPA 58.01.24 Standards and Procedure for Application of Risk Based Corrective Action at Petroleum Release Sites

4.0 FINAL HAZARDOUS MATERIALS MANAGEMENT PLAN DEVELOPMENT AND IMPLEMENTATION

The following sections provide information regarding the required content of the Final Hazardous Materials Management Plan and the SPCC Plan (refer to Appendix G of the POD for more information), if applicable, per 40 CFR 112. The Construction Contractor shall provide all information requested in the forms included as Attachment P-1 to the Companies. In addition, the Construction Contractor shall complete any other required county, state, or federal forms.

4.1 Certifications, Amendments, and Designation of Coordinator/ Responsible Person

4.1.1 Certifications

The Construction Contractor shall certify all of the information provided in the Hazardous Materials Management Plan is accurate and complete to the best of their knowledge. The Construction Contractor also will certify they are committed to

implementing the Final Hazardous Materials Management Plan as written. If an SPCC Plan is required, per 40 CFR 112, the Construction Contractor additionally may be required to have the SPCC plan reviewed and certified by a registered professional engineer.

4.1.2 Amendments

The Construction Contractor shall agree to make all necessary and appropriate amendments to the Final Hazardous Materials Management Plan and submit any and all such amendments to the Companies and the appropriate county (if required), state, or federal authorities within seven days of finding that an amendment is necessary.

Amendments to the Hazardous Materials Management Plan shall be necessary under any of the following circumstances:

- Applicable laws or regulations are revised.
- A 100 percent or more increase of a previously disclosed hazardous material.
- Any handling of a previously undisclosed hazardous material subject to inventory requirements.
- A change in properties of a previously disclosed hazardous material (e.g. solid to liquid).
- A change of business address, name or ownership.
- The list of emergency coordinators changes.
- The list of emergency equipment changes.

The Construction Contractor may also be required to amend the applicable SPCC Plan, as required by the applicable regulations.

4.1.3 Coordinator/Responsible Person

The Construction Contractor shall identify an emergency coordinator/responsible person for hazardous materials management and emergency response. Two alternates shall also be identified. Business, residential, and mobile phone or pager numbers shall be provided for all three persons to allow for contact on a 24-hour basis. Primary and alternate emergency response coordinators shall be knowledgeable of the chemicals and processes involved in construction of the Project, and will have the authority to commit Construction Contractor resources to implement the Plan. They also shall have stop-work authority in case of non-compliance or danger to human health or the environment.

4.2 Facilities Description and Inventory of Materials

4.2.1 Site Maps

The Construction Contractor will provide site maps or facility maps in the Final Hazardous Materials Management Plan that contain storage and safety precautions for each location containing hazardous materials and hazardous wastes. Maps shall, at a minimum, include the following information:

- Orientation and scale;

- Total land area in square feet;
- Access and egress points;
- Buildings and/or temporary trailers;
- Parking areas;
- Adjacent land uses (if business, indicate business name);
- Surrounding roads, storm drains, and waterways (including streams and wetlands);
- Locations of hazardous materials and hazardous waste storage areas;
- Underground and above ground storage tanks;
- Containment or diversion structures (dikes, berms, retention ponds);
- Shutoff valves and/or circuit breakers;
- Location of emergency response materials and equipment;
- Location of material safety data sheets (MSDS), the Hazardous Materials Management Plan, and the SPCC Plan; and
- Location of emergency assembly area.

4.2.2 Inventory

The Construction Contractor shall provide a complete inventory of all hazardous materials. The Construction Contractor shall be responsible for consulting with the relevant agencies if they handle extremely hazardous substances. All inventory forms shall be provided to the Companies by the Construction Contractor as a part of the Final Hazardous Materials Management Plan.

5.0 HAZARDOUS MATERIAL AND WASTE MANAGEMENT

Construction, operation, and maintenance of the Project will require the use of certain potentially hazardous materials, such as fuels, oils, explosives, and pesticides. By definition, hazardous materials have the potential to pose a significant threat to human health and the environment based upon their quantity, concentration, or chemical composition. When stored, used, transported, and disposed of properly, as described below, the risks associated with these materials can be reduced substantially.

5.1 Overview of Hazardous Materials Proposed for Use

Hazardous materials used during Project construction may include petroleum products such as gasoline, diesel fuel, and hydraulic fluid; lubricating oils and solvents; cleansers; explosives; and other substances. Some of these materials will be used in relatively large quantities at material yards and in rare instances on the right-of-way (ROW) to operate and maintain equipment during construction. Explosives will be used for blasting rock where needed to install transmission towers and associated access roads (refer to Appendix M – Framework Blasting Plan).

Smaller quantities of other materials such as pesticides and fertilizers, paints, and chemicals (e.g., sulfur hexafluoride) may be used during Project operation and maintenance. Pesticides are hazardous materials and will be used according to labeling (see also Appendix E – Framework Noxious Weed Plan). The Construction Contractor will maintain an inventory of all hazardous materials used and MSDS for all materials. The Construction Contractor shall maintain copies of the required MSDS for each hazardous chemical and shall ensure that copies are readily accessible during each work shift to all employees when they are in their work area(s). The MSDS will provide basic emergency response information for small and large releases of hazardous materials. In the case that bulk hazardous materials are used, the Emergency Response Guidebook, produced by the U.S. Department of Transportation (USDOT), is an acceptable reference. The Construction Contractor should have a well-developed hazardous material program in place and work to use non-hazardous substances in routine construction and maintenance activities, to the extent possible.

5.2 Refueling and Servicing

Construction vehicles (trucks, bulldozers, etc.), helicopters, and equipment (pumps, generators, etc.) generally will be fueled and serviced in designated areas at least 100 feet from the bed and bank of streams (including intermittent and perennial) and wetlands (including dry or seasonal wetlands). Refueling locations generally should be flat to minimize the chance of a spilled substance reaching a stream. In most cases, smaller rubber-tired vehicles will be refueled and serviced at local gas stations or material yards. Tracked vehicles typically will be refueled and serviced on-site. In some cases, pickup trucks or tankers will be used to refuel and service construction vehicles on the ROW. Every effort will be made to minimize the threat of a fuel spill during refueling and servicing. Fuel/service vehicles will carry a suitable absorbent material to collect approximately 20 gallons of spilled materials. In addition, all vehicles will be inspected for leaks prior to being brought on-site and regularly throughout the construction period.

Washing of construction vehicles, such as concrete trucks, will be allowed only in designated areas at least 100 feet from streams and wetlands (as defined above). Washing areas will be contained with berms/barriers to prevent migration of wastewater and/or sediments into streams and waterways. Waste concrete material will be removed and properly disposed of once it has hardened. Additionally, all preventive measures, identified in Appendix E – Framework Noxious Weed Plan, will be followed.

5.3 Transportation of Hazardous Materials

Procedures for loading and transporting fuels and other hazardous materials will meet the minimum requirements established by the USDOT, Wyoming Department of Transportation, Idaho Transportation Department, and other pertinent regulations. Prior to transporting hazardous materials, appropriate shipping papers shall be completed. Transportation of hazardous materials should be performed by a hazardous materials transport firm in accordance with USDOT regulations. In addition, the Construction Contractor will ensure all handling or packaging of hazardous materials and all paperwork for transport of hazardous materials is performed by properly trained personnel in accordance with USDOT and applicable state regulations.

At all times, all hazardous materials used for the Project will be properly stored in approved containers and labeled, including during transportation. Smaller containers will be used on-site to transport needed amounts of hazardous materials to a specific location. Transfer of materials from large to small containers will be performed using appropriate equipment, including pumps, hoses, and safety equipment; hand pouring techniques will not be utilized. These smaller (service) containers also will be clearly labeled. Special provisions apply to the transportation of explosives (refer to Appendix M – Framework Blasting Plan).

5.4 Storage of Hazardous Materials

Hazardous materials will be stored only in designated material yards. Material yards will be located at least 500 feet from the edge of perennial and intermittent streams and wetlands (including dry or seasonal wetlands), 400 feet from public wells, and 200 feet from private wells, and will be able to contain the single largest quantity/unit stored at any one time, plus 10 percent. If material yards cannot be located at least 500 feet from streams and wetlands because of topographic conditions or space limitations, special precautions will be taken to prevent the spill or release of hazardous materials into the waterway. These precautions will include limiting the quantity and amount of time such materials are stored near waterways, fortifying barriers, providing additional containment between hazardous materials and the waterway, and using trained personnel to monitor activities at the yard. Cleanup materials, including absorbent spill pads and plastic bags, will also be stored in these areas. The Construction Contractor will specify the appropriate spill kit containing these materials in the Final Hazardous Materials Management Plan. Hazardous materials will not be stored in areas subject to flooding or inundation. The Construction Contractor shall coordinate with the Compliance Inspection Contractor (CIC) when storage areas cannot be located at least 500 feet from streams and wetlands, 400 feet from public wells, or 200 feet from private wells.

5.4.1 Physical Storage Requirements

Storage Containers: Containers holding hazardous waste or materials will be compatible with the wastes or materials stored. If the container is damaged or leaks, the waste must be transferred to a container in good condition. The Construction Contractor shall inspect containers weekly at a minimum to verify the integrity of the containers and any containment systems. Containers used for transportation must comply with USDOT and applicable state transportation requirements.

Incompatible Materials: Materials, including hazardous wastes, will not be placed in containers that previously held an incompatible waste or material.

Ignitable or Reactive Materials: Containers holding hazardous wastes or materials that are reactive or may ignite must be located at least 50 feet from the material yard's property line. "NO SMOKING" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive material.

Container Management: Containers holding hazardous wastes will be kept closed at all times, except when it is necessary to add or remove contents. Before the handling and/or transportation of containers carrying hazardous wastes, the containers should be inspected to ensure they are sealed such that no material spillage occurs.

Secondary Containment: Secondary containment will consist of bermed or diked areas that are lined and capable of holding 110 percent of the volume of the stored material and will be provided for liquid hazardous materials stored on-site.

Record Keeping: The Construction Contractor will maintain records of stored hazardous waste or materials through the reclamation period. The Construction Contractor will be required to provide the Companies with copies of sample results, shipping manifests, chain-of-custodies, and bills-of-lading for wastes transported for disposal upon request. The documentation will also describe the type and quantity of stored waste material.

Security: Hazardous wastes and materials will be stored in secure areas to prevent damage, vandalism, or theft. All storage containers will remain sealed when not in use and storage areas shall be secured (gated, locked, and/or guarded) at night and/or during non-construction periods.

Explosives: Storage of explosives is discussed in Appendix M – Framework Blasting Plan.

5.4.2 Container Labeling Requirements

The Construction Contractor shall comply with the following labeling requirements for any container (including tanks) used on-site to store accumulated hazardous wastes. Figure 5-1 shows an example of a hazardous waste label for on-site storage. The containers shall be labeled with the information below and as required in 40 CFR 262:

- The accumulation start date and/or the date the 90-day storage period began;
- The words: “Hazardous Waste”;
- The composition and physical state of the waste;
- Warning words indicating the particular hazards of the waste, such as flammable, corrosive, reactive or toxic; and
- The name and address of the facility that generated the waste.

HAZARDOUS WASTE
Contents: _____
Physical State (gas, liquid, solid): _____
Accumulation Start Date: _____
Hazards: _____
Name and Address of Generator: _____
_____
_____
Contact Person: _____
Telephone: _____
HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

Figure 5-1. Sample Hazardous Waste Label for On-Site Storage

5.5 Disposal of Hazardous Wastes

Hazardous wastes will be collected regularly and disposed of in accordance with all applicable laws and regulations. The Construction Contractor shall determine details regarding proper handling and disposal of hazardous waste and shall assign responsibility to specific individuals prior to construction of the Project.

Every effort will be made to minimize the production of hazardous waste during the Project, including, but not limited to, minimizing the amount of hazardous materials needed for the Project; using alternative non-hazardous substances when available; recycling usable material such as oils, paints, and batteries to the maximum extent; and filtering and reusing solvents and thinners whenever possible.

Any generator of hazardous waste must apply for a U.S. Environmental Protection Agency Identification (ID) Number. The ID number is needed to complete the Uniform Hazardous Waste Manifest to ship wastes off-site. A generator can accumulate hazardous wastes on-site for a period of up to 90 days without having to obtain a permit as a storage facility.

5.5.1 Contaminated Containers

Containers that once held hazardous materials as products or held hazardous wastes must be considered as potential hazardous wastes due to the possible presence of residual hazardous material. Regulations specify certain requirements, listed below, for the container to be handled as a non-hazardous waste.

- The containers must be empty, which means as much of the contents have been removed as possible using the practices commonly employed to remove materials from that type of container (e.g., pouring, pumping, and aspirating) so none will pour out in any orientation.
- A container that held compressed gas is empty when the pressure in the container approaches atmospheric.

- If empty containers are less than five gallons, they may be disposed of as a non-hazardous solid waste or scrapped.
- If the empty containers are greater than five gallons, they must be handled in the following manner: 1) returned to the vendor for re-use, 2) sent to a drum recycler for reconditioning, or 3) used or recycled on-site.
- All these actions must occur within one year of the container being emptied.

5.5.2 Waste Oil Filters

Used metal canister oil filters can be managed as non-hazardous wastes if:

- They are thoroughly drained of “free flowing” oil (oil exiting drop-by-drop is not considered “free flowing”).
- The filters are accumulated, stored, and transferred in a closed, rainproof container.
- The filters are transferred for the purposes of recycling.
- The filters are not terne-plated (an alloy of tin and lead).

Terne-plated oil filters are a hazardous waste, exhibiting the hazardous characteristic of lead. Terne-plated oil filters not recycled must be managed as a hazardous waste.

5.5.3 Used Lubricating Oil

Lubrication oil is considered a “used oil”, as defined below:

- Any oil that has been refined from crude oil and as a result of use has been contaminated with physical or chemical impurities.
- Any oil that has been refined from crude oil and, as a consequence of extended storage, spillage, or contamination with non-hazardous impurities such as dirt, rags, and water, is no longer useful to the original purchaser.
- Spent lubricating fluids that have been removed from a truck, heavy equipment, automobile, or bus.

Used oil may be a hazardous waste if:

- The concentrations of polychlorinated biphenyls (PCB) exceed 50 parts per million (ppm);
- Total halogens exceed 1,000 ppm and/or
- It is mixed with a hazardous waste.

Used oil not being burned or recycled must be managed as a hazardous waste unless it is determined to be non-hazardous through laboratory analysis.

6.0 ENVIRONMENTAL PROTECTION MEASURES

The following EPMs pertain to all vehicle refueling and servicing activities, as well as the storage, transportation, production, and disposal of hazardous materials/wastes. These EPMs are intended to prevent the discharge of fuels, oils, gasoline, and other harmful substances to waterways, groundwater aquifers, and/or other sensitive resource areas

during Project construction and maintenance. A complete list of all EPMs and their applicability is presented in Appendix Z of the POD.

OM-13 Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Pesticides or other chemical control will be selected from the BLM and USFS lists of previously approved pesticides and in accordance with any pesticide plans. If the federal land managing agency determines that a previously approved pesticide and/or plan is unacceptable, they shall notify the Companies.

OM-20 Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.

REC-5 All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (BLM 2007; http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.

WQA-13 Construction industry standard practices and BMPs will be used for spill prevention and containment.

WQA-14 Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.

WQA-15 All multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC plan will specify BMPs.

WQA-16 If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any

wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site.

WQA-17 If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.

WQA-18 For spills in standing water or where spilled materials reach water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water. Other actions will be taken, as necessary, to clean up contaminated waters.

WQA-21 Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.

WQA-22 Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.

WQA-32 Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will:

- Attempt to identify the source, composition, and hazard of the spill.
- Notify appropriately trained personnel immediately.
- Isolate and stop the spill, if possible, and begin cleanup (if it is safe).
- Initiate evacuation of the area, if necessary.
- Initiate reporting actions.

WQA-33 Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.

WQA-34 In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will

be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Companies.

WQA-35 If construction activity occurs within a wetland with standing water or a flowing stream prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and "wet" wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F – Framework Stormwater Pollution Prevention Plan).

WQA-36 Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations:

- Shovels
- Absorbent pads/materials
- Personal protective gear
- Medical first-aid supplies
- Bung wrench (nonsparking)
- Phone list with emergency contact numbers
- Storage containers
- Communications equipment

WQA-37 The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel (refer to Occupational Safety and Health Act requirements in UC, Title 34A, Chapter 6). Persons accountable for carrying out the procedures specified herein will be designated prior to construction and informed of their specific duties and responsibilities with respect to environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous Materials Management Plan. At a minimum, this training shall include the following:

- An overview of regulatory requirements
- Methods for the safe handling/storage of hazardous materials
- Spill prevention procedures
- Emergency response procedures
- Use of personal protective equipment

- Use of spill cleanup equipment
- Procedures for coordinating with emergency response teams
- Procedures for notifying agencies
- Procedures for documenting spills
- Identification of sites/areas requiring special treatment, if any

WQA-38 Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.

WQA-39 Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible including:

- current threats to human health and safety, include known injuries, if any
- spill location, including landmarks and nearest access route
- reporter's name and phone number
- time spill occurred
- type and estimated amount of hazardous materials involved
- potential threat to property and environmental resources, especially streams and waterways
- status of response actions

WQA-40 The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site.

- Wyoming DEQ (24 hours) at (307) 777-7781.
- Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610.
- If spill threatens human health, call 911, and the appropriate county response center.
- National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171.

The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction

Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.

WQA-41 When a spill poses a direct and immediate threat to health and safety and/or property, the BLM and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.

WQA-42 The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.

WQA-43 The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident):

- time and date of each log entry
- name of individual recording log entry
- list of all agencies notified, including name of individual notified, time, and date
- type and amount of material spill
- resources affected by spill
- list of response actions taken, including relative success
- copies of letters, permits, or other communications received from government agencies throughout the duration of the spill
- copies of all outgoing correspondence related to the spill
- photographs of the response effort (and surrounding baseline photographs if relevant)

WQA-44 During the Project's operation and maintenance phase, the Companies will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Companies and all operations and maintenance subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.

BLA-1 The Blasting Plan will identify blasting procedures including safety, use, storage, and transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.

BLA-2 All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of

explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).

BLA-10 The Blasting Plan for the proposed Project will also stipulate the following:

- Explosives will not be stored on federal land without prior written permission from the land-management agency. Copies of this permission will be posted on each magazine.
- Seventy-two hours advance notice of blasting activities will be given to the land-management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers.
- Warning signs will be erected and maintained at all approaches to the blast areas and flaggers will be stationed on all roadways passing within 1,000 feet of blasting activities.
- Explosives will not be primed or fused until just before use.
- Blasting will take place during daylight hours only and will be monitored with three axis seismographs to ensure safe vibration levels are not exceeded.
- Vibration measured as peak particle velocity will not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground structure (including water wells).

CON-1 All construction staff will be trained on the types of contamination that could be encountered and how to respond if contamination is encountered.

7.0 LITERATURE CITED

BLM (U.S. Department of the Interior, Bureau of Land Management). 2007. Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States. Available online at: http://www.blm.gov/wo/st/en/prog/more/veg_eis.html

ATTACHMENT P-1
SAMPLE HAZARDOUS MATERIALS MANAGEMENT FORMS

CERTIFICATIONS, ACKNOWLEDGMENTS, AND DESIGNATION OF EMERGENCY COORDINATOR

The Construction Contractor responsible for managing the material yards shall complete and submit the following information:

GENERAL INFORMATION

Business Name

Facility Street Address

( )

City County Zip Code Phone

Mailing Address (if different)

( )

City County Zip Code Phone

EMERGENCY COORDINATOR

	( )	( )	( )
Primary Emergency Coordinator	Business Phone	24-hour Phone	Pager/Cellular Phone
	( )	( )	( )
1st Alternate	Business Phone	24-hour Phone	Pager/Cellular Phone
	( )	( )	( )
2nd Alternate	Business Phone	24-hour Phone	Pager/Cellular Phone

Note: Certification is only necessary if an SPCC Plan is required (see Appendix G).

SPILL PREVENTION, CONTAINMENT, AND COUNTERMEASURE

The Construction Contractor shall identify all sources of potential spills including tank overflow, rupture, or leakage. Spill Prevention, Containment, and Countermeasure information must be included for all containers with a capacity of 55 gallons or greater that contain oil including petroleum, fuel oil, sludge, oil refuse, and oil mixed with waste.

(1) Material:_____ Total Quantity:_____
Location of use:_____
Potential direction of flow:_____ Maximum rate of flow:_____
Structures of equipment to contain spills:_____
_____

(2) Material:_____ Total Quantity:_____
Location of use:_____
Potential direction of flow:_____ Maximum rate of flow:_____
Structures of equipment to contain spills:_____
_____

(3) Material:_____ Total Quantity:_____
Location of use:_____
Potential direction of flow:_____ Maximum rate of flow:_____
Structures of equipment to contain spills:_____
_____

(4) Material:_____ Total Quantity:_____
Location of use:_____
Potential direction of flow:_____ Maximum rate of flow:_____
Structures of equipment to contain spills:_____
_____

EMERGENCY CHECKLIST

** DIAL 911 FOR EMERGENCY RESPONSE**

Emergency Coordinator:	_____	( ) _____ (day phone)	( ) _____ (night phone)
First Alternate:	_____	( ) _____ (day phone)	( ) _____ (night phone)
Second Alternate:	_____	( ) _____ (day phone)	( ) _____ (night phone)

_____ _____
Contractor Telephone Number

_____
Address

EMERGENCY NUMBERS

Emergency Response
(Ambulance, Fire, Police, Sheriff, State Highway Patrol) call 911

Poison Control Center (800) 456-7707

Nearest Hospitals (2) _____ Phone:_____
_____ Phone:_____

Cleanup Contractor _____ Phone:_____

Other (specify) _____ Phone:_____

Other (specify) _____ Phone:_____

AGENCY NOTIFICATIONS (to be made by the Companies' environmental manager or environmental field supervisor or emergency response coordinator)

Wyoming Department of Environmental Quality (307) 777-7937

Idaho Department of Environmental Quality (208) 373-0502

Division of Environmental Response and Remediation

National Response Center (800) 424-8802

Other (specify) _____ Phone #:_____
Other (specify) _____ Phone #_____

Note: The Construction Contractor shall verify and update the emergency numbers on this page before and during Project construction.

WEEKLY HAZARDOUS MATERIALS/WASTE INSPECTION LOG

For each item listed below, the Construction Contractor shall indicate whether existing conditions are acceptable (A) or unacceptable (U). Resolution of all unacceptable conditions must be documented. The Construction Contractor shall inspect all storage facilities on a regular basis, but not less than weekly. The Construction Contractor shall keep records of all inspections on file.

I. STORAGE AREAS FOR FUELS, LUBRICANTS, AND CHEMCIALS

General

A/U

____ Material yard and storage areas secured
____ National Fire Protection Association 704 system symbol posted in storage area or at material yard entrance
____ Storage areas properly prepared and signed
____ No evidence of spilled or leaking materials
____ Incompatible materials separated
____ All containers labeled properly
____ All containers securely closed
____ All containers upright
____ No evidence of container bulging, damage, rust, or corrosion
____ Material Safety Data Sheets available
____ Hazardous Materials Management and Spill Prevention Plans available

Secondary Containment Areas

A/U

____ Containment berm intact and capable of holding 110 percent of material stored
____ Lining intact
____ No materials overhanging berms
____ No materials stored on berms
____ No flammable materials used for berms

Compressed Gases

A/U

____ Cylinders labeled with contents
____ Cylinders secured from falling
____ Oxygen stored at least 25 feet away from fuel
____ Cylinders in bulk storage are separated from incompatible materials by fire barriers or by appropriate distance

II. HAZARDOUS WASTE MANAGEMENT

Waste Container Storage

A/U

____ No evidence of spilled or leaking wastes
____ Adequate secondary containment for all wastes
____ Separate containers for each waste stream – no piles
____ Waste area not adjacent to combustibles or compressed gases
____ All containers securely closed
____ Bungs secured tightly
____ Open-top drum hoops secured
____ All containers upright
____ No evidence of container bulging, corrosion
____ No severe container damage or rust
____ Containers are compatible with waste (e.g., plastic liner for corrosives, metal liner for solvents)
____ "No smoking" and general danger/warning signs posted

Waste Container Labeling

A/U

____ Containers properly labeled
____ Name, address, and EPA ID number or ID Number of generator listed
____ Accumulation start date listed
____ Storage start date listed
____ Chemical and physical composition of waste listed
____ Hazardous properties listed

Nonhazardous Waste Areas

A/U

____ No litter in material yard
____ No hazardous wastes with trash (e.g., contaminated soil, oily rags, or other oily materials)
____ Empty oil and aerosol containers for disposal as non-hazardous waste are completely emptied

III. EMERGENCY RESPONSE EQUIPMENT

A/U

____ Shovels
____ Absorbent material
____ Personal protective equipment (tyvek suit, gloves, goggles and booties, as appropriate)
____ Fire-fighting equipment
____ First aid supplies (e.g., medical supplies, squeeze bottle eye wash)
____ Communication equipment
____ Bung wrench (non-sparking)

IV. CORRECTIVE ACTIONS TAKEN (Required for all unacceptable conditions)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Date: _____ **Company (print):**_____

Inspected by (print):_____

Signature:_____

APPENDIX Q
FRAMEWORK CONSTRUCTION EMERGENCY PREPAREDNESS AND RESPONSE PLAN

Appendix Q

Framework Construction Emergency Preparedness and Response Plan

Gateway West Transmission Line Project

Prepared by:

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modification at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Construction Emergency Preparedness and Response Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This Plan describes the framework for measures to prepare for and effectively respond to emergency situations. The Construction Contractor will be responsible for development of the Final Construction Emergency Preparedness and Response Plan.

2.0 PURPOSE

The purpose of this Plan is to provide an overview of methods to be implemented if the need for emergency management is imminent. This document discusses the existing support structure, chain of command, and emergency communication protocols to be used as a guide for development of the Final Construction Emergency Preparedness

and Response Plan to be completed by the Construction Contractor and approved by the BLM.

Emergency response procedures will be implemented for the following potential events, or similar events:

- Downed transmission lines, structures, or equipment failure;
- Fires;
- Sudden loss of power;
- Natural disasters; and/or
- Serious personal injury.

The purpose of a Construction Emergency Preparedness and Response Plan is to provide clear procedures and information to enable the Companies, the Construction Contractor, the Compliance Inspection Contractor (CIC), and BLM Project Manager to prepare for and effectively respond to emergency situations. The primary objective of this Plan is to prevent adverse impacts to human health and safety, property, and the environment that could potentially occur as a result of the construction of the Project. More specific emergency procedures for blasting, fire, and hazardous materials are included in Appendices M – Framework Blasting Plan, O - Framework Fire Prevention and Suppression Plan, and P – Framework Hazardous Materials Management Plan of the POD.

3.0 REGULATORY COMPLIANCE

Health and safety guidelines related to high-voltage transmission lines are provided by a number of sources, including the National Electric Safety Code, American National Standards Institute, American Medical Association Council on Scientific Affairs, American Conference of Governmental Industrial Hygienists, various state regulations, and other organizations. The Occupational Safety and Health Administration (OSHA) also provides regulations for construction activities.

4.0 RESPONSIBILITIES

The Companies and the Construction Contractor are responsible for the effective response to any emergency situation or event related to the construction of the Project. To ensure a coordinated and effective response, a chain of command will be developed as part of the Final Construction Emergency Preparedness and Response Plan and followed in the event of an emergency.

In the establishment of a chain of command, considerations such as the level of activation and the participation necessary to respond to specific situations are to be taken into account. The following are factors for the establishment of a chain of command:

- Type of event (natural, environmental, electrical supply/outage, external forces);
- Severity and geographic area (multiple or combination of events);
- Anticipated duration;
- Multi-division/discipline response required; and

- External agency coordination.

5.0 RESPONSE COORDINATION

The amount of resources and coordination required for response to a specific hazard or emergency is determined by type, severity, location, and duration of the event. Most events require managing at the field operations level and will require increasing resource requirements to match the severity and duration of the event. This emergency management organization will be included as part of the Final Construction Emergency Preparedness and Response Plan and will provide increasing levels of resources and coordination necessary to support immediate or escalating emergency events.

6.0 EMERGENCY COMMUNICATIONS

Effective communication and exchange of information is essential in every emergency response. Misdirected, incorrect, or untimely information can be detrimental and even increase the threat to life or property. As an emergency event escalates, the rapid increase of information creates chaos and confusion. Simple communication diagrams can help to alleviate this situation.

6.1 Emergency Contact List

In case of emergency, call 911 first. Additional potential emergency contacts to be included in the Final Construction Emergency Preparedness and Response Plan are listed in Table 6-1 and should be contacted as appropriate, depending on the situation (e.g., fire, injury). Further guidance on emergency response, notification, and reporting protocols are included in Appendices M – Framework Blasting Plan, O - Framework Fire Prevention and Suppression Plan, and P – Framework Hazardous Materials Management Plan.

Table 6-1. Emergency Contact List[1/]

In Case of Emergency - Call 911 **Fire – Call 911 First**		
Federal, State and County Government Representatives		
BLM Casper Field Office: (307) 261-7522	**Bannock County:**	**Franklin County:**
BLM Pocatello Field Office: (208) 478-6341	**Bear Lake County:**	**Lincoln County:**
BLM Rawlins Field Office: (307) 328-4282	**Carbon County:**	**Natrona County:**
BLM Rock Springs Field Office: (307) 352-0334	**Converse County:**	**Sweetwater County:**
BLM Wyoming State Office: (307) 775-6189	**BLM Idaho State Office:** (208) 373-4000	**Medicine Bow-Routt National Forest:** (307) 358-7102
Caribou/Targhee National Forest: (208) 847-8935	**Regional Interagency Dispatch Centers** in: Casper and Rawlins, WY (307) 261-7691	**National Interagency Fire Center** in: Boise, Idaho (208) 387-5512
State and Police and County Sheriffs		
Bannock County:	**Franklin County:**	
Bear Lake County:	**Lincoln County:**	

Table 4-1. Emergency Contact List (continued)

In Case of Emergency - Call 911 **Fire – Call 911 First**		
Carbon County:	**Natrona County:**	
Converse County:	**Sweetwater County:**	
Wyoming Highway Patrol: (307) 777-4301	**Idaho State Police** (208) 884-7000	
Poison Control		
National Poison Control: (800) 222-1222 Provides connection to counties		
Hospitals And Clinics		
Bannock County:	**Franklin County:**	
Bear Lake County:	**Lincoln County:**	
Carbon County:	**Natrona County:**	
Converse County:	**Sweetwater County:**	
Hazardous Spill Response And Notification – Call 911 Directly after 911 notification, the following mandatory notifications will be made by the Compliance Inspection Contractor. Select and notify the appropriate government agency(ies) based on geographic location of the spill site. Also refer to Appendix P – Hazardous Materials Management Plan Framework**.**		
BLM Casper Field Office:	**Bannock County:**	**Franklin County:**
BLM Pocatello Field Office:	**Bear Lake County:**	**Lincoln County:**
BLM Rawlins Field Office:	**Carbon County:**	**Natrona County:**
BLM Rock Springs Field Office:	**Converse County:**	**Sweetwater County:**
Idaho Bureau of Homeland Security, Emergency Ops Center: (208) 422-5019	**Wyoming Office of Homeland Security:** (307) 635-6017	**Idaho Department of Environmental Quality:** (208) 846-7610 (24 hours) or 911
Wyoming Department of Environmental Quality: (307) 777-7781 (24 hours) or 911	**National Response Center:** (800) 424-8802	
Other Relevant Contact Information		
BLM Authorized Officer or Designated Representative:	**Forest Access Authorized Officer or Designated Representative:**	

1/ To be completed by Construction Contractor prior to operation and maintenance activities.

This Emergency Contact List shall be verified at the beginning of construction and updated throughout the Project by the Construction Contractor to ensure accurate contact information.

7.0 HAZARD IDENTIFICATIONS AND KEY RESPONSE CRITERIA

The right-of-way (ROW) corridor for the Project can pose potential hazards or threats in association with construction activities. The most effective response to any situation is awareness of the hazard, its potential effects and consequences, and an understanding of the resources and actions necessary to respond. It would be unreasonable to list all

the potential hazards and detail each response. Responses to different events may vary as the event evolves, but response methods and responsibilities to be determined in the Final Construction Emergency Preparedness and Response Plan will be essential for any possible situation.

Effective Emergency Response training is based on plausible scenarios and then developing the understanding, elements, and actions necessary to respond. Scenarios to consider are electrocution, fatality, massive equipment failure, structure failure, weather/environment, etc.

APPENDIX R
OPERATIONS, MAINTENANCE, AND EMERGENCY RESPONSE PLAN

Appendix R

Operations, Maintenance, and Emergency Response Plan

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation, and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall locations of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Operations, Maintenance, and Emergency Response Plan (Plan) was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This Plan addresses routine, corrective, and emergency response activities for operation and maintenance (O&M) of the Project. This Plan will be reviewed and updated as necessary and as agreed to by the Companies and the BLM, USFS, BOR, and other agencies as applicable. Maps showing road closures, gate locations, and environmentally sensitive areas will be included in future versions of this Plan, per Section 6.0 below.

1.1 Purpose

This purpose of this Plan is to ensure the following:

- O&M activities comply with applicable state and federal laws and policies;
- Consistency across and within federal jurisdictions;
- The Companies or their designated contractor are able to access the transmission line and ancillary facilities and implement the necessary O&M activities in a timely, cost-effective, and safe manner;
- Impacts to the environment are avoided where practicable or are minimized; and
- The Companies comply with the North American Electric Reliability Corporation (NERC) and Western Electric Coordinating Council (WECC) inspection and reliability and service requirements.

This Plan provides an overview of methods to be implemented if the need for O&M activities is required under emergency conditions. This document discusses the existing support structure, chain of command, and emergency communication protocols to be used.

2.0 REGULATORY COMPLIANCE

NERC's mission is to ensure the reliability of the bulk power system in North America. To achieve that, NERC develops and enforces reliability standards; assesses adequacy annually via 10-year and seasonal forecasts; monitors the bulk power system; evaluates users, owners, and operators for preparedness; and educates, trains, and certifies industry personnel. NERC works with regional entities to improve the reliability of the bulk power system. The members of the regional entities come from all segments of the electric industry: investor-owned utilities; federal power agencies; rural electric cooperatives; state, municipal, and provincial utilities; independent power producers; power marketers; and end-use customers. These entities account for virtually all the electricity supplied in the United States, Canada, and a portion of Baja California Norte, Mexico.

The Western Systems Coordinating Council (WSCC) was formed with the signing of the WSCC Agreement on August 14, 1967, by 40 electric power systems. Those "charter members" represented the electric power systems engaged in bulk power generation and/or transmission serving all or part of the 14 Western States and British Columbia, Canada. The WECC was formed on April 18, 2002, by the merger of WSCC, Southwest Regional Transmission Association (SWRTA), and Western Regional Transmission Association (WRTA). WECC's interconnection-wide focus is intended to complement current efforts to form Regional Transmission Organizations (RTOs) in various parts of the West.

WECC and the other regional reliability councils were formed due to national concern regarding the reliability of the interconnected bulk power systems, the ability to operate these systems without widespread failures in electric service, and the need to foster the preservation of reliability through a formal organization.

WECC members have long recognized the many benefits of interconnected system operation. During the mid-1960s, expansion of interconnecting transmission lines among systems in the western United States and western Canada resulted in the complete interconnection of the entire WECC region. As this expansion was taking place, systems generally adopted the Operating Guides of the North American Power Systems Interconnection Committee (NAPSIC) to promote consistent operating practices within the region. NAPSIC later became the NERC Operating Committee.

The reliability management system (RMS) was created as a way to enforce compliance. This contract obligates entities to abide by certain critical reliability standards and to provide the data needed to verify compliance. The contract also imposes sanctions, both monetary and non-monetary according to a set schedule, for violations of reliability criteria. Currently all control areas but one are signatories to the RMS agreement, and almost 90 percent of the customer load in the Western Interconnection is served under RMS.

3.0 OPERATION AND MAINTENANCE

The Companies and/or their designated contractor perform a number of activities to keep transmission lines operational and in good repair. Most of these activities, such as those for routine patrols, inspections, and scheduled maintenance, are planned in advance. However, there will be an occasional need for emergency response in cases where public safety and property are threatened, to prevent imminent damage to the transmission line and ancillary facilities, or to restore service in the event of an outage.

Routine, corrective, and emergency response activities will be conducted in accordance with this O&M Plan without previous notification or approval from the Agencies. Maintenance activities outside of the right-of-way (ROW), outside of established access roads or other Project-related ancillary facilities, or that are not identified in this Plan will not be conducted until approved by the Agencies. An exception to this would be when emergency action/maintenance is needed which requires some outside ROW work to be completed to ensure reliable power to customers.

Typical schedules and equipment used for the O&M activities are provided below. However, additional vehicles and equipment may be necessary depending on the terrain, site access, and necessary maintenance work. Work may also be conducted outside of the typical schedule; schedule changes may occur as a result of weather, manpower, equipment availability, budgets, and other factors.

3.1 Routine Maintenance (Preventive Maintenance)

Routine maintenance activities are conducted on a regular basis and have been carried out historically to identify and repair any deficiencies. These activities do not damage vegetation or disturb soil outside of the ROW, do not adversely impact sensitive resources—including known federal- and state-listed species, waters of the United States, and cultural resources—and do not require land manager approval. Personnel are generally present in any given area for less than one day. The following are examples of routine maintenance, which include both inspection and corrective activities:

- Routine air patrols from a helicopter to inspect for structural and conductor defects, conductor clearance problems and hazard trees.
- Routine ground patrols to inspect structural and conductor components. Such inspections generally require either an all-terrain vehicle (ATV) or pickup and possibly additional support vehicles traveling on access roads and may rely on either direct line-of-sight or binoculars. In some cases, the inspector may walk the ROW. Patrols are typically conducted in the spring and fall. Follow-up maintenance is scheduled depending on the severity of the problem—either as soon as possible or as part of routine scheduled maintenance.
- Climbing surveys may be necessary to inspect hardware or make repairs. Personnel generally access these structures by pickup, ATV, or on foot.
- Structure or conductor maintenance, which typically occurs from a bucket truck or boom truck. The maintenance vehicle may be located on or off a road, and no-to-minimal grading is necessary to create a safe work area.
- Pole replacement (wood pole or H-frame structures), which typically occurs within and 5 to 15 feet of the pole being replaced within the ROW and requires personnel to use pickup trucks, bucket truck or boom truck, and additional support vehicles.
- Cathodic protection surveys to check the integrity and functionality of the anodes and ground beds. These surveys typically require personnel to use an ATV or pickup and make brief stops.
- Routine cyclical vegetation clearing to trim or remove tall shrubs and trees to ensure adequate ground-to-conductor clearances. Vegetation clearing cycles vary from 3 to 10 years or as needed (dependent upon the vegetation present). Personnel generally access the area by pickup, ATV, or on foot; use chainsaws to clear the vegetation; and typically spend less than half a day in any one specific area. In some cases, vegetation may be cleared using mechanical means.
- Removal of individual trees or snags that pose a risk of falling into conductors or structures and causing outages or fires (hazard trees). Such trees or snags may be located off of the ROW. Personnel generally access hazard trees by truck, ATV, or by foot from an access road, and cut them with a chainsaw or similar tool. Any felled trees or snags are left in place as sources of large woody debris or as previously directed by the land management agency. Felled green trees are limbed to reduce fire hazard.
- Wood poles are periodically treated to retard rotting and structural degradation. Wooden poles are limited to the distribution lines serving substations and regeneration stations on this Project. Personnel typically access structures by pickup, ATV, or on foot; inspect and test (including the subsurface) the poles; and then treat them by injecting preservatives into the poles if required. Wood pole inspections and treatments generally occur on a 10-year cycle.
- Routine road maintenance, such as blading (as needed) the road to improve surface condition and drainage, or removing minor physical barriers, such as

rocks and debris. All initial road maintenance is performed by field crews which typically use ATVs, pickups, chainsaws, and hand tools. Trees and brush are cut off at grade to minimize damage to vehicles. Slash, deadfall, and boulders are placed at the edge of the road or down slope of the road bed, depending on site topography, to serve as a filtering windrow to minimize erosion and sedimentation. Smaller vegetation (e.g., grasses) is left in the road bed unless it is too tall, hinders access, or could be construed as a fire hazard to O&M vehicles.

- Vegetation removal may be required on access roads to allow the necessary clearance for access and provide for worker safety. Field crews access the access roads by pickup or ATV and use chainsaws and hand tools to clear the vegetation. Where practicable and feasible, mechanical methods may be used.
- Installation of bird flight diverters and the relocation or removal of bird problem nests posing imminent fire or outage risk.
- Noxious weed control and vegetation management activities that include the use of pesticides. Pesticide use is based on agreement with the landowner or federal land management agency for the parcel in question and the chemicals to be used are agreed upon in advance.

3.2 Corrective Maintenance

Corrective maintenance activities are relatively large-scale efforts that occur infrequently, may result in more extensive vegetation clearing or earth movement, and may include rehabilitation seeding and associated activities (e.g., measures to control noxious weeds). Personnel are generally present in any given location or area for a prolonged time, generally more than one day. The following are examples of corrective maintenance:

- Non-cyclical vegetation clearing to remove saplings or larger trees in the ROW.
- Structure or conductor maintenance in which earth must be moved, such as the creation of a landing pad for construction or maintenance equipment.
- Structure (e.g., cross-arm, insulator, lattice structure) replacement.
- Road maintenance involving erosion control, water drainage installation or repair (such as culverts or rock crossings), road rehabilitation after major disturbances (such as slumping or a storm event), or other road maintenance requiring heavy equipment (not including routine grading).
- Follow-up restoration activities, such as seeding, noxious weed control, and erosion control.
- Conductor repair or replacement, which requires the use of several types of trucks and equipment and grading to create a safe work area to hang and pull the conductor into place.

3.3 Emergency Maintenance

Emergency situations are those conditions that may result in imminent or direct threats to public safety or threaten or impair the Companies' ability to provide reliable transmission service to its customers. Emergency situations may include:

- Failure of conductor splices;
- Damage to structures or conductors from wildfire, high winds, ice, or other weather-related conditions;
- Line or system outages or fire hazards caused by trees falling into conductors;
- Breaking or imminent failure of cross-arms or insulators, which could, or does, cause conductor failure; or
- Damage to structures or conductors from vandalism.

4.0 EMERGENCY SITUATIONS

In the case of an emergency where life or substantial property is at risk or there is a potential or actual interruption in service, the Companies or their designated contractor will promptly respond to the emergency and conduct any and all activities, including emergency repair requiring heavy equipment access to the structures or other ancillary facilities, needed to remedy the emergency and will implement feasible and practicable environmental protection measures (EPMs) listed in Appendix Z of the POD.

4.1 Response Coordination

The amount of resources and coordination required for response to a specific hazard or emergency is determined by type, severity, location, and duration of the event. Most events require managing at the field operations level and will require increasing resource requirements to match the severity and duration of the event.

4.2 Emergency Communications

Effective communication and exchange of information is essential in every emergency response. Misdirected, incorrect, or untimely information can be detrimental and even increase the threat to life or property. As an emergency event escalates, the rapid increase of information creates chaos and confusion. Simple communication diagrams can help to alleviate this situation.

In case of emergency, call 911 first. Additional potential emergency contacts are listed in Table 4-1 – Emergency Contact List, and should be contacted as appropriate, depending on the situation (e.g., fire, injury).

Table 4-1. Emergency Contact List[1/]

In Case of Emergency - Call 911 **Fire – Call 911 First**		
Federal, State and County Government Representatives		
BLM Casper Field Office: (307) 261-7522	**Bannock County:**	**Franklin County:**
BLM Pocatello Field Office: (208) 478-6341	**Bear Lake County:**	**Lincoln County:**

Table 4-1. Emergency Contact List[1/] (continued)

In Case of Emergency - Call 911 **Fire – Call 911 First**		
BLM Rawlins Field Office: (307) 328-4282	**Carbon County:**	**Natrona County:**
BLM Rock Springs Field Office: (307) 352-0334	**Converse County:**	**Sweetwater County:**
BLM Wyoming State Office: (307) 775-6189	**BLM Idaho State Office:** (208) 373-4000	**Medicine Bow-Routt National Forest:** (307) 358-7102
Caribou/Targhee National Forest: (208) 847-8935	**Regional Interagency Dispatch Centers** in: Casper and Rawlins, WY (307) 261-7691	**National Interagency Fire Center** in: Boise, Idaho (208) 387-5512
State and Police and County Sheriffs		
Bannock County:	**Franklin County:**	
Bear Lake County:	**Lincoln County:**	
Carbon County:	**Natrona County:**	
Converse County:	**Sweetwater County:**	
Wyoming Highway Patrol: (307) 777-4301	**Idaho State Police** (208) 884-7000	
Poison Control		
National Poison Control: (800) 222-1222 Provides connection to counties		
Hospitals And Clinics		
Bannock County:	**Franklin County:**	
Bear Lake County:	**Lincoln County:**	
Carbon County:	**Natrona County:**	
Converse County:	**Sweetwater County:**	
Hazardous Spill Response And Notification – Call 911 Directly after 911 notification, the following mandatory notifications will be made by the Compliance Inspection Contractor. Select and notify the appropriate government agency(ies) based on geographic location of the spill site. Also refer to Appendix P – Hazardous Materials Management Plan Framework**.**		
BLM Casper Field Office:	**Bannock County:**	**Franklin County:**
BLM Pocatello Field Office:	**Bear Lake County:**	**Lincoln County:**
BLM Rawlins Field Office:	**Carbon County:**	**Natrona County:**
BLM Rock Springs Field Office:	**Converse County:**	**Sweetwater County:**

Table 4-1. Emergency Contact List[1/] (continued)

In Case of Emergency - Call 911 **Fire – Call 911 First**		
Idaho Bureau of Homeland Security, Emergency Ops Center: (208) 422-5019	**Wyoming Office of Homeland Security:** (307) 635-6017	**Idaho Department of Environmental Quality:** (208) 846-7610 (24 hours) or 911
Wyoming Department of Environmental Quality: (307) 777-7781 (24 hours) or 911	**National Response Center:** (800) 424-8802	
Other Relevant Contact Information		
BLM Authorized Officer or Designated Representative:	**Forest Access Authorized Officer or Designated Representative:**	

1/ To be completed by the Companies prior to operation and maintenance activities.

This Emergency Contact List shall be verified at the beginning of the O&M activity and updated throughout the Project by the contractor or the Companies to ensure accurate contact information.

4.3 Hazard Identifications and Key Response Criteria

The ROW for the Project can pose potential hazards or threats in association with O&M activities. The most effective response to any situation is awareness of the hazard, its potential effects and consequences, and an understanding of the resources and actions necessary to respond. It would be unreasonable to list all the potential hazards and detail each response. Responses to different events may vary as the event evolves, but response methods and responsibilities will be essential for any possible situation.

Effective Emergency Response training is based on plausible scenarios and then developing the understanding, elements, and actions necessary to respond. Scenarios to consider are electrocution, fatality, massive equipment failure, structure failure, weather/environment, etc.

5.0 ENVIRONMENTAL PROTECTION

Environmental protection as described below will be implemented by the Companies or their designated contractor during routine and corrective O&M activities and, to the extent possible, during emergency situations. Implementation of the EPMs listed in Appendix Z of the POD applicable to access and transportation, vegetation management, noxious weeds, soil and water quality, aquatic resources, wildlife, sensitive species, reclamation, and cultural resources will avoid or reduce impacts associated with O&M activities. All EPMs and their applicability are described in Appendix Z – Environmental Protection Measures.

5.1 Access Management

Access roads are necessary for access to, and maintenance of, transmission lines, structures, or ancillary facilities. The land-managing agency makes a decision to close a road built for the Project. Each field office (FO) will determine which Project roads on

BLM-managed land are to be open based on RMP and Travel Management Plan direction. The USFS has determined that all roads built for the Project on National Forest System (NFS) lands will be closed to public use.

During routine operations, vehicular access will be needed to reach each structure for periodic inspections and maintenance and to areas of forest or tall shrubs to control vegetation in the ROW for safe operation. The Companies plan to employ live-line maintenance techniques on the transmission line (see Appendix B of the POD, Section 4.1). Live line maintenance and repair techniques require the utilization of high-reach bucket trucks and other trucks and equipment. Roads required as routine access roads for the operational life of the Project will be revegetated following construction but will not be recontoured; they will be maintained free of trees and shrubs for a minimum 8-foot width.

For non-routine maintenance requiring access by larger vehicles, the full width of the access road may be used. Roads will be repaired, as necessary, but will not be routinely graded. In order to preserve the ability to enter rapidly, the road structure (cuts and fills) will be left in place. In an emergency (i.e., in the event of a tower or conductor failure) full emergency access, including cranes and other heavy equipment, will be needed. Based on historical reliability of H-frame and lattice structures, it is anticipated that only a small fraction of the tower sites will require emergency access over the life of the Project.

Other roads may be travelled over by the Companies during operations. However, these roads will not be maintained by the Companies except as noted. These include:

- **Public roads, including state highways and county roads**—These roads are for public use, and the appropriate state or county entity maintains them.
- **Open roads on federal land**—The appropriate federal agency (typically the BLM or USFS) maintains these roads, which are open to the public. These roads, including drainage features, cuts, and fill slopes, will be repaired by the Companies if damaged during O&M activities but not maintained on a routine basis.
- **Closed federal land roads**—These roads are still needed for administrative or emergency functions, but they have been closed to the public because of management policies to protect natural resources or reduce maintenance costs. If utilized during O&M activities the Companies will assume some maintenance responsibilities proportionate to their use for O&M purposes.

The Companies typically perform two types of road maintenance activities: 1) vegetation and debris clearing to maintain safe access and 2) repairs using heavy equipment. Roads are inspected generally every 3 to 6 years and repairs are made as necessary. Typically, a small crew uses hand tools to cut small brush and trees (greater than 12 inches tall); remove dead-fall and debris; and repair and replace signs on access roads. Crews also prepare an inventory of road damage that will require ground disturbance (e.g., repair of a failed bank), and repair work is scheduled accordingly (typically the following year). Inspections and maintenance are typically conducted from spring through summer, when roads are clear of snow.

The Companies will implement access-related EPMs in Appendix Z and follow the seasonal and spatial restrictions by time and location for big game crucial winter range time listed below in Table 5-2 – Seasonal O&M Restrictions for Big Game Crucial Winter Range and Parturition Areas, and Appendix H – Plant and Wildlife Conservation Measures, Attachment H-2. These seasonal and spatial restrictions are shown on Volume II-2 maps of the POD.

5.2 Vegetation Management

The Companies manage vegetation within their ROWs and along access roads to minimize interference with the flow of electricity, to address safety issues, and to facilitate O&M activities. Vegetation management complies with the National Electric Safety Code, ANSI A300 Part 7: American Operations Integrated Vegetation Management and Electric Utility Rights-of-Way and the ISA Best Management Practices. Additionally, the Companies comply with vegetation management standards required by the NERC and WECC vegetation management guidelines; failure to comply with these requirements can result in substantial financial penalties.

Objectives of Integrated Vegetation Management (IVM) on utility ROWs are to establish sustainable plant communities that are compatible with the electric facilities. The intent is to provide stable, low growing plant ecotypes that reduce fire risk and maintain safe access to the line and associated facilities. In general, this involves removing tall growing tree species. Establishment of vegetation will also reduce the potential for noxious weeds to become established in the ROW.

IVM has a series of control methods used to achieve the aforementioned objectives. These include, but are not limited to:

- Manual Control Methods: workers with hand-carried tools, including power tools, used in selective or environmentally sensitive areas.
- Mechanical Control Methods: conducted with a large variety of different types of machines that are efficient in clearing dense stands of vegetation.
- Chemical Control Methods:
  - Tree Growth Regulators that are designed to reduce the natural growth rates by interfering with natural plant processes.
  - Pesticides: Noxious or invasive weeds along with stumps and saplings of tall growing species may be controlled with U.S. Environmental Agency (USEPA)–approved pesticides.
- Biological Control Methods: use of natural processes to control undesirable vegetation.
- Cultural Control Methods: take advantage of seed banks of native, compatible species lying dormant on-site; this encourages the establishment of early successional plant communities.

For the purposes of IVM, the ROW has been divided into the wire zone and the border zone as shown in Figure 5-1 and as defined below:

- Wire Zone – The ROW portion directly under the wires and 10 feet beyond the outside phases.
- Border Zone – The outside edge of the wire zone to the edge of the ROW.

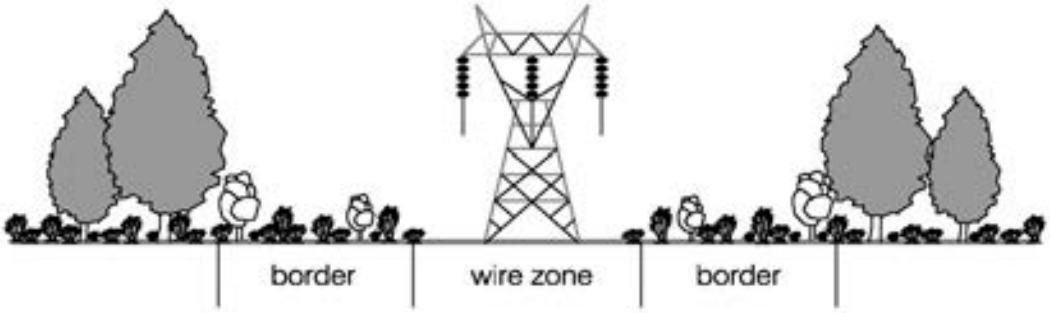


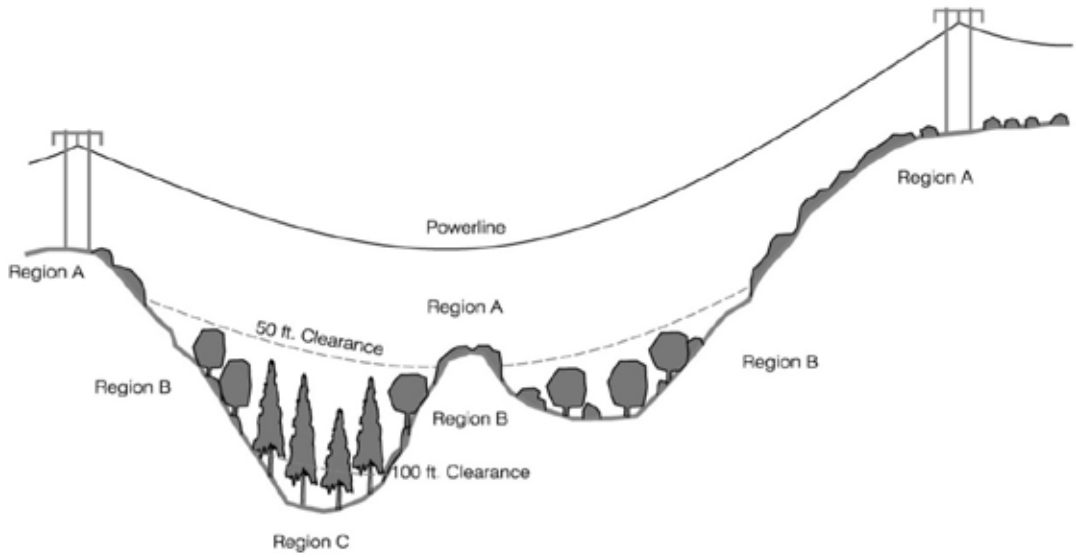
Figure 5-1. Transmission Line Vegetation Management Zones

The IVM control method(s) implemented may be directed by the distance of the conductor to the ground surface (based on maximum calculated sag) as shown in Table 5-1 and Figure 5-2, and is defined by region as follows: Region A, where the lines are less than 50 feet off the ground, Region B where the lines are 50 to 100 feet off the ground, and Region C where lines are greater than 100 feet off the ground. Table 5-1 indicates the heights at which vegetation will be managed, based on zones and regions.

Table 5-1. IVM Recommended Management Heights in the Wire Zone and Regions

	Region		
Zone	**A**	**B**	**C**
Wire Zone	Remove All Trees	Remove all trees if less than 50 feet clearance between top of tree and conductor.	Remove all trees if less than 50 feet clearance between top of tree and conductor.
Border Zone	Remove all trees greater than 25 feet in height.	Removal of any hazard trees*.	Removal of any hazard trees*.

* Hazard tree is defined as any tree that is structurally unsound that could strike a target (any utility related infrastructure) when it falls. Hazard trees can occur outside of the ROW and are typically removed annually.



Region Definitions:
Region A: Where conductor to ground distance is less than 50 feet.
Region B: Where conductor to ground distance is more than 50 feet, but less than 100 feet.
Region C: Where conductor to ground distance is greater than 100 feet.

Figure 5-2. Vegetation Management Regions Based on Line Height

As shown in Figure 5-2 and in compliance with the most current version of the Companies' transmission line clearing specifications, trees and brush will be cleared within a 25-foot radius of transmission H-frame or metal structures, 10-foot radius of single pole construction, and 5-foot radius of guy anchors.

Generally, the Companies propose to conduct IVM control methods/activities within the ROW every 3 to 10 years, depending on a variety of conditions such as topography, vegetation type and growth rates, and the potential for vegetation to interfere with safe operation of the line prior to the next clearing cycle. The Companies propose to use a variety of IVM control methods and have developed relevant EPMs included in Appendix Z of the POD for maintaining vegetation within the transmission line ROW.

5.3 Noxious Weed Control

Noxious weeds and invasive plants will be monitored and controlled during operation of the Project. The Companies will eradicate any new population that is demonstrated to be the result of Project operation or maintenance. If operation of the Project causes an existing noxious weed infestation to exceed the extent identified and delineated within the ROW during preconstruction surveys, the Companies will monitor and control the noxious weed infestation. However, the Companies will not be responsible for the eradication of pre-existing noxious weed and invasive plant populations outside of Project-related areas of disturbance. In addition, the Companies will not be responsible for noxious weeds and invasive plants introduced into the Project area by activities other than Project operations (e.g., recreational use, grazing, other construction projects, etc.); natural occurrences (e.g., fire); noxious weeds and invasive plants outside the Project ROW; or noxious weeds and invasive plants along existing access roads not improved by the Project.

Maintenance vehicles, ATVs, and equipment have the potential to transport weed seeds from one area to another via dirt and debris that inadvertently collects on the equipment. The Companies will implement the O&M EPMs in Appendix Z of the POD, including cleaning all equipment and vehicles prior to beginning O&M projects on federal or state land, establishing vegetation promptly after disturbance, and monitoring and controlling noxious weed and invasive plant infestations as described above. Additional information regarding noxious weed control can be found in the most current versions of PacifiCorp's *Transmission and Distribution Vegetation Management Program Specification Manual* (PacifiCorp 2012), Idaho Power Company's *Framework for Managing Noxious Weeds* (IPC 2011), and Appendix E – Framework Noxious Weed Plan, of the POD.

5.4 Protection of Soils and Water Quality

Soil and water quality are crucial to a healthy environment and protected by numerous local, state, and federal laws and regulations. The Companies are committed to protection soil and water quality during operations and maintenance of the Project through implementation of applicable EPMs in Appendix Z of the POD, including:

- Appropriate temporary erosion and sediment control best management practices (BMPs) will be implemented during ground-disturbing operations and maintenance activities.
- Permanent erosion and sedimentation control structures will be installed along the transmission line ROW and at substations upon completion of construction in accordance with the Project Stormwater Pollution Prevention Plan (SWPPP; refer to Appendix F – Framework SWPPP) and maintained throughout the life of the Project, as necessary to remain effective.
- De-compaction or re-compaction, as appropriate, will be completed after ground-disturbing O&M projects, and before reclamation activities, to encourage the growth of vegetation in disturbed areas and project soil and water quality.
- Temporarily disturbed areas will be recontoured to pre-project conditions to maintain drainage and prevent erosion, puddling, and displacement of soils.
- All culverts will be designed and installed in accordance with applicable land management agency guidelines (state best management practices will be employed on private land), and maintained by the Companies.
- Measures to prevent, contain, and clean up spills will be implemented at applicable facilities and during operations and maintenance activities (refer to Appendix G – Framework Spill Prevention, Containment, and Countermeasures Plan).

All EPMs and their applicability are listed in Appendix Z – Environmental Protection Measures, of the POD.

5.5 Protection Measures for Aquatic Resources

Streams or watercourses with definable streambeds or stream banks, regardless of whether there is flowing water, are important because they provide habitat for a variety of animal and plant species. The Project transmission lines parallel and cross

numerous waterways and riparian areas. Of critical importance is the protection of habitat for sensitive plant and animal species, including aquatic species. The Companies will follow the O&M EPMs listed and described in Appendix Z of the POD to protect aquatic resources and maintain vegetation in and around important aquatic resources, including the scheduling of routine and corrective maintenance in streams with sensitive fish to occur between July 1 and September 1 in an effort to minimize impacts to spawning and migration activities.

5.6 Protection of Wildlife Species

The Companies will follow the EPMs in Appendix H – Plant and Wildlife Conservation Measures to protect wildlife species and to prevent accidental disruption or loss of wildlife resources along the ROW, including limiting vehicular speeds to 25 mph on all unsurfaced roads, avoiding disruptive activities and restricting travel to designated routes within big game winter range and parturition areas (except for areas within the ROW), and conducting vegetation clearing between August 1 and April 14 to the extent feasible to protect breeding birds. Table 5-2 lists the seasonal O&M restrictions by time and location for big game.

Table 5-2. Seasonal O&M Restrictions for Big Game Crucial Winter Range and Parturition Areas

			Species Mile Marker where Seasonal Restriction is Applicable (mileage)				
Field Office	**Seasonal Timing Description**	**Segment**	**Mule Deer**	**Elk**	**Antelope**	**Moose**	**Bighorn Sheep**
BLM Casper Field Office	No surface-disturbing and wildlife-disturbing activities are allowed from November 15 through April 30 on all crucial big game winter ranges.	1W(a)	7.9 – 21.9		3.7 – 7.2		
		1W(c)	6.0 – 20.3		2.4 – 6.7		
BLM Rawlins Field Office	Surface-disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30. Surface-disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30.	1W(a)	67.9 – 72.77 (end)		53.1 – 59.1		
					71.7 – 72.77 (end)		
		1W(c)	70.3 – 75.79 (end)		51.5 – 61.0		
					73.4 – 75.79 (end)		
		2	0 – 1.5		0 – 8.9		
			25.2 – 28.6		29.0 – 37.5		
			32.6 – 37.4		62.5 – 67.8		
			44.0 – 51.3				
		3			19.7 – 23.5		

Table 5-2. Seasonal O&M Restrictions for Big Game Crucial Winter Range and Parturition Areas (continued)

Field Office	Seasonal Timing Description	Segment	Species Mile Marker where Seasonal Restriction is Applicable (mileage)				
			Mule Deer	Elk	Antelope	Moose	Bighorn Sheep
BLM Rock Springs Field Office	To protect important big game winter habitat, activities or surface use will not be allowed from November 15 to April 30 within certain areas encompassed by the authorization. The same criteria apply to defined big game birthing areas from May 1 to June 30.	3			23.5 – 46.19 (end)		
		4 (Anticline to Jim Bridger tie-in)			0 – 5.02 (end)		
		4	4.7 – 7.8		0 – 16.3		
					19.1 – 20.9		
					24.9 – 35.2		
					49.7 – 59.5		
					64.9 – 65.2		
BLM Kemmerer Field Office	Avoid disruptive activity in elk calving areas from May 1 through June 30 and in big game crucial winter range November 15 through April 30.	4	118.4 – 124.5	110.0 – 120.5	65.2 – 72.0	106.4 – 107.8	
					83.5 – 85.6	117.0 – 120.3	
BLM Pocatello Field Office	Motorized vehicles would be restricted to existing roads from May 15 to June 30 within known or discovered calving/fawning areas. Snowmobile use restricted in mapped big game winter range.	4	133.9 – 149.1	142.8 – 146.2			
			155.2 – 162.7	160.1 – 163.7			
			171.4 – 175.8	172.7 – 175.8			
			178.3 – 179.1	180.6 – 182.9			
			180.6 – 186.0				
			187.9 – 198.2				

5.7 Protection of Threatened, Endangered, and Sensitive Plant and Wildlife Species

The Companies have taken a thorough, systematic approach in providing protection for threatened, endangered, and sensitive plant and animal species during the siting and routing of the Project. Additional O&M EPMs will apply throughout the life of the Project to prevent negative impacts to threatened, endangered, and sensitive species, including adherence to seasonal and spatial restrictions outlined in Attachment H-2 of Appendix H - Plant and Wildlife Conservation Measures. Appendix Z provides additional EPMs, including protecting sensitive wildlife or plant species if they are encountered during O&M activities, notification requirements, and education of O&M personnel with regard to federal and state laws protecting birds of prey.

Nesting, roosting, and perching birds can cause power outages if their feces or nesting materials interfere with conductors, insulators, or air gap. The Companies, in consultation with the U.S. Fish and Wildlife Service (USFWS), manages nesting on transmission line structures to reduce conflicts. Such management may include relocating nests, modifying structures, and providing nesting platforms. The Companies will continue to consult with the USFWS, and when a problem nest is located on federal or state lands, the appropriate land management agency.

If an emergency occurs and access is immediately needed, the federal agency will be notified as soon as possible. Depending on the urgency, the agency may not have responded until after the repair work has begun. Timing restrictions may not be adhered to, but the other applicable measures listed in Appendix Z will be followed to the extent possible.

5.8 Reclamation

Appendix D- Framework Reclamation Plan includes reclamation measures, agency-approved seed mixes, and methods for monitoring progress toward reclamation success standards once ground-disturbing activities are complete and an area to be reclaimed has been seeded. It combines the Companies' BMPs with mitigation developed in consultation with the agencies. After ground-disturbing maintenance activities, the Companies propose to adhere to the O&M EPMs included in the reclamation section of Appendix Z to ensure that appropriate reclamation is implemented, and to prevent accidental introduction or transport of noxious weeds along the ROW.

5.9 Protection Measures for Cultural Resources

Prior to any ground-disturbing O&M activities the location will be reviewed against previous 100 percent cultural resource surveys of the ROW and access roads. Maps that show all avoidance areas will be provided to maintenance crews to protect resources. If previously un-surveyed area is to be disturbed, the area will have cultural resource surveys conducted prior to ground-disturbing activities. All cultural resources, and historic or prehistoric sites or objects discovered by the Companies or their designated contractor will be immediately reported. Additional surveys will not be conducted for O&M activities if the work area was previously surveyed prior to construction of the line and ancillary facilities.

If new probable historic or cultural resources are discovered during routine or corrective O&M activities, potentially destructive work within 200 feet of the find will be halted and the appropriate federal or state agency notified.

All human interments will be treated with the respect accorded them by state and federal laws applying to human remains. If human remains are discovered during O&M activities, the Companies will stop all work in the immediate area to protect the integrity of the find and notify the appropriate law enforcement agency and the landowner or land management agency as soon as possible. In addition, the location of the find will be flagged or fenced off to protect it from further impacts. The law enforcement agency or coroner will determine the age of the human remains. If the remains are not modern, then the Companies will work with the federal or state agency to determine what mitigation is necessary and, once the mitigation is complete, resume work in the area. The Companies will follow the applicable measures in Appendix S – Cultural Resources Protection Plan to protect cultural resources.

5.10 Protection for Paleontological Resources

If significant fossil materials are discovered during O&M activities on federal land construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the authorized officer. The site will be protected to reduce the risk of damage to fossils and context. The Companies will follow the applicable measures in Appendix J – Framework Paleontological Resources Protection Plan to protect paleontological resources on federal lands.

5.11 Fire Protection

Fire regulations on federally managed lands are generally in effect between April 1 and October 31 and at other times under unusual weather conditions. O&M activities will follow the requirements and procedures specified by the appropriate federal or state agency when conducted on federal or state lands and implement BMPs for fire prevention and suppression on all Project lands (refer to Appendix O – Framework Fire Prevention and Suppression Plan, for Project EPMs and methods to prevent and suppress fires).

The Companies and the federal or state land manager will work cooperatively to evaluate requests for Industrial Fire Precaution Level (IFPL) Waivers that would allow the Companies and/or their contractors to continue working when certain fire restrictions are in place.

Transmission lines in the western United States may be interconnected with the lines of other utilities. Continued operation of these lines provides stability to the entire interconnected Western transmission system. In addition, continuous operation of the transmission lines is necessary for the Companies to supply electric service to their customers. Therefore, the federal or state agency will use its best efforts to avoid using fire suppression techniques that could take the lines out of service. If the federal or state land manager determines that it must use fire suppression techniques, they will notify the Companies of any and all fire suppression efforts that could come into close proximity (2 miles) with the transmission lines prior to initiating those efforts.

The Agencies will notify the Companies if they are planning a prescribed burn within 2 miles of the transmission line or ancillary facilities.

If the Companies become aware of an emergency situation that is caused by a fire on or threatening federal or state land that could damage the transmission lines or their operation, they will notify the appropriate land management agency contact. Likewise, if the federal or state land manager becomes aware of an emergency situation that is caused by a fire on or threatening federal or state land and that could damage the transmission lines or their operation, it will notify the Companies.

6.0 O&M PLAN HISTORY

The O&M Plan is a living document and changes are anticipated after the Plan's acceptance. Amendments will include the date on which changes were made, a brief description of those changes, and the signatures of authorized representatives of the Companies and the agency accepting the changes.

This Plan and its updates will be distributed to the relevant BLM, BOR, and USFS field offices and districts and other agencies as applicable. Additionally, the Plan will be made available, as appropriate, to Company personnel and their contractors. The Companies will be responsible for distributing updates when they are made. If the federal agencies identify additional parties that require a copy of the Plan, they are responsible for distribution and ensuring that party has the current Plan.

In addition, the following items will become part of this section of the O&M Plan:

- List of road closures and gate locations.
- Maps containing known locations of sensitive plant and animal species mapped as "sensitive areas" without specifying the resource.
- Known locations of cultural features included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) mapped as "sensitive areas" without specifying the resource.

7.0 LITERATURE CITED

IPC (Idaho Power Company). 2011. Framework for Managing Noxious Weeds. August.

PacifiCorp. 2012. Transmission and Distribution Vegetation Management Program Specification Manual. June 15.

APPENDIX S
CULTURAL RESOURCES PROTECTION PLAN

Appendix S

Cultural Resources Protection Plan

Gateway West Transmission Line Project

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August 15, 2013

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LIST OF ATTACHMENTS

Attachment S-1. Final Draft Programmatic Agreement
Attachment S-2. Draft Historic Properties Treatment Plan
Attachment S-3. Denied Access Locations Requiring Cultural Surveys

1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation, and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.

- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall locations of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Cultural Resources Protection Plan was prepared for Segment D of the Project because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

Measures to ensure that construction, operation, and maintenance activities comply with Section 106 of the National Historic Preservation Act (NHPA) for cultural resources are incorporated into this Plan. The Construction Contractor will be responsible for identifying and mapping environmentally sensitive areas during denied access cultural resource surveys, as well as revisions to site-specific Historic Properties Treatment Plans (HPTPs) resulting from these surveys.

2.0 PURPOSE

The purpose of the Plan is to identify and implement cultural resource protection measures to reduce the effect of the Project on cultural resources during construction, operation, and maintenance of the Project. The BLM has determined that issuance of the right-of-way (ROW) grant triggers the requirements of Section 106 of the NHPA for the Project as defined at 36 Code of Federal Regulations (CFR) 800.16(y). The BLM has further determined that these requirements apply to all land ownerships, not just lands managed by the BLM and other federal agencies; and determined that the Project may have direct, indirect, and cumulative effects on properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).[1]

3.0 PROGRAMMATIC AGREEMENT

In consultation with and with the active participation of the Advisory Council on Historic Preservation (ACHP), the BLM developed a Programmatic Agreement (PA) to guide Project compliance with the NHPA. The BLM will require that the Project be executed in accordance with the conditions of this PA, which shall be appended to and made a part of the Record of Decision authorizing the granting of the ROW. The Construction Contractor will implement and comply with all stipulations outlined in the PA. The final draft of the PA is included as Attachment S-1. Key elements of the PA that affect construction, operation, and maintenance are:

I. Area of Potential Effects (APE) is defined and based on potential direct, indirect, and cumulative effects and provides a baseline study for identifying areas that require cultural resource surveys and for which full reports must be submitted to and reviewed by the respective State Historic Preservation Office (SHPO) for concurrence.

II. Identification and Evaluation of Historic Properties ensures all work conducted to satisfy the measures of the PA meets the Secretary of the Interior's Standards for Archeology and Historic Preservation (48 Federal Register 44716), covers guidance for a literature review and comprehensive survey (BLM Class III Survey), provides procedures for determining eligibility and assessment of effects, and specifies the minimum professional qualifications standards for personnel participating in Section 106 compliance activities on this Project. Prior to selection of the Construction Contractor the Companies will have completed most Class III surveys. However, where access was previously denied or in new areas not previously surveyed, this section of the PA provides guidance for surveys. See Section 5.0 for more discussion of denied access area surveys.

III. Reporting, Consultation, and Review of Documentation covers procedures for handling the reporting of additional surveys.

IV. Tribal Consultation covers government-to-government consultation with Native American Indian tribes, which is the responsibility of the BLM and other federal land-managing agencies (as appropriate).

[1] A similar determination applies to lands managed by the USFS and BOR.

V. Historic Properties Treatment Plan covers the development of a Project-wide HPTP (Project HPTP) and development of HPTP Segment Plans (Segment Plans). HPTPs are discussed further in Section 4.0. HPTPs will also address operations and maintenance of the transmission line and related facilities.

VI. Confidentiality of Historic Property Information provides guidance on the nondisclosure of sensitive information about the location, character, and ownership of a historic property (pursuant to Section 304 of the NHPA).

VII. Inadvertent Discovery of Cultural Resources identifies the need to develop and implement a specific plan if potential historic properties are discovered or unanticipated impacts occur to known historic properties. See Section 4.0 for more discussion.

VIII. Inadvertent Discovery of Human Remains identifies the need to develop a Native American Graves Protection and Repatriation Act (NAGPRA) Plan and to follow its requirements as well as applicable state and local laws and NAGPRA (25 United States Code [U.S.C.] § 3001) if human remains are discovered. See Section 4.0 for more discussion.

IX. Curation provides requirements for ensuring 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), and describes how archaeological materials collected from private lands shall be maintained in accordance with 36 CFR Part 79.

X. Initiation of Construction Activities provides guidance on cultural resource requirements that have to be met before a Notice to Proceed (NTP) will be issued for construction.

XI. Changes in Construction Activities provides guidance on the BLM's and SHPOs' review of any changes to construction plans after initiation of construction.

XII – XVII. Describe administrative requirements of the PA covering annual reporting and evaluation, dispute resolution, amendments, termination, duration, and Wyoming general provisions.

4.0 HISTORIC PROPERTIES TREATMENT PLAN

In compliance with PA Stipulation V, the Companies will prepare a Project HPTP, which includes treatment guidelines for certain categories of adversely affected historic properties and development of Segment Plans that outline treatments for individual historic properties that may be adversely affected within particular segments of the Project. The Draft Project HPTP has been submitted by the Companies to the BLM, PA signatories, invited signatories, and consulting parties for review and comment (see Attachment S-2). The Companies will revise the document and its appendices based on review comments and submit a revised Project HPTP to the same reviewers for a final 10-day review. The Project HPTP will be revised if needed and the BLM will submit the final Project HPTP with comments to the SHPOs for review and comment for 30 days. The BLM will incorporate any changes and provide the final Project HPTP to the SHPOs for approval. Once the Project HPTP has been finalized, it will replace the draft version contained herein as Attachment S-2.

Included in Attachment S-2 is the draft copy of the Project HPTP currently under review by the BLM and parties to the PA. The Project HPTP includes the following sections:

Section 1 provides the Introduction.

Section 2 presents the Project History and Description.

Section 3 presents the previous research and site types within the Project analysis area.

Section 4 presents the methods, roles and responsibilities, and schedule for the determination of effects.

Section 5 outlines the sequence of Project-related tasks.

Section 6 outlines the proposed mitigation for classes of affected Properties.

Section 7 provides a list of references cited in the Project HPTP.

The intent of the Project HPTP is to specify the general terms of avoidance and monitoring, and provide a framework for mitigation planning. The Project HPTP will also cover indirect effects to trails and trail-related resources with its Project-wide trails mitigation plan.

As specified in Section 1.1 of the Project HPTP, the PA for this Project calls for site-specific HPTP Segment Plans to be developed prior to the initiation of any construction phase of the Project. The purpose of each Segment Plan is to supplement the Project HPTP with site-specific information, including treatment plans for unavoidable direct and indirect effects. The Companies or their designated contractor will develop a Segment Plan for each work element for which they wish a separate NTP from the BLM. When completed, the Segment Plans will be included in Attachment S-2.

The Construction Contractor will be responsible for revision of Segment Plans for any area for which they have cultural resource survey responsibility or for inadvertent discoveries which are determined eligible. For the purposes of the Project HPTP and Segment Plans, “segment” means the portion of the Project for which the Companies request an NTP. Section 4.5 of the Draft Project HPTP details what must be included in each Segment Plan.

During operation and maintenance the Companies will prepare an HPTP that will:

- Identify potential effects to historic properties remaining in the ROW from operation and maintenance of the Project;
- Identify stipulations to the ROW grant for the Companies to avoid, minimize, or mitigate adverse impacts to historic properties from operation and maintenance activities;
- Define a variance review process to be used during operations and maintenance to address any changes in procedure that could have an adverse effect on historic properties in the ROW (e.g., use of new types of equipment for vegetation maintenance in areas with sensitive resources), and stipulate that a BLM cultural resources specialist will review the proposed actions and make

recommendations regarding the potential effects and the appropriate actions to avoid, minimize, or mitigate any adverse effects;

- Identify operation and maintenance activities that will not be subject to additional Section 106 review; and
- Identify operation and maintenance activities that will require additional Section 106 review (e.g. an amendment to the ROW).

4.1 Monitoring Plan

The Draft Monitoring Plan, Attachment A to the Project HPTP and contained in Attachment S-2, specifically addresses monitoring for cultural resources (including but not limited to historic properties determined to be eligible for the NRHP) during construction of the Project. This Monitoring Plan provides details regarding roles and responsibilities of various field personnel in coordination with Appendix C of the POD – Environmental Compliance Management Plan (ECMP).

The purpose of the Monitoring Plan is to specify:

- how avoidance of known resources will be assured and documented during construction,
- how the cultural resource team will be organized, their roles and responsibilities,
- how monitors will interact with other environmental compliance staff as well as with construction personnel, and
- how monitors will employ the Inadvertent Discovery Plan and, if necessary, the Plan of Action for compliance with NAGPRA.

Once the Monitoring Plan has been finalized, it will replace the draft version contained in Attachment S-2. The Monitoring Plan will be supplemented with a set of confidential maps and site-specific resource avoidance details for each Segment Plan.

Section 2.0 of the Monitoring Plan describes the roles and responsibilities of the Construction Contractor Cultural Resources Team, including the Cultural Resource Specialist (CRS) and Cultural Resource Monitors (CRMs), which is part of the Construction Contractor's environmental inspection team. The Construction Contractor's Cultural Resource Team will conduct cultural resource field monitoring, ensure compliance with requirements within the Project HPTP, and implement treatment as prescribed within the Segment Plans.

Section 3.0 of the Monitoring Plan describes the monitoring procedures the CRS and/or CRM will implement Project-wide. Where warranted, the Segment Plans will include additional site-specific monitoring requirements. The objectives of monitoring are to assure and document avoidance of extant significant historic buildings, structures, sites, or objects during Project construction, to identify at the time of discovery any archaeological materials exposed during ground disturbance, and to protect such resources from damage while recommendations of eligibility for the NRHP are made by the CRS and provided to the BLM Archaeologist for review and approval.

4.2 Inadvertent Discovery Plan

The Draft Inadvertent Discovery Plan, Attachment B to the Project HPTP and contained in Attachment S-2, describes the measures that the Companies and Construction Contractor will take to ensure the protection of historic properties, in the event that historic properties are discovered during construction of the Project. The Companies have developed the draft plan contained in Attachment S-2 as stipulated by the PA, Sections V and VIII. Although cultural inventories of the Project were completed, it is possible that previously unknown archaeological resources could be discovered during Project construction activities. This document details protocols and outlines procedures that will be followed in the event that previously unknown historic properties are inadvertently discovered or if unanticipated effects occur to known historic properties as a result of any construction activities associated with the Project. This plan, together with the Project HPTP, will be reviewed by the Interested Parties of the PA. Once the Inadvertent Discovery Plan has been finalized, it will replace the draft version contained herein.

4.3 Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action

The NAGPRA Plan of Action (POA) outline, Attachment C to the Project HPTP and contained in Attachment S-2, provides an initial framework for procedures to be implemented for the treatment and disposition of Native American human skeletal remains, associated funerary objects, objects of cultural patrimony, and sacred objects (hereinafter, cultural items) inadvertently discovered during construction on federally managed lands crossed by the Project. The Companies have recommended that BLM, as lead federal agency, develop and manage the final NAGPRA POA in collaboration and consultation with affected Tribes. In addition to NAGPRA, the BLM and other federal agencies are required under the laws of each of the states crossed by the Project to notify law enforcement or the SHPO and the coroner (depending on state) if human remains of any description are found.

This document details protocols and outlines procedures that will be followed in the event that human remains are discovered as a result of any construction activities associated with the Project. If the human remains are identified on BLM-managed land, work will cease and the CIC will be immediately notified. The BLM will follow state-specific laws as prescribed in the NAGPRA POA. The full text of the laws of each state is found in the Inadvertent Discovery Plan. The names and contact information for the appropriate law enforcement contacts will be listed in Table 1 of each Segment Plan. The notification of law enforcement will occur at the same time as the activation of this POA. The decision of the law enforcement official regarding whether the remains fall under the jurisdiction of law enforcement or NAGPRA will determine the subsequent management of the remains. Only after the appropriate law enforcement decision has been rendered may the terms of the POA take effect.

5.0 DENIED ACCESS SURVEYS

The Construction Contractor is responsible for conducting preconstruction cultural resource Class III surveys and reporting on locations where surveys were not previously

conducted because access to the property was denied. The Companies will secure access to these properties prior to construction but not before Section 106 survey, reporting, and review have been completed on other portions of the Project. Attachment S-3 – Denied Access Locations Requiring Cultural Surveys, lists locations where the Construction Contractor will be required to conduct surveys. Following completion of surveys, the Construction Contractor will follow the requirements of the PA and Project HPTP and, as necessary, revise Segment Plans.

6.0 ENVIRONMENTAL PROTECTION MEASURES

Environmental protection measures (EPMs) to ensure construction, operation, and maintenance activities comply with state and federal requirements for protection of cultural resources are listed below. All EPMs and their applicability are described in Appendix Z of the POD – Environmental Protection Measures.

CR-1 All work conducted in accordance with the HPTP will be performed by qualified archeologists with trained assistants.

CR-2 An Inadvertent Discovery Plan will be included as part of the HPTP. This plan will specify what steps will be taken if a subsurface cultural resource is discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.

CR-3 The Cultural Resources Protection Plan will include provisions for the preparation and curation of artifacts from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.

CR-4 Literature reviews and Class III surveys will be completed for cultural resources. A literature review will be conducted on public and private lands and will cover a study area of one-half mile on either side of the Proposed Route transmission line alignments as well as areas identified for use as multi-purpose areas and access roads. Class III surveys covering the Area of Potential Effect (APE) as specified in the PA will be completed. A Class II Sample Survey was conducted that consisted of an intensive pedestrian survey of 15 percent of the length of all alternatives. One mile long by 500-foot-wide transect strips were surveyed along proposed and alternative routes on federal lands only, for use in detailed analysis in the EIS. This also included a detailed preliminary assessment of effects on historic trails on all lands within the APE, including existing trail condition and a visual effects assessment.

CR-5 If construction will adversely affect any properties listed on, or eligible for listing on, the NRHP, mitigation will be required. Mitigation will be in accordance with the HPTP and may include, but not be limited to, one or more of the following measures: a) avoidance through the use

of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) the use of landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures; and c) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures.

CR-6 Avoidance areas will be flagged prior to construction activities. Flagging will be removed once construction is completed in an area.

CR-7 To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, all workers will attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect these resources.

CR-8 If human remains are discovered, construction will be halted and the coroner will be notified and measures specified in the HPTP will be followed.

CR-9 On National Forest System (NFS) lands, a management plan should be developed for each historic property nominated to the NRHP. The plan should be drafted during the nomination process. The National Heritage Strategy should be used to guide decisions on issues related to the Heritage Program.

7.0 LITERATURE CITED

BLM (Bureau of Land Management). 2013. Final Draft Programmatic Agreement Among the Bureau of Land Management, the USDA Forest Service, the Advisory Council on Historic Preservation, the Idaho State Historic Preservation Officer, the Wyoming State Historic Preservation Officer, the Bureau Of Reclamation, the National Park Service, the U.S. Army Corps Of Engineers, Idaho Power, and Rocky Mountain Power Regarding Compliance with the National Historic Preservation Act for the Gateway West Transmission Line Project. BLM Wyoming State Office, Cheyenne.

Rocky Mountain Power and Idaho Power Company. 2013. Draft Historic Properties Treatment Plan for the Gateway West Transmission Line Project, Case File Numbers I-35849 (Idaho) and Wyw-174598 (Wyoming). Prepared by Rocky Mountain Power, Salt Lake City, and Idaho Power Company, Boise.

ATTACHMENT S-1
FINAL DRAFT PROGRAMMATIC AGREEMENT (NO SIGNATURES)

FINAL

PROGRAMMATIC AGREEMENT
AMONG

THE BUREAU OF LAND MANAGEMENT,
THE USDA FOREST SERVICE,
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION,
THE IDAHO STATE HISTORIC PRESERVATION OFFICER,
THE WYOMING STATE HISTORIC PRESERVATION OFFICER,
THE BUREAU OF RECLAMATION,
THE NATIONAL PARK SERVICE,
THE U.S. ARMY CORPS OF ENGINEERS,
IDAHO POWER, AND ROCKY MOUNTAIN POWER

REGARDING COMPLIANCE WITH
THE NATIONAL HISTORIC PRESERVATION ACT FOR THE
GATEWAY WEST TRANSMISSION LINE PROJECT

WHEREAS, Idaho Power Company and PacifiCorp (doing business as Rocky Mountain Power), collectively known as the Proponents have applied for and the following federal agencies are considering the issuance of federal right-of-way (ROW) grants and associated permits for the Gateway West Transmission Line Project (Undertaking): the Bureau of Land Management (BLM), the United States Department of Agriculture Forest Service (USFS), the Bureau of Reclamation (BOR), the U.S. Army Corps of Engineers (Corps), and the National Park Service (NPS). These agencies (federal agencies) are Signatories to this Programmatic Agreement (PA); and

WHEREAS, the Proponents intend to construct, operate and maintain the Undertaking according to 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; and;

WHEREAS, the Undertaking includes the construction, operation and maintenance, of an approximately 1,000-mile-long transmission line stretching from near Glenrock, Wyoming, to 30 miles southwest of Boise, Idaho, across multiple federal, state, and local jurisdictions and across the ancestral lands of several Indian tribes (Appendix A – Map of Proposed Undertaking and Alternatives); and

WHEREAS, the BLM intends to issue a ROW grant for the construction, operation and maintenance of the Undertaking, following the issuance of the ROD, and the ROW grant will incorporate by reference this PA; and

WHEREAS, this PA and the Historic Properties Treatment Plan (HPTP) that will be developed pursuant to this PA will be incorporated into the POD; and

WHEREAS, the BLM has determined that issuance of the ROW grant triggers the requirements of Section 106 of the National Historic Preservation Act (NHPA) for the Undertaking as defined at 36 CFR 800.16(y); and

WHEREAS, for purposes of the Undertaking, the BLM Rawlins Field Office is lead for compliance with Section 106 on behalf of the federal agencies (36 CFR 800.2(a)(2)) and is the primary contact for all parties to this Agreement and Indian tribes; 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), hereafter called historic properties, and has consulted with the Idaho and Wyoming State Historic Preservation Officers (SHPOs) who are Signatories to this PA; and

WHEREAS, the effects of the Undertaking on historic properties are multi-state in scope and cannot be fully determined prior to approval of the Undertaking, and the BLM is using the regulations at 36 CFR 800.14(b)(1)(i)-(ii) to create this PA, BLM consultation has determined that a phased process for compliance with Section 106 is appropriate for the Undertaking, as specifically permitted under 36 CFR 800.4(b)(2), 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 will be carried out in phases, as set forth in this PA, as part of planning for and prior to any Notice to Proceed and Undertaking implementation; and

WHEREAS, the BLM has notified the Advisory Council on Historic Preservation (ACHP), pursuant to Section 106 and its implementing regulations (36 CFR 800.6(a)(1)), and the ACHP has elected to participate in consultations and is a Signatory to this PA; 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 such affected tribes regarding their concerns under Section 106; in addition, the BLM will comply with the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act (NAGPRA), and Executive Orders 13007 and 13175; and

WHEREAS, the BLM continues to consult with the Shoshone-Paiute Tribes; the Shoshone-Bannock Tribes; the Ute Tribe of the Uintah & Ouray Reservation; the Eastern Shoshone; the Northern Arapaho; the Northern Cheyenne; the Northwestern Band of Shoshone; and the Oglala Sioux and has invited all of these tribes to be Concurring Parties to this PA; and

WHEREAS, the USFS, Intermountain and Rocky Mountain Regions, manages National Forest System lands on the Medicine Bow and the Caribou-Targhee National Forests that would be crossed by the Undertaking. The USFS must therefore consider whether to issue a Special Use Authorization for the construction and operation of the Undertaking and whether such issuance is consistent with the Medicine Bow National Forest and Caribou-Targhee National Forests Land and Resource Management Plans, thereby making it an Undertaking subject to review under Section 106 of NHPA and 36 CFR Part 800; and

WHEREAS, the Corps has determined that authorization for the Undertaking to place structures in, under or over navigable waters of the United States, as defined under 33 CFR 329, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403), and authorization for placement of dredge or fill material in waters of the United States as part of the Undertaking, as defined under 33 CFR 328, pursuant to Section 404 of the Clean Water Act (33 U.S.C. § 1344), requires review under Section 106 and 36 CFR 800; and

WHEREAS, the Corps reserves the right as needed, to conduct additional consultations on a government-to-government basis with Indian tribes regarding permitting actions related to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403), or Section 404 of the Clean Water Act (33 U.S.C. § 1344); and

WHEREAS, alternative routes may affect (a) the City of Rocks National Reserve, a unit of the NPS and a National Historic Landmark, and containing Cassia Silent City of Rocks, a National Natural Landmark; (b) Minidoka National Historic Site, a unit of the NPS and listed on the NRHP as a nationally significant historic property; (c) Hagerman Fossil Beds National Monument, a unit of the NPS, containing the Hagerman Horse Quarry, a National Natural Landmark, and a portion of the Oregon National Historic Trail; (d) Fossil Butte National Monument, a unit of the NPS, containing Haddenham Cabin, listed on the NRHP as a nationally significant historic property; and (e) intact segments of the Oregon and California National Historic Trails, which are administered by the NPS, which has elected to participate in consultations and is an Invited Signatory to this PA; and

WHEREAS, alternative routes may cross the Sawtooth National Forest, and if any of these alternatives is selected, the Sawtooth National Forest must consider whether to issue a Special Use Authorization; and

WHEREAS, the BLM has consulted with and invited to be Concurring Parties to this PA the Oregon-California Trails Association (OCTA), the Alliance for Historic Wyoming (AHW), and the National Trust for Historic Preservation (National Trust); and

WHEREAS**,** the Proponents, as potential grantees of the ROW, have participated in consultation per 36 CFR 800.2(c)(4), and through signature to this PA, agree to carry out the stipulations herein under the oversight of the BLM, and are Invited Signatories to this PA; and

WHEREAS**,** the BLM will require that the Undertaking be executed in accordance with the conditions of the right-of-way that may be granted by the federal land managing agencies, and in accordance with the stipulations of this PA, which shall be appended to and made a part of the ROD authorizing the ROW grant; and

WHEREAS, unless defined otherwise in this Agreement, all terms are used in accordance with 36 CFR 800.16; and

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 Section 106 responsibilities of the federal agencies for all aspects of the Undertaking.

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STIPULATIONS

The BLM shall ensure that the following measures are carried out:

I. Area of Potential Effects (APE)

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 of the Undertaking. 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, distribution lines and other related transmission infrastructure for this Undertaking. The APE, as defined and documented, is a baseline for survey and inventory. The BLM may modify the APE in accordance with Stipulation I.B. of this PA.

1. Direct Effects

The APE for direct effects is the area within which historic properties may sustain physical alteration or destruction as a result of the Undertaking. The following APEs take into account ground-disturbing activities associated with the Undertaking:

a. For above ground transmission lines, the APE will be 500 feet (250 feet on either side of centerline for the ROW).

b. The APE for access roads, except for existing crowned and ditched or paved roads, will be 100 feet on either side of the centerline for a total width of 200 feet.

c. The APE for distribution lines to substations and regeneration stations will be included in the APE for access roads where distribution lines follow access roads and are within the APE for these roads. Where distribution lines do not follow access roads, the APE for distribution lines will be 200 feet (100 feet on either side of the centerline for the ROW).

d. The APE for staging areas, borrow areas, substations, and other transmission infrastructure will include the footprint of the facility and a buffer of 200 feet around the footprint of the proposed activity.

e. The APE for pulling/tensioning sites that fall outside the ROW will be the footprint of the site plus a 250-foot radius around these points.

f. The APE for boreholes is a five-acre area centered on the borehole.

g. The APE for direct effects from the post-construction operation and maintenance of the transmission lines and other facilities is the area of the federal ROW grants and/or permits.

2. Indirect Effects

   The APE for indirect effects from the Undertaking on historic properties considers visual, audible, and atmospheric elements that could diminish the integrity of the properties for which setting, feeling, and/or association are qualifying characteristics of NRHP eligibility. The indirect APE for the Undertaking extends for five miles, or to the visual horizon, whichever is closer, on either side of the preferred routes and alternatives. The indirect APE may extend beyond the five-mile convention to encompass properties that have traditional religious and cultural importance, including traditional cultural properties (TCPs), or other geographically extensive historic properties such as trails, when effects have been determined by BLM, in consultation with SHPOs and appropriate consulting parties, to extend beyond this distance. The assessment of visual effects on historic properties will incorporate a Geographic Information System (GIS) viewshed assessment as well as BLM Visual Resource Management (VRM) concepts as discussed in Stipulation II.C.2, and Indian Tribes' traditional, cultural, and spiritual views of the landscape.

3. Cumulative Effects

   For the purposes of this PA, the APE for cumulative effects is the same as that for direct and indirect effects. Cumulative effects may be direct or indirect and result from incremental effects related to the Undertaking over time (e.g., increased access because of new roads, future transmission lines along the same corridor, new projects feeding into the Undertaking, etc.).

B. Amending the APE.

1. The APE, as currently defined, encompasses an area sufficient to accommodate all of the proposed and alternative Undertaking components under consideration as of the date of the execution of this Agreement. The APE may be modified where tribal consultation, additional field research or literature review, consultation with interested 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.

2. If the BLM determines that currently unforeseen changes to the Undertaking may cause direct, indirect, or cumulative effects to historic properties beyond the extent of the established APE, then the BLM shall adjust the APE using the process set forth in Stipulation I.B.3. below.

3. Any Signatory, Invited Signatory, or Concurring Party to this PA may propose that the APE be modified. The BLM shall send all Signatories, Invited Signatories, and Concurring Parties to this agreement a description and a map of the modification and consult with them for no more than 30 days in an effort to reach consensus on the proposal. Agreement to amend the APE will not require an amendment to the PA. If all the said parties cannot agree to a proposal for the modification of the APE, then the BLM will consider their concerns and will render a final decision.

4. Amendment of the ROW grant during operations and maintenance of the facilities will be considered a separate Undertaking under Section 106.

II. Identification and Evaluation of Historic Properties

A. The BLM will ensure that all work undertaken to satisfy the terms of this PA meets the Secretary of the Interior's Standards for Archeology and Historic Preservation (48 FR 44716) (*Federal Register*, September 29, 1983) and is consistent with the ACHP guidance on archaeology found at www.achp.gov/archguide and the Guidelines for Evaluating and Documenting Traditional Cultural Properties, *National Register Bulletin 38*, 1998, as incorporated by reference herein. The BLM has defined conventions or standards for survey corridors and survey intensity to adequately identify historic properties that may be directly affected by this Undertaking, which may include properties of religious and cultural significance to Indian Tribes. All survey activity will meet BLM Manual 8110 guidance for a comprehensive survey (BLM Class III Survey) and be consistent with that of the SHPOs, including guidance and standards found in respective BLM and SHPO State Protocol Agreements. The BLM will also ensure that the work 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 state BLM permitting requirements.

B. The Proponents will directly fund all required fieldwork, analysis, reporting, and curation, which will be conducted only after they have obtained the appropriate federal and state permits for such fieldwork. The BLM or other appropriate federal land managing agency 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 Proponents.

C. The Proponents will conduct the cultural resources inventory and identification effort for this Undertaking in six phases.

1. Phase 1 – Literature Review – A literature review has already been completed for a one mile-wide corridor along all alternatives of the proposed Undertaking. The literature review resulted in a report for each state that has been reviewed and commented on by BLM and each state's SHPO. The Proponents conducted the literature review to inform all subsequent phases, and it will be used as a reference document to support all of the Class III surveys conducted for this Undertaking. The Proponents 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. Phase 2 – Alternatives Surveys – The Proponents conducted an initial Class II sampling survey (referred to in the Technical Reports as "Class III sampling surveys") for the Undertaking that consisted of an intensive pedestrian survey of 15 percent of the length of all alternatives. One-mile-long by 500-feet-wide transect strips were surveyed along the proposed and alternative routes on federal lands only, for use in detailed analysis in the EIS. This also included a detailed preliminary assessment of effects on historic trails on all lands within the APE, including existing trail condition and a visual effects assessment.

   The BLM required the Proponents to conduct a study of the National Historic Trails in order to determine indirect effects to these properties. The BLM required the use of *Guidelines for Determination of Visual Effects of an Undertaking on the Integrity of a Historic Setting*, Appendix C of the *State Protocol between the BLM and SHPO* (Protocol), executed between the Wyoming BLM and Wyoming SHPO (BLM 2006), for determining visual effects on the trails' historic settings. The viewshed assessment involved a GIS exercise of overlaying the known historic trails on the visibility surface (consisting of five miles on either side of the transmission

line) to determine areas from which the towers could potentially be seen. Specific Key Observation Points (KOPs) were selected for conducting Visual Contrast Ratings (VCRs) and potential photo simulations in the field.

3. Phase 3 – Geotechnical Boring – As analyzed under the Environmental Assessment for the Gateway West Geotechnical Drilling Project, Class III surveys of five-acre blocks for each proposed borehole location are being completed by the Proponents. This was required in order to obtain BLM or other federal land managing agency permits for the completion of geotechnical testing necessary to support preliminary design and feasibility studies for specific locations for transmission infrastructure.

4. Phase 4 –Preferred Route Surveys – The fourth phase will be a Class III inventory of previously uninventoried portions of the Preferred Route (i.e. the route that will be considered for a ROW grant or other federal or state authorization) and all related Undertaking facilities located on lands where access has been granted, including all federal lands, state lands, tribal lands, and those privately owned lands for which survey permission has been received. As a part of the Class III survey of the Undertaking, the BLM has required the Proponents to conduct a visual effects assessment for effects of the Undertaking on historic trails and other properties where the setting is important to the qualities that make the property eligible. This work will be done in accordance with Stipulation II.E.

5. Phase 5 – Final Pre-Construction Surveys – After the BLM determines the selected route, the Proponents will complete Class III surveys under BLM guidance for the direct APE, with an assessment of indirect effects for the indirect APE, where not covered by previous Class III surveys or assessments. Where sufficient information for making site eligibility determinations is not available, the BLM and SHPOs may determine that additional archaeological testing or other investigations are necessary to complete NRHP evaluations for properties that may be affected. The Proponents will complete consultation and fieldwork for this phase prior to the initiation of construction.

6. Phase 6 – Surveys During Construction – The final phase will include surveys, as needed, of any components of the Undertaking that are outside the currently defined APE and are identified by the BLM after the Undertaking's initial Notice to Proceed has been issued (including changes in construction ROW and ancillary areas). Where the BLM determines that additional surveys are needed, no ground disturbance will be allowed in the specific areas requiring survey until the surveys and the effects determinations and any required mitigation are completed. Construction within the previously surveyed APE may continue while these additional surveys are being completed (see Stipulation XI).

D. Determinations of Eligibility

For each property that is within the APE, the BLM, in consultation with the Signatories, Invited Signatories and Concurring Parties, will determine NRHP eligibility pursuant to 36 CFR 800.4(c)(1) for each such property. These may include properties of religious and cultural significance to Indian tribes.

1. The BLM will distribute recommendations of NRHP eligibility to the appropriate Signatories, Invited Signatories and Concurring Parties for review and comment following 36 CFR 800.4(c). After a 30 day review period, the BLM will submit the determinations of eligibility, with all

comments, to the applicable SHPO for concurrence within 30 days. Following this review period, the BLM will seek consensus determinations of eligibility with the appropriate SHPO for all properties whether on federal, state, tribal, or private lands.

a. If the applicable SHPO and BLM 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 applicable SHPO and BLM agree that the property is eligible, then effect determinations will be in accordance with Stipulation E.

c. If the applicable SHPO and BLM do not agree on eligibility, the BLM will consult with the applicable SHPO further. If agreement cannot be reached within 30 days, then the BLM will obtain 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.

E. Assessment of Effects

1. The BLM will, in consultation with the Signatories, Invited Signatories and Concurring Parties, make determinations of effect consistent with 36 CFR 800.4(d) and identify any adverse effects for each historic property within the APE in accordance with the criteria established at 36 CFR 800.5(a)(1) and (2)(i)-(vii), and will provide SHPOs, tribes, and the other Signatories, Invited Signatories and Concurring Parties with the results of the finding following 36 CFR 800.11(e)(4)-(6). This will be done concurrently with the distribution of the Class III Inventory Report and the above determinations of eligibility. These determinations of effect will serve as the basis for the development of a Historic Properties Treatment Plan (HPTP).

2. The BLM will utilize the VCR assessment to determine the visual effects of the proposed Undertaking on historic properties. A visual effect is any modification in landforms, water bodies, or vegetation, or any introduction of structures, which interrupts the visual character of the landscape and disrupts the harmony of the basic elements (i.e., form, line, color, and texture). The guidelines for determination of visual effects of an Undertaking on the integrity of a historic setting under the VCR assessment are located in Appendix C.

3. The BLM will, in consultation with the Signatories, Invited Signatories and Concurring Parties, broadly assess cumulative effects under Section 106 in order to identify all reasonably foreseeable, potentially adverse effects as a result of the proposed Undertaking.

III. Reporting, Consultation and Review of Documentation

A. At the conclusion of the following phases of the fieldwork described in Stipulation II.C., the Proponents will submit copies of the draft report (either electronic or print) for each phase to the lead BLM Office for distribution to the appropriate BLM District or Field Office in each state and to the appropriate Signatories, Invited Signatories, and Concurring Parties for review:

- Literature Review (See Stipulation II.C.1)
- Alternative and Proposed Route Surveys Evaluation (See Stipulation II.C.2)
- Pre-Construction Surveys Evaluation (See Stipulation II.C.5)

- Surveys During Construction (multiple reports) (See Stipulation II.C.6; See Stipulation XI for review times)

Each report will be consistent with the appropriate state guidelines and formats including determinations of eligibility and effect. Reports shall also include appropriate state site inventory forms, other documentation for results of identification of properties of cultural and religious significance to tribes, and recommendations on the historic significance, integrity, and NRHP eligibility of identified cultural properties (36 CFR 800.4(c)). The following outlines review times applicable to Literature Review, Alternative and Proposed Routes Surveys Evaluation, and Pre-Construction Surveys Evaluation. Review times for Surveys During Construction can be found in Stipulation XI.

1. The Proponents will submit copies of the draft reports and site forms to the lead BLM Office for distribution to the appropriate Field Offices, and to the appropriate federal land managing agencies for review. The federal land managing agencies will have 30 days from receipt of each report to review and provide comments to the lead BLM Office on the initial draft. These comments will address adequacy of inventory and reports, the eligibility of properties identified during each phase (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 800.5). Based on the comments received, the BLM may require the Proponents to revise the reports. Any revised reports will be submitted to the BLM for a 15 day review.

2. After the federal review, and any subsequent time for revisions, the BLM will distribute reports to the appropriate Signatories, Invited Signatories, and Concurring Parties for a 15 day review and opportunity to provide comments to the lead BLM Office (see Stipulation VI for confidentiality requirements). Any revised reports will be submitted to the appropriate Signatories, Invited Signatories, and Concurring Parties for a 15 day review.

3. The BLM will then distribute reports to and seek consensus determinations of eligibility and effect with the appropriate SHPO for all properties whether on federal, state, or private lands for a 30 day review. If the 30 days pass with no request for extension and no other comments, the BLM shall assume acceptance of the report.

4. In addition to the above-cited reports, the Proponents will prepare a comprehensive inventory report for each state that covers all pre-construction surveys performed for this Undertaking. The final report will include the completed 15 percent sample surveys for non-selected alternatives and the full Class III inventory of the selected route that the Proponents will be permitted to construct and operate. These comprehensive report(s) will be produced no later than three years after the Phase 5 Pre-Construction Surveys and will be considered the final Class III inventory reports.

5. All other outstanding reports, such as mitigation or monitoring reports, or other reporting actions required under the HPTP, will be produced no later than three years after the completion of the relevant work element (as described in the HPTP) of the Undertaking.

B. Reviewing offices will notify the lead BLM Office main point of contact in writing (including email) requesting a review extension and providing the reason the time frame cannot be met. The lead BLM Office will determine whether to grant an appropriate extension.

IV. Tribal Consultation

Through government-to-government consultation with Indian tribes, pursuant to 36 CFR 800.2(c)(2), the BLM, and other federal land managing 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, such as an ethnographic study. Ethnographic studies are not required, but may be requested by tribes. 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 VI).

V. Historic Properties Treatment Plan (HPTP)

A. If the BLM determines that the Undertaking will have adverse effects on historic properties, the BLM shall consult with the appropriate SHPO and other Signatories, Invited Signatories, and Concurring Parties to develop and evaluate alternatives or modifications to the Undertaking that could avoid, minimize, or mitigate adverse effects to those properties. The Proponents will develop an umbrella HPTP, which will include treatment guidelines for certain categories of adversely affected historic properties such as trails. The HPTP will be utilized as a field guide during construction of the transmission line and associated facilities, and for the reclamation of temporary disturbance areas once construction is completed. It will also include provisions for monitoring during construction and reclamation, and appendices for treatment of Inadvertent Discoveries of Cultural Resources and Human Remains at any time during the Undertaking. The HPTP will also include Segment Plans, negotiated per Stipulation V.D., that will outline treatments for individual historic properties that may be adversely affected within particular segments of the Undertaking. Individual Segment Plans must be completed to an acceptable level, to be determined by the BLM and SHPOs as described in Stipulation X.B., by the Proponent prior to issuance of a Notice to Proceed (NTP) for the segment or resources in question, as stipulated in Stipulation V.C. below. The BLM will ensure consultation with all the parties, as noted in Stipulation V.E., prior to the development, finalization, and/or implementation of the umbrella HPTP or HPTP Segment Plans.

B. The mitigation strategy may vary depending on the type of adverse effect. For direct effects, avoidance is the preferred strategy and may involve redesign or relocation of specific components of the Undertaking. If avoidance and/or minimization is not a reasonable option, selected mitigation may include data recovery, especially for archaeological sites. For indirect effects, mitigation options such as topographic screening will be used to the maximum extent possible to reduce the visibility of the transmission line route from historic properties. The HPTP will provide specific avoidance, minimization, or mitigation measures, commensurate with the Undertaking, to lessen any potential for cumulative effects. Determinations of the potential cumulative effects within the reasonably foreseeable future will be based on the APE and be defined in the HPTP.

   Other treatment measures for direct, indirect, and cumulative effects may include, but will not be limited to:

   a. Completion of NRHP nomination forms.
   b. Conservation easements.
   c. Historic American Buildings Survey (HABS) documentation.
   d. Historic American Engineering Record (HAER) documentation.

e. Historic American Landscapes Survey (HALS) documentation.
f. Purchase of land containing National Historic Trail segments for long term protection.
g. Partnerships and funding for public archaeology projects.
h. Print publication (brochure/book).
i. Visual media publication (website/podcast/video).

C. An HPTP Segment Plan will be completed by the Proponent for each work element (typically a Segment or its substations) before the BLM will issue a NTP for that segment or Undertaking element. An HPTP Segment Plan will not be required for a work element where no historic properties have been identified within the APE or for a work element with no adverse effect determination. Each HPTP Segment Plan will outline a strategy to mitigate adverse effects to the specific characteristics of the historic property that make it eligible for listing in the NRHP. Both the manner in which these NRHP qualities will be lessened and how proposed mitigation efforts will offset said effects will be clearly defined in the mitigation plan for each historic property. The plan will also identify the responsible parties and their roles. Given the nature of the phased construction of the Undertaking, specific treatment plans may be developed in stages. Each HPTP Segment Plan will list all historic properties that have been identified, including those avoided, by land ownership and by state. The plans will identify the specific mitigation strategies proposed to address the direct, indirect, and cumulative effects of the Undertaking on both individual historic properties and specific groups of historic properties (e.g., archaeological sites, trails, etc.). Each HPTP Segment Plan will adhere to the guidance provided by ACHP (http://www.achp.gov/archguide/)[1], the Secretary of the Interior's Professional Standards, HABS/HAER/HALS guidance (http://www.nps.gov/hdp/), and appropriate state guidelines.

Each HPTP Segment Plan will address, but is not limited to, the following:

1. The assessment of effects and how adverse effects to historic properties will be resolved in consultation with the Proponents and other consulting parties.

2. Preparation of a Monitoring Plan, including tribal participation, for the Undertaking.

3. Monitoring as part of a defined strategy to identify and resolve adverse impacts to historic properties from indirect and cumulative effects.

4. Methods to document proposed treatment and reporting of mitigation.

D. The Proponents will develop and submit each HPTP Segment Plan to the BLM for review and comment for 30 days. The BLM will respond with written comments, if needed, and the Proponents will incorporate the comments and revise each HPTP Segment Plan as appropriate.

E. When the BLM has approved each HPTP Segment Plan proposed by the Proponents, the BLM will submit each draft HPTP Segment Plan to the Signatories, Invited Signatories, and Concurring Parties for review and comment for 20 days. The BLM will incorporate the comments, as appropriate, into a revised document and will submit the HPTP Segment Plan to the said parties for a second review. All said parties will respond to the second review of the HPTP Segment Plan within 10 days. The BLM will submit the final HPTP Segment Plan with comments to the SHPOs for review and comment for

[1] Two items in this guidance will not apply to Wyoming: specifically, site burial and mitigation banking of archaeological sites.

30 days. Upon final acceptance by the BLM and SHPO, each HPTP Segment Plan will be appended to the PA.

F. The HPTP will address operations and maintenance of the transmission line and related facilities. The HPTP will:
   a. Identify potential effects to historic properties remaining in the ROW from operation and maintenance of the Undertaking;
   b. Identify stipulations to the ROW grant for the operator to avoid, minimize, or mitigate adverse impacts to historic properties from operation and maintenance activities;
   c. Define a variance review process to be used during operations and maintenance to address any changes in procedure that could have an adverse effect on historic properties in the ROW (e.g., use of new types of equipment for vegetation maintenance in areas with sensitive resources), and stipulate that a BLM cultural resources specialist will review the proposed actions and make recommendations regarding the potential effects and the appropriate actions to avoid, minimize, or mitigate any adverse effects;
   d. Identify operation and maintenance activities that will not be subject to additional Section 106 review.
   e. Identify operation and maintenance activities that will require additional 106 review (e.g. an amendment to the ROW).

G. Operation and maintenance stipulations regarding historic properties shall be incorporated into the ROW grant via the POD. Federal land managing agencies shall ensure compliance with these stipulations, and that the appropriate cultural resource specialist will participate in compliance and grant reviews for the life of the grant.

VI. Confidentiality of Historic Property Information

The parties to this PA acknowledge that historic properties covered by this PA are subject to the provisions of Section 304 of the NHPA relating to the nondisclosure of sensitive information about the location, character, and ownership of a historic property, including historic properties of traditional religious and cultural importance to Indian tribes, and having so acknowledged, will ensure that all actions and documentation prescribed by this PA are consistent with the Act. The BLM may require data sharing agreements with parties interested in obtaining confidential information.

VII. Inadvertent Discovery of Cultural Resources

If potential historic properties are discovered or unanticipated effects occur to known historic properties at any time during the Undertaking, the BLM will implement the Inadvertent Discovery Plan. This plan will be included as an appendix of the HPTP.

VIII. Inadvertent 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 NAGPRA (25 U.S.C. § 3001). These procedures would be included as an appendix of the HPTP.

IX. 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 Proponents shall provide documentation of the curation of these materials to the BLM and the appropriate SHPO within 60 days of acceptance of the final comprehensive inventory report for the Undertaking. Materials found on federal lands will remain federal property when curated (unless otherwise appropriately repatriated in accordance with NAGPRA).

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. If private landowners wish to donate collections from their lands to a museum, university, historical society, or other repository, the BLM will offer to assist in the transfer by completing the repository's donation forms and other paperwork. Otherwise, collections from private lands shall be returned to the landowners within 30 days of acceptance by the SHPO of the final mitigation report. Documentation of the disposition of private collections shall be provided to the BLM and the appropriate SHPO.

X. Initiation of Construction Activities

A. The BLM will authorize treatment and/or construction only after issuance of a federal ROW grant, Special Use Authorization, and specific NTP or any other federal or state authorization to the Proponents. NTPs will be issued on a construction segment basis.

B. Prior to issuance of an NTP, the BLM shall ensure that each final HPTP Segment Plan is completed to a level acceptable to the BLM, in consultation with the appropriate SHPO. The completion of the Segment Plan will apply to all land in the segment regardless of ownership. An acceptable level may consist of the following conditions:

1. If fieldwork or alternative mitigation is complete:
   a. summary description of the work undertaken, and
   b. status of the reporting stipulations and schedule, or

2. If fieldwork or alternative mitigation is incomplete:
   a. a buffer for avoidance is clearly marked in the field until completion, and
   b. cultural resources monitoring, if required, is in place as outlined in the HPTP, or
   c. alternative mitigation plans are in place or completed to an acceptable level (per Stipulation X.B.1)

C. The BLM may issue NTPs for individual construction segments as defined by the Proponents in their construction plans, under 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, per Stipulation II.D-E, determines that:

a. no historic properties are present within the APE for that segment; or
b. historic properties are present within the APE for that segment but will not be affected or adversely affected.

XII. Changes in Construction Activities

A. The BLM and SHPOs will make every effort to expedite review of any changes to construction plans after initiation of construction. If the Proponents propose changes in the construction ROW or any ancillary areas outside of the APE surveyed for the Undertaking, the Proponents will conduct identification and evaluation of historic properties in accordance with Stipulation II. Results of the inventory report will be handled as follows:

1. If the inventory results in no cultural resources identified, the Proponents will submit copies of the draft inventory report to the lead BLM Office for distribution to the appropriate Field Offices, and to the appropriate federal land managing agencies for review. The land managing agencies will have 10 days to provide comments on the report to the lead BLM Office. If the BLM accepts the findings, the BLM may issue the NTP without SHPO review. If not, the Proponents will revise the report as necessary and resubmit it to the lead BLM Office within 10 days. The BLM will send the documentation to the SHPO and proceed. The report data will also be included in any final report for the Undertaking.

2. If the inventory results in no historic properties identified, the Proponents will submit copies of the draft inventory report to the lead BLM Office for distribution to the appropriate Signatories, Invited Signatories and Concurring Parties to this Agreement. Reviewers will provide any comments to the lead BLM Office within 15 days of receipt of the document. Any necessary changes to the report will be made by the Proponents and resubmitted to the appropriate Signatories, Invited Signatories, and Concurring Parties within 10 days. The BLM will then send the documentation to the SHPO who will have 20 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 of eligibility. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation X.

3. If the inventory results in historic properties identified, the Proponents will submit copies of the draft inventory report, including summaries of potential effects to any historic properties, to the lead BLM Office for distribution to the appropriate Signatories, Invited Signatories and Concurring Parties to this Agreement. Reviewers will provide any comments to the lead BLM Office within 30 days. Any changes to the report will be performed by the Proponents and resubmitted to the appropriate Signatories, Invited Signatories, and Concurring Parties within 15 days. The BLM will then send the documentation to the SHPO who will have 30 days to review and comment. The BLM will have 15 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 of eligibility and finding of effect. The BLM may issue the NTP or other applicable authorization to proceed at this point per Stipulation X.

XIII. Annual Reporting and Evaluation

The lead BLM office shall prepare an annual letter report of cultural resources activities pertaining to this Undertaking for all Signatories, Invited Signatories, and Concurring Parties by December 31 for the duration of this PA. The implementation and operation of this PA shall be evaluated on an annual basis by the Signatories, Invited Signatories, and Concurring Parties. This evaluation, to be conducted after the receipt of the BLM letter report, may include in-person meetings or conference calls among these parties, and suggestions for possible modifications or amendments to this Agreement.

XIV. Dispute Resolution

A. Should any Signatory to this PA provide notice to the BLM of its objection to an action under this PA, or implementation of the measures stipulated in this PA, within 30 days of becoming aware of an action, the BLM shall consult with all Signatories, Invited Signatories, and Concurring Parties to this PA to resolve the objection, unless otherwise specified in this document. If the BLM determines that the objection cannot be resolved, the BLM shall forward all documentation relevant to the dispute to the ACHP. The objecting party must provide reasons for, and a justification of, its objection at the time it initially submits its objection to the BLM. 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. The BLM's responsibility to carry out all actions under this PA that are not the subject of the dispute will remain unchanged.

XV. Amendment

A Signatory or Invited Signatory may recommend the PA be amended. This PA may be amended after a 30 day review and consultation among the Signatories, Invited Signatories, and Concurring Parties to this Agreement, if the amendment is agreed to in writing by all Signatories and Invited Signatories who have signed the PA. The amendment will be effective on the date a copy signed by all of the Signatories and Invited Signatories is filed by the BLM with the ACHP.

XVI. Termination

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. If the PA is terminated, the BLM will notify all parties to the PA of its plan for considering and resolving adverse effects to historic properties for the remainder of the Undertaking and request the ACHP comment within 45 days per 36 CFR 800.7(c).

D. In accordance with 36 CFR 800.7(c)(4), the BLM will take into account and respond to comments provided by the ACHP within 45 days, prior to making a final decision on how to proceed with regard to historic properties for the remainder of the Undertaking in the absence of a PA.

E. 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 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 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 SHPO that have not withdrawn from the PA. If both SHPOs withdraw from the PA, the PA will be considered to be terminated.

XVII. 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 five (5) years from the date of its execution. Upon such expiration, and prior to work continuing on the Undertaking, the BLM shall either (a) execute a Memorandum of Agreement pursuant to 36 CFR 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. Prior to the expiration date, the BLM may consult with the other Signatories, Invited Signatories, and Concurring Parties to reconsider the terms of the PA and amend it in accordance with Stipulation XIV. The BLM shall notify the Signatories, Invited Signatories, and Concurring Parties within 30 days as to the course of action the BLM will pursue.

B. Unless this PA is terminated pursuant to Stipulation XIV above, another agreement executed for the Undertaking supersedes it, or the Undertaking itself has been terminated, this PA will remain in full force and effect until the BLM, in consultation with the other Signatories and Invited Signatories, determines that construction of all aspects of the Undertaking has been completed and that all terms of this PA have been fulfilled in a satisfactory manner, not to exceed ten (10) years. Upon a determination by the BLM that all terms of this PA and any subsequent agreements have been fulfilled in a satisfactory manner, the BLM will notify the Signatories, Invited Signatories, and Concurring Parties 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 Signatories, Invited Signatories, and Concurring Parties.

XVIII. Wyoming General Provisions

A. Entirety of Agreement. This PA, consisting of twenty (20) total pages, represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations and agreements, whether written or oral, regarding compliance with Section 106 of the NHPA 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 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. The State of Wyoming and the WYSHPO, as well as the Shoshone-Paiute Tribes, the Shoshone-Bannock Tribes, the Ute Indian Tribe of the Uintah & Ouray Reservation, the Eastern Shoshone, the Northern Arapaho, the Northern Cheyenne, the Northwestern Band of Shoshone, and the Oglala Sioux, do not waive 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. 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.

EXECUTION of this PA by the Signatories, Invited Signatories, and Concurring Parties 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 Section 106.

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APPENDICES

A. Map of Proposed Undertaking and Alternatives

Map as of 4/26/2013.

B. Historic Properties Treatment Plan

[*Historic Properties Treatment Plan and associated Historic Properties Treatment Segment Plans will be appended to the document as they are developed.*]

C. Guidelines for Determination of Visual Effects on the Integrity of a Historic Setting Under the VCR Assessment

The Visual Contrast Rating will be used by the Proponents to analyze the potential visual impact of the Undertaking to historic properties for which setting is a contributing aspect of integrity. The basic philosophy underlying the system is: The degree to which the Undertaking affects the setting of a historic property depends on the visual contrast created between the Undertaking and the existing setting of the historic property. The contrast can be measured by comparing the project features with the major features in the existing setting. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the Undertaking. In conjunction with the Visual Contrast Rating worksheet, the use of illustrations, photographs, photo simulations and computer-generated models and images will be utilized to communicate the degree of contrast the Undertaking will have on the setting of historic properties.

No Visual Contrast occurs if the proposed project elements will not be seen; there is no contrast between the Undertaking and the setting. The agency determination will be "No Historic Properties Affected."

Weak Visual Contrast occurs if the proposed project elements, or portions of the elements, can be seen but will not dominate the setting or attract the attention of the casual observer because the basic elements of form, line, color and texture found in the setting are repeated in the project's physical elements. The agency determination will be "No Historic Properties Adversely Affected."

Moderate or Strong Visual Contrast occurs if the proposed project elements tend to dominate the setting. The agency determination will be "Historic Properties Adversely Affected."

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D. Table of Review Times

Stipulation	Document/Report	Sender	Reviewer	Review/consultation time	Revision time
I.B.3: Amending the APE	Description/map of proposed modification	BLM	S/IS/CP	30 day review	
II.D: Determinations of Eligibility	NHRP eligibility recommendations	BLM	S/IS/CP	30 day review	
	SHPO concurrence	BLM	SHPO	30 day review	
	If BLM/SHPO do not agree on eligibility	BLM	SHPO	30 day consultation	
III.A: Reporting, Consultation and Review of Documentation	Phase Reports and Site Forms	Proponents to BLM Lead Office	BLM, Federal land managing agencies	30 day review	15 day review (if needed)
		BLM	S/IS/CP	15 day review	15 day review (if needed)
		BLM	SHPO	30 day review	
V.D-E: Historic Properties Treatment Plan	HPTP Segment Plans	Proponents	BLM	30 day review	
		BLM	S/IS/CP	20 day review	10 day review (if needed)
		BLM	SHPO	30 day review	
XI: Changes in Construction Activities	Inventory Reports	See below			
If no cultural resources identified		Proponents to BLM Lead Office	BLM, Federal land managing agencies	10 day review	(Proponents may need to revise report and resubmit within 10 days)
If no historic properties identified		Proponents to BLM Lead Office	S/IS/CP	15 day review	(Proponents may need to revise report and resubmit within 10 days)
		BLM	SHPO	20 day review	(BLM 10 days to respond to SHPO comments)
If historic properties identified		Proponents to BLM	S/IS/CP	30 day review	(Proponents may need to revise report and resubmit within 15 days)
		BLM	SHPO	30 day review	(BLM 15 days to respond to SHPO comments)

*S/IS/CP = Signatories, Invited Signatories and Concurring Parties

ATTACHMENT S-2
DRAFT HISTORIC PROPERTIES TREATMENT PLAN

Including:

- Draft Monitoring Plan
- Draft Inadvertent Discovery Plan
- Draft Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action Outline
- HPTP Segment Plans

ATTACHMENT A
MONITORING PLAN

of the

HISTORIC PROPERTIES TREATMENT PLAN

GATEWAY WEST TRANSMISSION LINE PROJECT

Case File Numbers:
IDI-35849, Idaho
WYW-174598, Wyoming

Prepared by:

PacifiCorp
1407 W. North Temple
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and

Idaho Power Company
1221 West Idaho Street
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August 15, 2013

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Attachment 1 Archaeological Survey of Idaho Site Inventory Form
Attachment 2 Wyoming Cultural Properties Form
Attachment 3 Daily Cultural Resource Monitoring Log

1.0 INTRODUCTION

This Monitoring Plan (MP) specifically addresses monitoring for cultural resources (including but not limited to historic properties determined to be eligible for the National Register of Historic Places [NRHP]) during construction of the Gateway West Transmission Line Project (Project). This Plan provides details regarding roles and responsibilities of various personnel in the field in coordination with the Project-wide Environmental Compliance Monitoring Plan (ECMP). The ECMP is provided as Appendix C of the Project's Plan of Development (POD). The POD is provided as Appendix B of the Environmental Impact Statement. The Programmatic Agreement (PA) developed by the Bureau of Land Management (BLM) as lead agency under the National Historic Preservation Act (NHPA) in close cooperation with the Advisory Council on Historic Preservation, tribes, other federal agencies, and other interested parties, stipulates the development of this MP as an attachment to the Historic Properties Treatment Plan (HPTP). This MP was prepared by Rocky Mountain Power and Idaho Power Company (Companies) in consultation with the BLM, State Historic Preservation Office (SHPO), Tribes, and other consulting parties of the PA, per the PA, Sections V.A and C.2.

The purpose of this MP is to specify:

- how avoidance of known resources will be assured and documented during construction,
- how monitors will interact with other environmental compliance staff and construction personnel, and
- how monitors will employ the Inadvertent Discovery Plan and, if necessary, the Plan of Action for compliance with the Native American Graves Protection Act (NAGPRA).

This MP, as part of the Project-wide HPTP, will be supplemented with a set of confidential maps and site-specific resource avoidance details for each Segment Historic Properties Treatment Plan (Segment Plan). This MP presents the roles and responsibilities of the Cultural Resources Team (CRT) as well as specifies the procedures to be followed during construction activities.

Any discussion, summary, or paraphrasing of the BLM's PA measures in this MP is intended as general guidance and as an aid to the user in understanding the stipulations and their implementation. If there appears to be a discrepancy between the stipulations in the PA which have been summarized, described, or interpreted in this MP, the conditions and stipulations, as written in the PA, supersede interpretations in this MP.

2.0 CULTURAL RESOURCES TEAM

The CRT is a part of the Construction Contractor's environmental inspection team and will report to and coordinate with the Construction Contractor's Environmental Manager and Lead Archaeologist.

The Construction Contractor's CRT will conduct cultural resource field monitoring, ensure compliance with requirements within the HPTP and implement treatment as prescribed within the Segment Plans. Such activities will be inspected and coordinated by the Compliance Inspection Contractor (CIC).

The following sections describe the qualifications, roles, and responsibilities of each member of the CRT. Figure 2-1 – ECMP Organization for Cultural Resources presents the CRT reporting structure.

2.1 Cultural Resources Specialist (Principal Investigator)

Qualifications—The Cultural Resource specialist (CRS) must meet, at a minimum, the Secretary of the Interior's Professional Qualifications Standards for archaeology, history, or architectural history as published in Title 36 Code of Federal Regulations part 61, and in addition must have:

- At least 5 years of archaeological resource mitigation and field experience and
- At least 3 years of experience in a decision-making capacity on cultural resources projects, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

In addition, before construction begins, the CRS must hold a current appropriate state BLM Cultural Use Permit and Field Authorizations, U.S. Department of Agriculture Forest Service permit, and any other federal permits that are required for conducting cultural resources activities on such lands managed by other federal agencies, and/or a permit from the Wyoming Office of State Trust Lands for activities on lands managed by the State of Wyoming.

The Construction Contractor's Environmental Manager will provide written documentation, such as a resume, on the qualifications of the CRS to the CIC and Companies' Environmental Manager(s) no less than 75 days prior to the start of ground disturbance. At least 15 days prior to ground disturbance, the CRS will provide a letter naming anticipated Cultural Resource Monitors (CRMs), including sufficient alternates to account for absences, for the Project demonstrating that the identified CRMs meet the minimum qualifications for cultural resource monitoring.

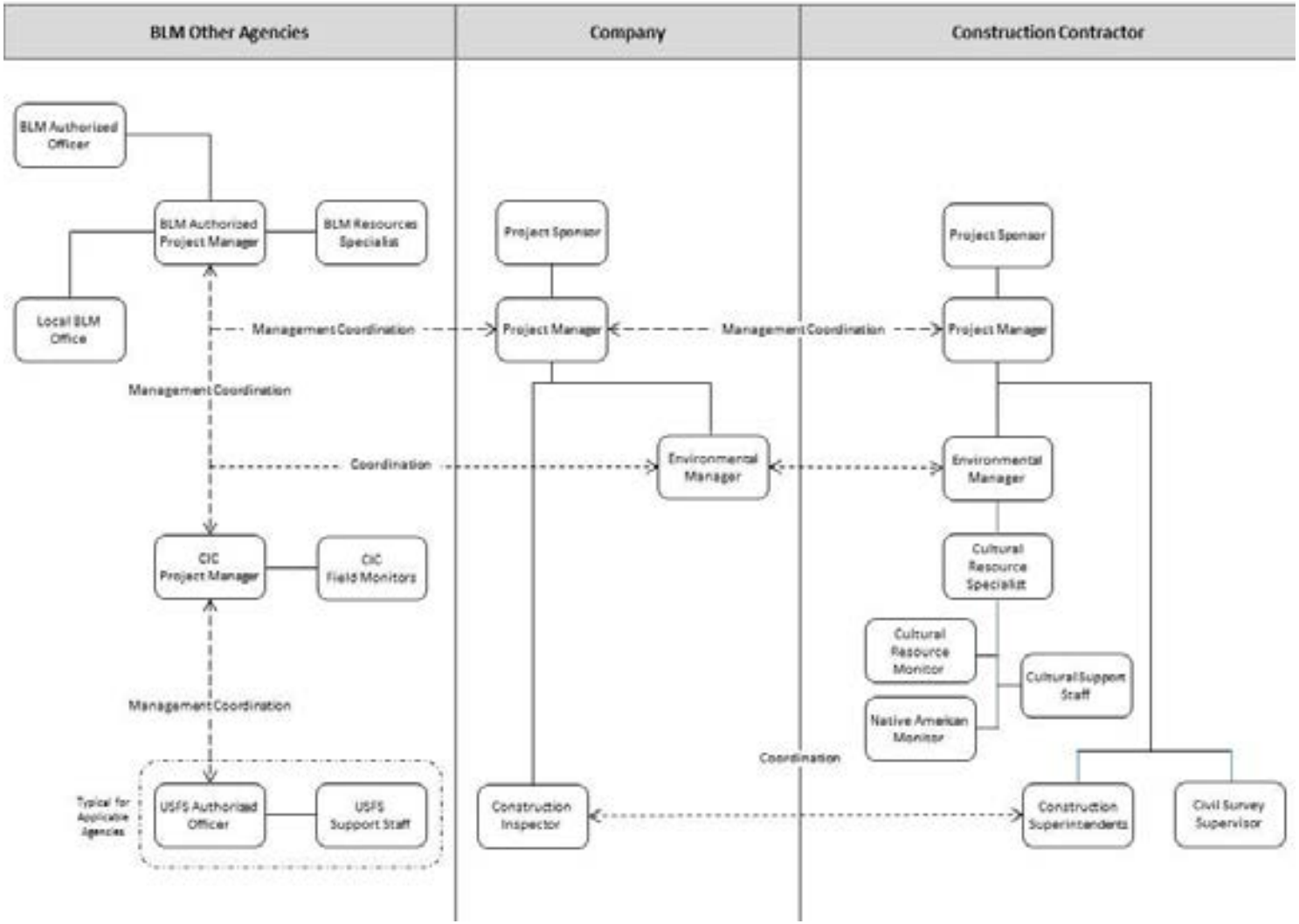

Figure 2-1 EMCP Organization for Cultural Resources

Responsibilities—The CRS will be the primary point of contact for the CRT. The CRS will coordinate directly with the Construction Contractor's Environmental Manager and with the CIC. The CIC will act as the conduit to the BLM Project Manager and Lead Archaeologist. However, CRS coordination with the CIC will be done with high-level cooperation with the Construction Contractor. The CRS will be responsible for cultural resource-related notifications to the Construction Contractor's Environmental Manager, who will be responsible for notifying the Companies, and to the CIC, who will be responsible for notifying the BLM. The CRS will be responsible for the analysis and the overall quality of the monitoring reports and discovery reports, if any. The CRS is responsible for the planning, execution, completion, and quality of the cultural resources monitoring tasks undertaken just prior to and during the Project construction.

The CRS will be responsible for obtaining construction plans and schedules from the Construction Contractor for tasking field personnel to monitor construction and evaluate or conduct data recovery excavations for any archaeological sites discovered during construction.

The CRS will direct the preparations for and execution of day-to-day construction monitoring activities, which will include the following actions:

- Present the cultural resources section of the environmental training program (an employee training program for all construction personnel prior to ground-disturbing activities). Cultural resource training will include the proper procedures to follow in the event that cultural resources are encountered during Project ground disturbance. The environmental training program may include a BLM-approved video, training pamphlets, or other media resources.
- Direct the CRM(s) regarding where and when to monitor Project construction activities.
- Review the CRM's daily monitoring log(s).
- Prepare a monthly summary report during active construction on the progress or status of cultural resources-related activities and submit to the CIC, who will submit the report to the BLM Project Manager and Lead Archaeologist. The summary will include any new archaeological site forms (appropriate state form) for any finds identified under the monitoring program (see Attachments 1 and 2 for state isolate and/or archaeological site forms).
- Notify the Construction Contractor's Environmental Manager, the CIC, and the BLM Archaeologist by telephone or email of unanticipated discoveries of any cultural resources within 24 hours of becoming aware of the situation.
- Notify the Construction Contractor's Environmental Manager, the CIC, and BLM Archaeologist by telephone or email of any incidents of noncompliance related to cultural resources within 24 hours of becoming aware of the situation, and recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.
- Where indicated, make a good-faith effort to coordinate the obtainment of Native American Monitors (NAMs).
- Obtain additional technical specialists or additional monitors, if warranted or required.

- Obtain appropriate specialist (e.g. qualified backhoe operator, Project Prehistoric Archaeologist, Historical Archaeologist, Geoarchaeologist, Physical Anthropologist), as needed, to guide and conduct the evaluation of cultural resources that are discovered if needed.
- Oversee curation required for the Project.
- If cultural resources are discovered within the Project Area of Potential Effect (APE) during construction, the CRS will:
  - Halt construction within a 200-foot radius from the boundary of the discovery.
  - Notify the Construction Contractor's Environmental Manager and the CIC as soon as feasible. The Construction Contractor's Environmental Manager will be responsible for notifying the Companies' Environmental Manager(s), and the CIC will notify the BLM Lead Archaeologist.
  - Cordon off and protect the area with flagging or by posting a monitor or construction worker to ensure that no additional disturbance occurs.
  - Conduct a non-invasive preliminary field assessment of the find.
  - Evaluate any cultural resources that are newly discovered for eligibility in the NRHP.
  - Submit a recommendation to the Construction Contractor's Environmental Manager and the CIC, who will submit it to the BLM Lead Archaeologist regarding NRHP eligibility of the discovered site.
- Oversee the completion of site forms and other appropriate documentation of discoveries by members of the CRT.
- If a site is determined eligible for the NRHP, the CRS will consult with the Construction Contractor's Environmental Manager and the CIC. The Construction Contractor's Environmental Manager will be responsible for coordinating with the Companies' Environmental Manager(s), and the CIC will coordinate with the BLM Lead Archaeologist. The CRS will develop a treatment plan for the historic property if it is not covered by the HPTP or relevant Segment Plan. The CIC and the BLM Lead Archaeologist will be responsible for coordinating with the parties to the PA.
- Determine the scope, methods, and techniques to be used for test investigations or data recovery and analysis of artifacts and other materials.
- Oversee the completion of any necessary test excavations or data recovery excavations.
- Oversee the completion of reports of tests excavations or data recovery excavations and ensure that the reports meet PA requirements and the appropriate SHPO standards for completeness and quality.

2.2 Cultural Resource Monitors

A Lead CRM will be assigned by the CRS to direct daily monitoring activities of the CRMs. CRMs will conduct the daily archaeological construction monitoring as specified

in the Segment Plan. Preference will be given to monitors that are familiar with the types of historic and prehistoric resources in the area. The qualifications and responsibilities of the CRM are as follows.

Qualifications—The Lead CRM and CRMs will either:

- Have a Bachelor of Science (BS) or Bachelor of Arts (BA) degree in anthropology, archaeology, historic archaeology, or a related field, at least 2 years of experience conducting archaeological fieldwork under direction of a professional archaeologist with at least 3 months of archaeological construction monitoring experience; or
- Have an Associates of Arts (AA) or Associates of Science (AS) degree in anthropology, archaeology, historic archaeology, or related field and at least 4 years of experience conducting archaeological fieldwork under the direction of a professional archaeologist with at least 3 months of archaeological construction monitoring experience.

Responsibilities—The Lead CRM will be present full time at the Project construction site, as directed by the CRS, to oversee and direct the daily monitoring task of the CRMs. The CRMs will watch ground-disturbing construction activities and inspect cleared ground and excavation trenches for signs of previously undiscovered archaeological resources during construction as indicated in the Segment Plan or until monitoring reduction has been approved by the BLM.

Prior to the start of construction or beginning of monitoring duties, all CRM staff will be trained in the consistent and accurate identification and recording of historic trails (e.g., Oregon National Historic Trail) and other local resource types within the Project region. Training will be conducted by the BLM Lead Archaeologist.

The CRM will provide daily documentation of construction activity and any findings. The monitor will prepare a daily monitoring log, briefly describing the field conditions, construction progress and activities, non-compliance activities, and record any finds of archaeological material. This daily log will include a report of the presence and activity of any NAM teaming with the CRM where one or more NAMs are assigned.

The CRM will be responsible for implementing the requirements outlined in the environmental training program. If the CRM or other construction personnel discover archaeological finds during construction, the CRM will have authority to halt construction in the vicinity of the find and will notify the CRS.

2.3 Native American Monitors

A list of approved NAMs will be prepared by the BLM and provided to the Construction Contractor and the CIC. NAMs may be employed by the Construction Contractor to monitor ground disturbance, if applicable and specified in the Segment Plan. Once approved NAMs are employed, all reasonable efforts will be made to contact and schedule NAMs to conduct appropriate monitoring. If NAMs are not available, construction may proceed after notifying the CIC and the BLM. Each NAM will be assigned to work closely with a CRM as a team. NAMs shall have the authority to temporarily divert, redirect or halt ground disturbance activities to allow for the

evaluation of prehistoric resources (i.e. unanticipated discoveries) only after coordination with the onsite CRM, who will immediately coordinate with the Lead CRM.

Qualifications—Preference in selecting a monitor shall be given to Native Americans with traditional ties to the Project area. The NAM(s) will be selected from the BLM provided list of approved NAMs. Preferred qualifications for NAM(s) include:

- Knowledge of, including but not limited to, village sites, cultural, religious, ceremonial, hunting, gathering, and burial practices within the Project region, traditional ties, and familiarity with the Project area.
- Ability to work with local law enforcement officials and the BLM to ensure compliance with NAGPRA.
- Ability to travel to Project sites within traditional tribal territory.
- Familiarity and/or knowledge of and understanding of Section 106 of the NHPA, as amended.
- Ability to read a topographical map, use a Global Positioning System (GPS) unit, and locate sites.
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.
- Experience as a tribal cultural resources monitor.

Responsibilities—The designated NAM(s) may participate in the monitoring and identification of Native American artifacts. In addition, the NAM(s) may be invited to be present at prehistoric site locations when construction is taking place and may be invited to assist with testing and recording of any prehistoric cultural resources found. In the event that data recovery excavation is necessary, the NAM may be invited to assist in excavation and site recording.

2.4 Potential Additional Cultural Field Staff

If the CRS and/or CRM(s) are needed in other areas were construction is continuing and ongoing, and/or in an effort to complete the work within a scheduled amount of time, it may be necessary to acquire additional field staff in the event of an unexpected data recovery effort or site-specific treatment as outlined in a Segment Plan. The following additional staff may be acquired, as to not remove CRMs from their monitoring duties. All archaeological field crews will work under the supervision of the CRS.

2.4.1 Field Director

Qualifications—The Field Director will have a BS or BA degree in anthropology, archaeology, historic archaeology, or a related field and meet the Secretary of the Interior's Qualification Standards for Archaeologists and/or be listed on the state BLM Cultural Use Permit as a Principal Investigator and/or Field Director (as approved by the BLM State Office).

Responsibilities—The Field Director, under the supervision of the CRS, will be responsible for the day-to-day activities of the testing and data recovery investigations, including management of field personnel and coordination of crews. The Field Director

will also be responsible for compiling and ensuring the quality of the field data on a daily basis. Additionally, the Field Director will coordinate the work of sub-consultants or other contractors participating in the archaeological field investigations, and will be responsible for implementing the requirements of the environmental training, including daily safety briefings.

2.4.2 Crew Chiefs

Qualifications—The Crew Chief(s) will have a BS or BA degree in anthropology, archaeology, historic archaeology, or a related field and at least 2 years of experience as an archaeological crew chief.

Responsibilities—The Crew Chief(s) will, in consultation with the Field Director, be responsible for implementing the field strategies at individual sites. The Crew Chief will direct the field crew, lay out excavations, and compile collections and field documentation on a daily basis. Additionally, the Crew Chief will be responsible for implementing on-site safety procedures and/or environmental training.

2.4.3 Field Crew

Qualifications—The field crew for any field recording or excavation activities will have a BS or BA degree in anthropology, archaeology, historic archaeology, or a related field, and field school experience; or an AA or AS degree in anthropology, archaeology, historic archaeology, or related field, and archaeological field school experience.

Responsibilities—Field crew members will conduct surface examinations and hand excavations, and monitor mechanical test investigation excavations. Each crew member will operate under the direct supervision of the Crew Chief and will conduct basic documentation of field operations, including the completion of excavation-level records, bag labeling, and trench monitoring forms.

2.4.4 Laboratory Director

Qualifications—The Laboratory Director will have a BS or BA degree in anthropology, archaeology, historic archaeology, or a related field and field school experience; or an AA or AS degree in anthropology, archaeology, historic archaeology, or related field, archaeological field school experience, and have previous experience managing a laboratory for a data recovery project.

Responsibilities—The Laboratory Director will be responsible for directing all phases of laboratory processing of the data recovery collections, including check-in, cleaning, sorting, cataloguing, analyzing, distributing special samples, and preparing for curation. The Laboratory Director will coordinate closely with the CRS to ensure that the appropriate data are documented and compiled.

3.0 MONITORING AND AVOIDANCE PROCEDURES

This section describes the monitoring procedures that will apply Project-wide. Where warranted, the Segment Plans will include additional site-specific monitoring requirements. The objectives of monitoring are to assure and document avoidance of historic properties during Project construction, to identify at the time of discovery any archaeological materials exposed during ground disturbance, and to protect such resources from damage while recommendations of eligibility for the NRHP are made by the CRS and provided to the BLM Lead Archaeologist, via the CIC, for review and approval.

3.1 Cultural Resource Construction Monitoring

Cultural resource monitoring for the Project will be conducted Project-wide, unless otherwise specified by the landowner, land management agency or in the Segment Plans. For the purposes of this HPTP MP, archaeological construction monitoring is defined as on-the-ground, close-up observation by a CRS or CRM, meeting the qualifications prescribed in Section 2.0 – Cultural Resources Team.

The CRS and/or CRM will observe the ground during mechanical scraping, grading, excavating, and similar activities for archaeological resources that might be exposed by these activities. Cultural resource monitoring will not be required once all surface and subsurface ground disturbance in a construction area is completed or if equipment or vehicles are traveling over previously disturbed surfaces, or as specified in a Segment Plan. Routine travel on existing or disturbed roads or across disturbed transmission structure pads will not be monitored for cultural resources. However, additional blading or excavating at a depth beyond the previously disturbed area will be monitored for cultural resources, even within previously-graded or bladed areas. A CRM will be required when sensitive resources barriers are installed to protect cultural resources but no other environmentally sensitive areas (e.g., biological resources) unless those sensitive areas are within a historic property. The CRM will ensure that the barrier is erected in the proper place. The barriers or sensitive resource signage will be removed once construction is completed in that area.

The CRM will maintain daily monitoring logs (Attachment 3) of Project-related construction monitoring activities. Logs will reflect the daily monitoring activities and will include:

- Date, time of work, and amount of time spent at a construction monitoring location
- Area of work
- Type of work, equipment present, and name of construction crew being monitored
- Construction activities being performed
- Documentation of successful resource avoidance

- Activities for which there are cultural resource problems, non-compliances, or other concerns
- Identification of an unanticipated discovery
- Name of NAM(s), if present
- Color digital photographs shall be taken (as appropriate) to document construction and monitoring activities and submitted as attachments to the daily log.

CRMs will prepare and provide their monitoring logs daily to the CRS, and prepare and provide monthly summary reports on the progress or status of cultural resources-related activities during active construction to the CRS. The CRS will submit the reports to the BLM Project Manager Lead Archaeologist. In addition, the summary reports to the BLM Lead Archaeologist shall include any new archaeological site forms for finds for which such forms are required by the relevant SHPO policy and identified under the monitoring program. The monthly reports will summarize construction progress, monitoring (monitor name, dates worked, finds, issues, etc.), and status of cultural resource-related issues.

The CRS will direct the preparation and distribution of a Cultural Monitoring Results report and an archaeological report to the BLM Project Manager and Lead Archaeologist and appropriate state SHPO for any archaeological test excavation or data recovery program that takes place. The BLM/SHPO will provide a written approval of the documentation received via email, within 1 day of receiving the material.

If the CRS determines that full-time monitoring is not necessary in certain construction locations and that monitoring will be conducted on an “as needed” intermittent schedule, the CRS will provide a detailed letter or email to the Construction Contractor’s Environmental Manager. The Construction Contractor’s Environmental Manager will coordinate the letter or email with the Companies’ Environmental Manager(s) and the CIC. The CIC will provide the letter or email to the BLM Lead Archaeologist, who will coordinate with the appropriate state SHPO (at least 24 hours prior to implementing any change) explaining the decision to reduce the level of monitoring. The BLM/SHPO will provide a written approval to the CIC via email within 1 day of receiving notice to reduce monitoring.

If a discovery is made, the notification procedures found in the **Inadvertent Discovery Plan** (HPTP Attachment B) shall be followed. If human remains are discovered on federal land the **Native American Graves Protection and Reparation Act Plan of Action** will be adhered to (HPTP Attachment C).

If requested by a Native American group/tribe, the BLM Lead Archaeologist will send the appropriate Native American representative a notification (via letter or email) following the discovery of Native American cultural materials other than those considered isolates. If such notification is transmitted, the CRS shall copy the CIC (omitting any confidential information) and the BLM Lead Archaeologist. If any comments are received from the Native American representative regarding the discovery, the CRS shall submit copies of all received comments within 15 days of receipt to the CIC and the BLM Lead Archaeologist.

The CRS and/or CRMs will maintain the flagging and staking of sensitive resources (e.g. archaeological sites) to ensure that they are avoided, unless otherwise directed by

BLM. The sensitive resource signage will be removed once construction in that specific area is completed.

3.2 Authority to Halt Construction

The CRS and the CRM(s) will have the authority to temporarily halt construction operations within a 200-foot (60-meter) radius of a find or exposed resource to determine if historic properties are present and if they will be adversely affected by continuing construction operations. The NAM(s), if present, may also temporarily halt construction operations, but only after coordination with the onsite CRM, who will immediately coordinate with the Lead CRM. The CRS or CRM will be responsible for delineating the area within which construction will halt using flagging tape, rope, or some other means as necessary.

If there is a find and associated work stoppage, all notifications will occur within 24 hours and are as follows. The CRS will notify the Construction Contractor's Environmental Manager and the CIC. The Construction Contractor's Environmental Manager will be responsible for coordinating with the Companies' Environmental Manager(s), and the CIC will coordinate with the BLM Project Manager and Lead Archaeologist. The BLM will coordinate with Native American groups that have expressed an interest in being notified of such a discovery. The CRS will email the CIC, who will provide the BLM Lead Archaeologist and appropriate state SHPO a description of the find, a location map, preliminary site sketch map (as appropriate), digital photos, and recommendations regarding the find. Construction will not take place within the delineated find area until the CRS has completed field notes, measurements, and photography for a site record (unless the find can be treated prescriptively); the CRS, in consultation with the CIC and BLM Lead Archaeologist, can inspect and evaluate the find and determine whether or not further mitigation is required; and the BLM has agreed to the recommended evaluation and treatment.

3.3 Flagging, Fencing, and Signage Measures

For Project construction activities, the CRM will flag or provide signage for previously recorded and newly identified sensitive areas that are within 30 meters of Project construction, to assure such resources are avoided and that ground disturbing construction activities do not impact flagged site boundaries or inadvertent discoveries. The use of "Environmentally Sensitive Area" signage will be used for culturally and biologically sensitive areas during construction. The signage will be posted around (immediately outside) the cultural resource sensitive area by the cultural resource monitor one day prior (as practical) to construction in the area (to avoid drawing attention to the area prior to construction).

The CRS and/or a CRM will field check and maintain signage and assure that it remains in place while construction activities in the vicinity are active. The CRS or CRM will remove the flagging and/or signs following the completion of Project-related construction activities in the vicinity.

3.4 Monitoring Locations and Schedule

The CRS and/or Lead CRM and CRM(s) will observe ground disturbance as specified in Section 3.1 – Cultural Resource Construction Monitoring.

The CRS will obtain a construction schedule from the Construction Contractor at least 2 weeks prior to the start of ground-disturbing activities to ensure proper CRM staffing. The CRS and/or Lead CRM will then establish a schedule for the CRM(s) and NAM(s) teamed with each CRM, as appropriate, to follow and a protocol for communication with the CIC and the Construction Contractor's Environmental Manager, who will confer with the CRS on any changes to construction dates. Daily updates or changes to the construction schedule will be provided by the Construction Contractor to the CRS and the CIC as appropriate.

The CRS shall ensure that adequate monitors (including NAMs where applicable) are available as work load fluctuates during construction.

As described in Section 2.3 – Native American Monitors, a NAM or NAMs will be obtained and be present to monitor ground-disturbing activities if applicable and specified in the Segment Plan, unless otherwise specified by the landowner, land management agency. In general, a NAM will be teamed with a CRM in the field. The intent is to have an adequate number of NAMs on contract, where NAMs are indicated, to allow for rotation to ensure the interests of various tribes are represented and to allow for substitute NAMs should particular individuals become unable to fulfill those responsibilities at particular point in time.

3.5 Construction Compliance

The CRS and Lead CRM will coordinate with the CIC to monitor and report problem areas and any non-compliance issues to the BLM Project Manager and Archaeologist. The CRS will then notify the Construction Contractor's Environmental Manager, who will notify the Companies' Environmental Manager(s).

Non-compliance procedures as specified in the ECMP will be followed. If the non-compliance includes unauthorized or unmonitored ground disturbance, cultural resource surveys to determine presence of or damage to cultural resources will be required, effects determinations and mitigation also completed if indicated, and a written notice from the BLM Manager received, before construction will be allowed to continue in the non-compliance area.

3.6 Construction Change Management

During construction, operation, and/or maintenance of the Project unforeseen or unavoidable site conditions can result in the need for changes from approved mitigation measures and construction procedures. Additionally, the need for route realignments, extra workspaces, or access roads outside of the previously approved construction work areas may arise (e.g. to avoid an inadvertent discovery), resulting in the need to prepare a variance request. The CIC will consult with the CRS for any variances requested by the Construction Contractor to assure cultural resource compliance. All

applicable procedures as specified in the ECMP, PA, HPTP, and/or Segment Plans will be followed.

If a new area outside the previously-surveyed APE is proposed for ground disturbance, a pedestrian survey (Phase 6, PA Section II.C.6) for cultural resources must be conducted and a report documenting presence or lack of surface resources submitted as part of the variance approval process. If cultural resources are found, NRHP eligibility and effects determinations as well as any applicable mitigation must be completed before ground disturbance can be permitted.

ATTACHMENT 1
ARCHAEOLOGICAL SURVEY OF IDAHO SITE INVENTORY FORM

ARCHAEOLOGICAL SURVEY OF IDAHO
SITE INVENTORY FORM
Part A – Administrative Data

1. State No._____
2. Agency No._____
3. Temporary No._____

4. Site name(s)_____ **5. County**_____

6. Class:
q Prehistoric q Historic q Traditional Cultural Property q Undetermined

7. Land owner_____ **8. Federal admin. unit**_____

9. Project_____ **10. Report No.**_____

11. Recorder(s)_____

12. Organization_____ **13. Date**_____

14. Attachments and associated records:

q Topographic map (required)
q Site map (required)
q Photos with labels/log (required)
q Artifact illustrations
q Feature drawings
q Stratigraphic profiles
q Rock art attachment
q Historical records
q Assoc. IHSI forms_____
q Other_____

15. Elevation (site datum)_____**(ft)**

16. Site dimensions:_____**m X** _____**m** **Area**_____**m^2**

17. UTM at site datum: Zone____ _____**m Easting** _____**m Northing using NAD 1983.**

18. UTM source:
q Corrected GPS/rectified survey (<5m error) q Uncorrected GPS q Map template q Other explained under comments

19. Township_____**, Range**_____**, Section**_____**;** _____**1/4 of** _____**1/4 of** _____**1/4**
Additional legals listed on an attachment. c

20. USGS 7.5' map reference_____
Additional maps listed on an attachment. c

21. Access_____

22. Site description_____

23. Site type:

q Historic building*	q Rockshelter/cave	q Mortuary	q Faunal
q Historic structure*	q Stacked/placed rocks	q Rock art	q Culturally modified trees
q Historic object*	q Quarry/lithic source	q Feature(s)	q Other_____
q Prehistoric residential	q Linear	q Artifact(s)	

*Following definition for the National Register of Historic Places.

24. Specify themes and time periods:

Themes		Time Periods	
q Prehistoric archaeology	q Military	q Prehistoric-general	q Settlement: 1855-1890
q Agriculture	q Mining industry	q Paleoindian	q Phase 1 statehood: 1890-1904
q Architecture	q Native Americans	q Archaic-general	q Phase 2 statehood: 1904-1920
q Civilian Conservation Corps	q Politics/government	q Early Archaic	q Interwar: 1920-1940
q Commerce	q Public land management	q Middle Archaic	q Premodern: 1940-1958
q Communication	q Recreation/tourism	q Late Archaic	q Modern: 1958-present
q Culture and society	q Settlement	q Late Prehistoric-general	q Historic/Modern-general
q Ethnic heritage	q Timber industry	q Protohistoric/Contact	q Unknown
q Exploration/fur trapping	q Transportation	q Historic Native American	
q Industry	q Other _____	q Exploration: 1805-1860	

25. National Register of Historic Places (NRHP) evaluation: *

q Individually eligible q Contributing in a district q Not eligible q Insufficient information to evaluate

*Evaluation subject to review by SHPO.

26. NRHP criteria used:

q A: Event q B: Person q C: Design and construction q D: Information potential

27. Comments on significance_____

_____

_____

28. If not eligible, explain why_____

_____

_____

29. Condition (prehistoric component):

q Excellent q Good q Fair q Poor

Condition (historic component):

q Excellent q Good q Fair q Poor

30. Impact agents:

q Agricultural use	q Development project	q Mining/quarrying	q Road/highway	q Vandalism
q Building alteration	q Erosion	q No information	q Rodent damage	q Other_____
q Deflation	q Grazing	q Recreation use	q Structural decay	
q Demolished	q Looting	q Research excavation	q Timber harvest	

Comments on impact agents_____

31. Surface collection:

q None q Previously collected q Grab sample q Designed sample q Complete

32. Sediments:

q Absent q 0-20 cm q 21-100 cm q >100 cm q Suspected but not tested

Explain how this was determined_____

33. Excavation status:

q Unexcavated q Auger/probe q Test unit q Backhoe, etc.
q Surface scrape q Shovel test q Block excavation

Describe collection/testing/excavation_____

_____

_____

34. Excavation volume (indicate liters or cubic meters) _____ **Screen mesh**_____

35. Additional comments_____

_____

_____

_____

_____

_____

_____

Part B – Environmental Data

36. Distance to permanent water_____m

37. Water source:

q Spring, seep q River/stream q Lake q Other_____

38. On-site vegetation (estimate percentage of total vegetation for each class and identify species):

Trees: _____% Species:_____

Shrubs: _____% Species:_____

Forbs: _____% Species:_____

Grasses: _____% Species:_____

Lichens/mosses: _____% Species:_____

Describe_____

_____

39. Visible surface area:

q 0% q 1-25% q 26-50% q 51-75% q 76-100%

40. Landform (Describe, including lithology, form, and soil, using locally or regionally appropriate terms, eg. arroyo, playa, moraine, etc.)_____

_____

_____

_____

_____

_____

_____

Part C – Prehistoric Sites

41. Phase/period_____

42. How classified_____

43. Maximum artifact density_____m^2

44. Individual artifacts:

Count	Category	Description

45. Lithic Debitage – Estimated Quantity:

q None q 1-9 q 10-25 q 25-100 q 100-500 q 500+

Flaking Stages (not present, rare, common, or dominant):

Decortication_____ Secondary_____ Tertiary_____ Shatter_____

46. Material types_____

_____

_____

47. Additional description_____

_____

_____

_____

_____

_____

_____

_____

_____

48. Features:

Count	Category	Description

49. Additional description_____

_____

_____

_____

_____

Part D – Historic Sites

50. Cultural affiliation_____

51. Oldest date_____ **Recent Date**_____

52. How determined_____

53. Maximum artifact density_____**m^2**

54. Individual artifacts:

Count	Category	Description

55. Additional description_____

_____

_____

_____

_____

_____

_____

56. Features:

Count	Category	Description

57. Additional description_____

_____

_____

_____

_____

_____

ATTACHMENT 2
WYOMING CULTURAL PROPERTIES FORM

Date _____ **Smithsonian #** _____

RECORD TYPE: ___ First-recording, ___ Full Re-record, ___ Update, ___ Condition Report, ___ Site Lead

PROPERTY CATEGORY: ___Prehistoric Site, ___Historic Site, ___Building, ___Structure, ___Object, ___District, ___Landscape, ___Lithic Landscape, ___TCP

1. IDENTIFICATION/OWNERSHIP

Consultant Project Number _____ Agency Project Number(s) _____

Associated Project Name_____

Site Name _____ Temporary Field Number _____

Other Common names: _____ Agency Site Number _____

Other Site Number _____

Landowner (at time of this reporting, specify agency/district, if private give name and address): ___ check here if site information is confidential

2. LOCATION (repeat as needed on continuation sheets; ____ check here if additional locational information is on continuation sheet)

Street address _____ Town _____

Lot-Block: _____ Parcel _____ County _____

USGS 7.5' Map Name, Date _____

Township _____._ Range _____._ Section ____ ¼'s _____ Template: _____

Township _____._ Range _____._ Section ____ ¼'s _____ Template: _____

Township _____._ Range _____._ Section ____ ¼'s _____ Template: _____

Elevation (ft.):_____ UTM Coordinates (center point is required; bounding UTM(s) required for sites > 200m in any dimension)

UTM: Zone ____ E _____ m N _____ m Datum used to calculate: __NAD 27 __NAD 83

Bounding UTM : (1) E _____N _____ (2) E _____N _____

(3) E _____N _____ (4) E _____N _____

UTM source: ___corrected GPS/rectified survey (<5m error), ___uncorrected GPS, ___map template, ___other:_____

GPS Model/Software: _____

Notes pertaining to access:

3. NATIONAL REGISTER STATUS (check all that apply in each category)

ENROLLED STATUS ___Landmark/Monument, ___Enrolled on NRHP

FACTORS AFFECTING INTEGRITY (check all that apply; indicate specific areas of disturbance and vandalism on a copy of the site map)

Disturbance/Vandalism : __none, __erosion, __vandalism, __collection, __structural damage, __ manual excavation, __ mechanical excavation, __vehicle traffic, __structural decay, __grazing, __construction/development, __defacement, ___imminent destruction, __unknown

Percent of property badly disturbed as of this recording date, to nearest 10%): _____

NATIONAL REGISTER OF HISTORIC PLACES SIGNIFICANCE

Period(s) of significance: _____ Theme(s) _____

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILTY RECOMMENDATIONS (check all applicable):

Recorder NRHP Evaluation: ___ Eligible under criteria ___a, ___b, ___c, ___ d ; ___ Not Eligible, ___ Unevaluated

Contributing Components: ___ Prehistoric, ___ Historic Associated person for criterion b property_____

Justification: (Include in justification a statement of significance; discussion of contributing components (indicate spatial extents on maps); and integrity (location, design, setting, materials, workmanship, feeling, association); discuss how significant periods and themes were determined)*:

Agency Determination: ___ Eligible under criteria ___a, ___b, ___c, ___ d ; ___ Not Eligible, ___ Unevaluated Date/initials: _____

Justification:

*Continue narrative as needed on separate page or by expanding section on word processor. data entry, this page ___

Date _____ **Smithsonian #** _____

SHPO Concurrence: ___ Eligible under criteria ___a, ___b, ___c, ___ d ; ___ Not Eligible, ___ Unevaluated Date/initials: _____

Justification:

4. INVESTIGATIVE HISTORY (Check all that apply, use property narrative for additional information as appropriate)

Recorded by: _____ Organization: _____

Field Dates: _____

DISCOVERY METHOD (describe in site narrative description)
___ Exposed on surface, ___ Exposed subsurface, __Construction discovery, ____ Documentary sources, ____ Informant

WORK PERFORMED (as part of this recording ONLY; describe numbers and dimensions of sampling/excavation units in narrative section)

__Surface recorded	__Tested with probe device	__Materials sourcing	__Lab analyses
__Shovel tested	__Controlled Trench/Blade	__Remote sensing	__Material sample program
__Formal test unit(s)	__Geomorphology study	__Photos/Sketches/Video	__C-14 dating
__Block excavation	__Paleo-environmental study	__Collections research	__Other (describe in narrative)

MATERIALS COLLECTED AS PART OF THIS RECORDING? ___ yes, ___ no, ___ unknown

Repository: ___ U. W. Archaeological Repository (UWAR), ___Western Wyoming College, ___Other:_____

5. PROPERTY DESCRIPTION

4.0 PHYSICAL DIMENSIONS
Length _____ m, Width _____ m, Area: _____sq. m, (__estimated __ measurement method:_____)

Boundary estimates based on:

___ feature/artifact distribution, ___ modern features or disturbance, ___ property boundaries, ___ topography, ___ other, ___ unknown.

Property datum? ___ yes, ___ no (describe if yes): _____

RECORDS INVENTORY (check all appropriate attachments associated with this recording)

Required attachments*:
___ (6) Prehistoric/Historic Archaeological Site Setting, Topography, Depositional Environment (*not required for urban and rural buildings, structures, objects, or historic districts)
___ (7) Site Narrative Description
___ (8) Prehistoric/Historic Site Matrix
___ site map w/scale,orientation.,key
___ location map (USGS 1:24,000 base)
___ photographs/images

Additional Attachments:
(One or more of the next 8 are required)
___ (8A) artifacts associated with prehistoric component
___ (8B) features associated with prehistoric component
___ (8C) artifacts associated with historic component
___ (8D) features associated with historic component
___ (8E) historic and/or prehistoric rock art/inscription component
___ (8F) historic architecture description
___ (8G) linear feature description
___ (8H) lithic landscape sample description
___ (8I) historic structure/object description

Optional Attachments:
__ (8J)TCP description
__ artifact illustrations
__ stratigraphic profile
__ field notes
__ artifact catalog
__ electronic data
__ other (describe):

Date _____ Smithsonian # _____

6. PREHISTORIC/HISTORIC ARCHAEOLOGICAL SITE SETTING, TOPOGRAPHY, DEPOSITIONAL ENVIRONMENT*
Section 6 is not required for urban and rural buildings, structures, objects, or historic districts)

GENERAL TOPOGRAPHIC SETTING

___Basin/Interior, ___Foothill/Basin Margin, ___ Major River Terraces, ___Mountain/Major Uplift, ___Unknown

Geographic Division (cf. "Wyoming Geologic Highway Map" published by Western Geographics with the cooperation of the Geological Survey of Wyoming Revised Edition 1991, R.D. Christiansen, Geologist Map compiled and adapted from Geologic Map of Wyoming. Divisions prepared by Richard W. Jones, 2002. See map in "Users Guide.")

___Absaroka Range	___Great Divide Basin	___Madison Range	___Shirley Mtns.
___Bates Hole	___Green River Basin	___Medicine Bow Mtns.	___Snake River Range
___Beartooth Mtns.	___Green Mtn.	___N Laramie Basin Structures	___Sublette Range
___Bighorn Basin	___Goshen Hole	___Overthrust Belt	___Star Valley
___Bridger Basin	___Gros Ventre Range	___Owl Creek Mtns.	___Teton Range
___Bighorn Mtns.	___Hanna-Carbon Basin	___Powder River Basin	___Tunp Range
___Black Hills Uplift	___Hartville Uplift	___Rawlins Uplift	___Washakie Basin
___Casper Arch	___Hoback Range	___Rock Springs Uplift	___Washakie Range
___Denver Basin	___Jackson Hole	___Salt River Range	___Wind River Basin
___Ferris Mtns.	___Kindt Basin	___Sierra Madre Mtns.	___Wind River Range
___Fossil Basin	___Laramie Basin	___Seminoe Mtns.	___Yellowstone Volcanic Plateau
___Granite Mtns.	___Laramie Mtns.	___Shirley Basin	___Unknown

UNIQUE SITE SETTING (check as appropriate, describe site setting in general narrative):

___playa	___arroyo cutbank	___rockshelter	___spring
___saddle/pass	___cliff	___cave	

GENERAL TOPOGRAPHIC SETTING (few words): _____

VEGETATION ASSOCIATION (cf. Knight 1994:8, Mountains and Plains: The Ecology of Wyoming Landscapes; Yale Univ. Press)

___Alpine	___Ponderosa Pine	___Desert Shrub	___Riparian
___Spruce/Fir	___Aspen/Conifer	___Grassland	___Cultivated
___Douglas-Fir	___Oak	___Sagebrush	___Unknown
___Lodgepole Pine	___Juniper	___Sand Dunes	___not applicable

OVERALL PERCENT BARE GROUND (discuss variation in ground visibility in general site narrative)

___0%, ___1-25%, ___26-50%, ___ 51-75%, ___ 76-99%, ___ 100%, ___ unknown, ___not applicable

GENERAL DEPOSITIONAL ENVIRONMENT (check all applicable, describe in general site narrative):

___unknown, ___ aeolian, ___alluvial, ___colluvial, ___bare rock, ___regolith, ___not applicable, ___other

AEOLIAN SETTINGS (Late Pleistocene and Holocene aeolian deposits)

Is site in/partly in an aeolian deposit?: ___yes, ___no, ___unknown, ___ not applicable

If "yes", which type(s)? ___dune, ___sand shadow, ___sand sheet, ___ deflation area, ___don't know

SUBSURFACE POTENTIAL

Archaeological subsurface deposits: ___yes, ___no, ___unknown/undetermined

Maximum depth below surface of cultural deposits: ___ meters, ___unknown, ___ not applicable (enter zero if no subsurface deposits are present)

Estimate based on: ___rough guess, ___ shovel test(s), ___core/auger tests, ___excavation(s), ___road/arroyo cuts, ___animal burrows, ___other information (describe in narrative)

Date _____ **Smithsonian #** _____

7. SITE NARRATIVE DESCRIPTION

In addition to general description, the site narrative should address explicitly the kinds and amount of work done at a site, the site environment (setting, geomorphology, soils and sediments, vegetation), site condition and threats to the site. All other matters that demand more discussion than the other sections of the form allow should be discussed in a well-organized fashion here. Tables and other materials can be part of the site narrative, as appropriate. Dating and laboratory results should be cited here, with clear references to laboratory numbers and results.

Date _____ **Smithsonian #** _____

8. Prehistoric/Historic Site Matrix (attach (8A) "Artifacts Associated with Prehistoric Component", (8B) "Features Associated with Prehistoric Component", (8C) "Artifacts Associated with Historic Component", (8D) "Features Associated with Historic Component" as appropriate). Check boxes for "yes" as appropriate.

	OCCURRENCE		CONTENTS			
COMPONENT	Surface	Subsurface	Artifacts	Features	Rock Art	
PREHISTORIC						
Unknown Prehistoric	___	___	___	___	___	
Paleoindian	___	___	___	___	___	
Early Archaic	___	___	___	___	___	
Middle Archaic	___	___	___	___	___	
Late Archaic	___	___	___	___	___	
Archaic (general)	___	___	___	___	___	
Late Prehistoric	___	___	___	___	___	
PREHISTORIC PHASES (optional)						
Great Divide	___	___	___	___	___	
Green River/Opal	___	___	___	___	___	
Pine Spring	___	___	___	___	___	
Deadman Wash	___	___	___	___	___	
Uinta	___	___	___	___	___	
Firehole	___	___	___	___	___	
PROTOHISTORIC	___	___	___	___	___	
HISTORIC						Building(s)/ Structure(s)
Unknown Historic	___	___	___	___	___	___
Early Historic	___	___	___	___	___	___
Pre-territorial	___	___	___	___	___	___
Territorial	___	___	___	___	___	___
Expansion	___	___	___	___	___	___
Depression	___	___	___	___	___	___
WWII Era	___	___	___	___	___	___
Post WWII	___	___	___	___	___	___
Modern	___	___	___	___	___	___

Periods of Significance – Protohistoric (1720-1800); Early Historic (1801-1842); Pre-territorial (1843-1867); Territorial (1868-1889); Expansion (1890-1919); Depression (1920-1939); WWII-era (1940-1946); Post-WWII (1947-1955); Modern (1956-present)

Date _____ Field # _____ Smithsonian # _____

8A . ARTIFACTS AND DEBRIS ASSOCIATED WITH PREHISTORIC COMPONENTS

Component age* and identifier:_____
*Thematic Periods – Unknown Prehistoric, Paleoindian, Early Archaic, Middle Archaic, Late Archaic, Archaic (general), Late Prehistoric, Protohistoric;

Instructions: Check to indicate artifacts present. Preferably, put in an estimated count for each artifact class where appropriate. Keywords for types or forms are used in the data system to enhance finding specific sorts of artifacts (e.g., "drill", "perform", "Duncan", "Folsom"). Artifacts diagnostic of time period or cultural affiliation should be listed in the table. Describe artifacts in the site narrative or below. As appropriate, diagnostics should be illustrated or photographed with scale and labeled as to type identification. Additional sheets and analytical data may be attached (counts may be included in parentheses).

GENERAL
___ Time diagnostics
___ Affiliation diagnostics

CHIPPED STONE
___ Lithic sources
___ Debitage
___ Cores (____)
___ Projectile points (____)
___ Bifaces (____)
___ Scrapers (____)
___ Other formal tools (____)
___ Modified flakes (____)
___ Core tools (____)
___ Hammerstones (____)

___ **OBSIDIAN**

___ **FIRE-ALTERED ROCK**

DEBITAGE FREQUENCY
(check only one)
___ unknown
___ none
___ 1-10
___ 11-100
___ 101 –1000
___ 1001-10,000
___ >10,000

DEBITAGE COMPOSITION
___ % Primary
___ % Secondary
___ % Tertiary

GROUND STONE
___ Manos (____)
___ Metates (____)
___ Unk. ground stone (___)
___ Other ground stone (____)

CERAMICS/STEATITE
___ Ceramics (___)
___ Steatite (___)

BONE AND ORGANIC
___ Bone (unknown size/type)
___ Large mammal
___ Medium mammal
___ Small mammal
___ Amphibian, bird, or reptile
___ Fish
___ Egg shell
___ Mollusc shell
___ Organic debris
___ Other (describe below)

OTHER ARTIFACTS
___ Shaped bone/bone tool(___)
___ Cordage(___)
___ Metal Points/Items(___)
___ Basketry(___)
___ Beads(___)
__bone__shell__glass__other
___ Other Decorative Items(___) (describe)
___ Other (describe)

HUMAN REMAINS
___ Human remains
___ Artifacts associated w/remains

ARTIFACT KEYWORDS:

DIAGNOSTIC ARTIFACT INVENTORY (diagnostic artifacts should be plotted on site sketch map): List temporal-cultural diagnostic artifacts below. Use general ages from site age matrix, and list specific diagnostic type. (e.g., Middle Archaic for general age, "Duncan" for type, "McKean" for complex). General ages are: Paleoindian, Early, Middle, and Late Archaic, Archaic (undifferentiated); Late Prehistoric; Protohistoric; unknown age. See "Users Guide" for definitions and examples of technological-cultural complex. Expand table as necessary.

General Age	Type name	Materials (if known)	Count	Collected y/n	Technological or cultural complex	Description

__ Check here if artifacts are described in site narrative. Otherwise, describe below:

* Continue narrative as needed on separate page or by expanding section on word processor. data entry, this page ___

8B. FEATURES ASSOCIATED WITH PREHISTORIC COMPONENT

Component age* and identifier:_____
*Thematic Periods – Unknown Prehistoric, Paleoindian, Early Archaic, Middle Archaic, Late Archaic, Archaic (general), Late Prehistoric, Protohistoric;

Instructions: Check to indicate features present. Preferably, also put in an estimated count for each feature class where appropriate. Feature diagnostic of time period or cultural affiliation should be listed in the table. Keywords are used in the database to aid in searching for specific feature types – enter as appropriate (e.g., "slab-lined hearth", "wickiup", "antelope trap"). Describe features in the site narrative or below. NOTE that agency reporting requirements may require specific feature enumerations. Additional sheets and analytical data may be attached.

___ Hearths (___)
___ Fire-altered rock concentrations (___)
___ Localized fire-related stain (___)
___ Roasting pit (___)
___ Storage pit (___)
___ Pit (___)
___ Post hole (___)

___ Pit house/House pit (___)
___ Stone circle (___)
___ Cairn (___)
___ Bonebed (___)
___ Alignment (___)
___ Quarry feature (___)
___ Rock art panel (___)

___ Organic structure(___)
(e.g. lean-to, wickiup, corral - describe)
___ Other (describe)

FEATURE KEYWORDS:

FEATURE INVENTORY (feature # should key to site sketch map):

Feat. #	Feature Description	Check if more info attached
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___

___ check here if this list is continued on a continuation form (expand on word processor as needed)

___ check here if features are described in site narrative, otherwise describe below:

Date _____ Smithsonian # _____

8C. ARTIFACTS ASSOCIATED WITH HISTORIC COMPONENT

Component age* and identifier:_____

*Periods – Protohistoric (1720-1800) Early Historic (1801-1842) Pre-territorial (1843-1867) Territorial (1868-1889); Expansion (1890-1919); Depression (1920-1939) ; WWII-era (1940 to 1946); Post-WWII (1947 to 1955); Modern (1956-present); use exact dates if known

Presence/Absence of common time-diagnostics:

___purple glass (UV altered)
___aqua glass
___clear glass
___auto machine bottles
___hand applied finish bottles
___makers' marks
___solder dot cans
___hole-in-top cans
___sanitary cans
___cut nails
___wire nails
___ceramic trademarks
___other (describe)

Presence/Absence of common artifact classes:

___plate glass
___bottle glass
___ceramics
___metal
___nails
___tin cans
___tobacco tins
___bottle caps
___wire
___furniture hardware
___silverware/cutlery
___lamp parts
___corrugated metal
___stove parts
___wood
___furniture
___leather
___sawn lumber
___wagon parts
___car parts
___bone
___toys
___building hardware
___firearm-related
___clothing-related
___other (describe)

Estimated total assemblage size: ___ 0-10, ___ 11-100, ___101-1000, ___1001-10,000, ___>10,000

ARTIFACT KEYWORDS:

HISTORIC ARTIFACTS

Instructions: Use lines below to list artifacts associated with this component. The IMACs user's guide provides a fairly comprehensive list of artifact types but its use is optional. Alternatively, you may attach a substitute format, so long as it tallies the artifact content adequately.

Artifact Type	Count

__ check here if this list is continued on a continuation form (expand with word processor as needed) or provided in an alternate format

__ check here if artifacts are described in site narrative section, otherwise use space below for general notes on historic artifacts

8D. FEATURES ASSOCIATED WITH HISTORIC COMPONENT

Component age* and identifier:_____
* Periods – Protohistoric (1720-1800) Early Historic (1801-1842) Pre-territorial (1843-1867) Territorial (1868-1889); Expansion (1890-1919); Depression (1920-1939) ; WWII-era (1940 to 1946); Post-WWII (1947 to 1955); Modern (1956-present); use exact dates if known
Instructions: Plot features, labeled by number, on site sketch map. Attach photographs, images, drawings, notes, other recording materials as appropriate, labeling each with feature number.

Human Remains:

___ Human remains (describe – include presence/absence of marker)
___ Suspected grave
___ Artifacts associated with human remains

FEATURE KEYWORDS:

FEATURE INVENTORY (feature # should key to site sketch map):

Feat. #	Feature Description	Check if more info attached
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___
_____	_____	___

___ check here if this list is continued on a continuation form (expand on word processor as needed)

___ check here if features are described in site narrative, otherwise describe in table above.

Comments and Continuation (note any relevant historic documentation searches performed)

8E. HISTORIC AND/OR PREHISTORIC ROCK ART/INSCRIPTION COMPONENT DESCRIPTION

Presumed Age of Art Panel: ___Modern, ___ Historic, ___ Protohistoric, ___ Prehistoric, ___ Unknown

Location: ___ cliff, ___ flat outcrop, ___ rockshelter, ___ boulder, ___ tree, ___building/structure, ___other (describe)

Panel #_____of_____ Description of Placement and Distance to Surrounding Panels:

Type of Rock and geological formation:
Panel Faces____at____degrees east of north. Approximate inclination of panel___degrees
Height of art element(s) from present ground level: Highest_____, Lowest_____
Panel dimensions_____(height) x_____(width)
Site Datum to Panel Datum_____m at_____degrees east of north
Associated/nearby archaeological deposits: ___ yes, ___ no, ___ unknown (describe in narrative if yes)

Cultural/Stylistic Affiliation
__ Fremont, __Dinwoody, __General Great Plains, ___Other Native American, ___Euroamerican, __ Unknown

Specific cultural affiliation if known (e.g., Basque): _____

Figure manufacture attributes (check all that apply):
__ Pecked-solid, __ Outlined pecked, __ Stipple pecked, __ Incised, __ Scratched, __ Abraded, __ Painted, __ Other (describe):

Comments:

General Classification: (Check all that apply)
Anthropomorphs
___ V-Neck figure, ___ Shield bearing warrior, ___ Stick, ___ Square shoulder, ___ Oval/round-bodied, ___ Triangular/tapered, ___ Naturalistic, ___ Don't know, ___ Other(describe)
Zoomorphs
___ Bison, ___ Bear, ___ Canid, ___ Horse, ___ Elk/deer, ___ Sheep, ___ Pronghorn, ___ Unknown artiodactyl, ___ Bird, ___ Reptile/Amphibian, ___ Don't know, ___ Other (describe)

___ **Abstracts/symbols** (describe in narrative)

___ **Names/Initials/Dates** (describe in narrative)

ROCK ART KEYWORDS:

Detailed description of panel: (describe figures represented, method of production, number and types of elements/motifs, etc.):

Background: ___ natural, ___ smoke blackened, ___ varnished, ___ other
Natural rock feature incorporation (describe):

Chronological evidence (describe)
__ Objects depicted __ Superimpositions __ Design varnish or coatings __ Weathering __ Dating (specify method)
Comments:

Panel Condition (describe)
__ Vandalism
__ Other damage
__ Lichen cover
__ Weathering/deterioration
Panel condition description:

Preservation concerns and conservation recommendations:

Best lighting conditions to view panel, if known:

Recordings completed: ___ scaled drawings, ___ tracings, ___ field sketch, ___ photographs/images

8F. HISTORIC ARCHITECTURE COMPONENT DESCRIPTION

Instructions: Complete this form for each primary standing building/structure as appropriate. If a site contains more than one building or structure, e.g. a ranch house and barn – complete an attachment for each structure. When using this form, structures should retain identifiable architectural elements. Generally, historic archeological sites should not be recorded on this form. Secondary structures such as corrals, fences, lean-to's, and outbuildings without architectural interest, may be documented on attachment 8D. Attach a sketch map showing the building, associated features and other buildings and the building setting as appropriate (with a scale and north arrow). Attach color photographs or images sufficient to illustrate the general building form and condition. Attach photographs, images, or measured drawings of unique architectural elements. Additional records (e.g., blueprints) can be attached as appropriate. References for this section include: Architecture in the Cowboy State; Eileen F. Starr, 1992; "National Register Bulletin 15", USDI/ NPS, 1991; A Field Guide to American Houses, Virginia & Lee McAlester, 1984.

Common name: _____

Historic name: _____

Type of building: _____ Number of associated resources _____

Historic District Smithsonian Number (if applicable) _____

OWNERSHIP – Property owner and address:

NATIONAL REGISTER OF HISTORIC PLACES SIGNIFICANCE (discuss as appropriate in narrative and in core form; the following applies to the individual building)
Period of significance: _____ Theme _____
Periods – Protohistoric (1720-1800) Early Historic (1801-1842) Pre-territorial (1843-1867) Territorial (1868-1889); Expansion (1890-1919); Depression (1920-1939) ; WWII-era (1940 to 1946); Post-WWII (1947 to 1955); Modern (1956-present); use exact dates if known.

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY RECOMMENDATION (discuss as appropriate in narrative and in core form):

If eligible, is this building ___ contributing or ___ non-contributing

Justification: (Include in justification a statement of significance for building; integrity (location, design, setting, materials, workmanship, feeling, association); discuss how significant periods and themes were determined):

CONSTRUCTION HISTORY (use "unknown" as appropriate)

Dates of construction/major modification (use more lines as appropriate)

Date	Circa y/n	Date source
_____	____	_____
_____	____	_____

Architect(s):_____

Builder(s):_____

Building moved? (yes/no/unknown) ____, Date(s) moved: _____, Moved from: _____

Current use(s) _____ , Historic use(s) _____

DESCRIPTION (see handbook for guidelines)

Style/Type _____

Number of stories: __1, __1-1/2, __2, __ 2-1/2, __ multiple, __ don't know, __ other (describe):

Foundation (describe, i.e., stone, concrete, post and sill, etc.):

Roof (describe materials, i.e., asphalt, wood):

Structural system (i.e., wood frame, masonry):

Cladding (i.e., wood siding, asphalt):

Windows (describe number and types, i.e., double hung, casement, fixed etc.):

Porches:

Chimneys:

Basement:

Modifications/Additions**:**

Distinctive landscaping elements:

ARCHITECTURE KEYWORDS:

ADDITIONAL NARRATIVE (e.g., relationship of building to complex and/or district; other notes; interior description):

Date _____ **Smithsonian #** _____

8G. LINEAR RESOURCE DESCRIPTION (this form must be accompanied by a core form for first recording of a resource; when recording segments of a previously recorded, eligible linear resource, complete this form for each contributing/non-contributing segment. Illustrate area recorded on attached location and sketch map; if core form has been previously completed, this form is all that is required.)

Consultant Project Number _____ Agency Project Number(s) _____

Associated Project Name_____

Site Name _____ Temporary Field Number _____

Other Common Names: _____ Agency Site Number _____

Other Site Number _____

Landowner (at time of this reporting, specify agency/district, if private give name and address): ___ check here if site information is confidential

RESOURCE SEGMENT: ___ contributes, ___ does not contribute, ___ is unevaluated

PORTION DESCRIBED: ___ point observation, ___ segment, ___ entire resource

LOCATION (if different from those shown on core property record - repeat as needed on continuation sheets; ____ check here if additional locational information is on continuation)

Street address _____ Town _____

Lot-Block: _____ Parcel _____ County _____

USGS 7.5' Map Name, Date _____

Township _____._ Range _____._ Section ____ _____ Template: _____

UTM: Zone ____ E Datum used to calculate: __NAD 27 __NAD 83

Beginning UTM: _____ Ending UTM: _____ (give chain of UTM's as appropriate)

UTM source: ___corrected GPS/rectified survey (<5m error), ___uncorrected GPS, ___map template, ___other (describe)

GPS Model/Software: _____

Notes pertaining to access:

INVESTIGATIVE HISTORY

Recorded by: _____ Organization: _____

Field Dates: _____

DIMENSIONS OF LINEAR FEATURE (meters):

Average top width:
Average bottom width:
Height or depth:
Length of Segment:

NARRATIVE DESCRIPTION: (describe construction details, materials, and associated artifacts. Provide photos/images as appropriate.)

DESCRIBE ASSOCIATED STRUCTURES/FEATURES:

Attach topographic map and photo/image for this segment, if not attached to core form or if this is not the first recording of the resource.
Other documentation resources (GLO maps, Engineering plans, etc. attach as appropriate):

* Continue narrative as needed on separate page or by expanding section on word processor. data entry, this page ___

Date _____ **Smithsonian #** _____

8H. LITHIC LANDSCAPE SAMPLE DESCRIPTION (This form must be accompanied by core form for first recording of a resource; illustrate area recorded on attached location and sketch map; if core form has been previously completed this form is all that is required.)

Consultant Project Number _____ Agency Project Number(s) _____

Associated Project Name_____

Landscape Name _____ Temporary Field Number _____

Agency Site Number _____

Other Site Number _____

Landowner (at time of this reporting, specify agency/district, if private give name and address): ___ check here if site information is confidential

LOCATION (if different from those shown on core property record - repeat as needed on continuation sheets; ____ check here if additional locational information is on continuation)
USGS 7.5' Map Name, Date _____

Legal location:
Start of sample transect Township _____._ Range _____._ Section ____ ¼'s_____ Template: _____

End of sample transect Township _____._ Range _____._ Section ____ ¼'s_____ Template: _____

UTM Grid zone:
Start of transect UTM: _____ Ending UTM: _____ (give chain of UTM's as appropriate)

End of transect UTM: _____ Ending UTM: _____ (give chain of UTM's as appropriate)
UTM: Zone ____ E Datum used to calculate: __NAD 27 __NAD 83
UTM source: ___corrected GPS/rectified survey (<5m error), ___uncorrected GPS, ___map template, ___other (describe)

GPS Model/Software: _____

Elevations in transect(ft): high low

INVESTIGATIVE HISTORY

Recorded by: _____ Organization: _____

Field Dates: _____

LANDSCAPE DESCRIPTION

Sample technique

Transect size: m x m=sq m

Average ground visibility and vegetation on landscape surface:

Topographic description:

LITHIC REDUCTION STAGE (expand/reduce table as needed)						
Material Type	Primary	Secondary	Tertiary	Shatter	Core	Tested Cobble
Totals						

Calculate Density of Material Per M2:

* Continue narrative as needed on separate page or by expanding section on word processor. data entry, this page ___

Date _____ **Smithsonian #** _____

8I. HISTORIC STRUCTURE/OBJECT DESCRIPTION (must be accompanied by a core form)

Common name: _____

Historic name: _____

Type of structure/object: _____ Associated resources _____

Historic District Smithsonian Number (if applicable) _____

OWNERSHIP – Property owner and address:

NATIONAL REGISTER OF HISTORIC PLACES SIGNIFICANCE (discuss as appropriate in narrative and in core form; the following applies to the individual structure/object)
Period of significance: _____ Theme _____
*Periods – Protohistoric (1720-1800) Early Historic (1801-1842) Pre-territorial (1843-1867) Territorial (1868-1889); Expansion (1890-1919); Depression (1920-1939) ; WWII-era (1940 to 1946); Post-WWII (1947 to 1955); Modern (1956-present); use exact dates if known.

NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY RECOMMENDATION (discuss as appropriate in narrative and in core form):

If eligible, this structure/object is: ___ contributing or ___ non-contributing

Justification: (Include in justification a statement of significance for building; integrity (location, design, setting, materials, workmanship, feeling, association); discuss how significant periods and themes were determined):

CONSTRUCTION HISTORY (use "unknown" as appropriate)

Dates of construction/major modification (use more lines as appropriate)

Date	Circa y/n	Date source
_____	____	_____
_____	____	_____

Architect(s):_____

Builder(s):_____

Structure/Object moved? (yes/no/unknown) ____, Date(s) moved: _____, Moved from: _____

Current use(s) _____ , Historic use(s) _____

DESCRIPTION:

Construction Materials:

Style/Type _____

STRUCTURE/OBJECT KEYWORDS:

ADDITIONAL NARRATIVE (e.g., relationship of structure/object to complex and/or district; other notes):

* Continue narrative as needed on separate page or by expanding section on word processor. data entry, this page ___

Date _____ **Smithsonian #** _____

8J. TRADITIONAL CULTURAL PROPERTY DESCRIPTION (For agency use only; must be accompanied by the core property form; this is an optional attachment)

TIME PERIOD ___ Prehistoric, ___ Historic, ___ Contemporary

TYPE OF PROPERTY (check all that apply)

___ Altar
___ Cairn
___ Ceremonial site
___ Eagle trap
___ Fasting
___ Grave
___ Landmark
___ Medicine wheel
___ Mineral gathering area
___ Rock art
___ Oral history/tradition
___ Plant gathering area
___ Prayer offering
___ Sweat lodge
___ Stone circles
___ Trail
___ Other (describe)

CONSULTATION

Name of interviewer: _____

Company/Agency: _____

Date of interview: _____

Name of interviewee(s): _____

Contact information is optional:

Address: _____ City _____ State _____

Phone: _____ email _____

Ethnic/Tribal affiliation of interviewee(s):

NARRATIVE DESCRIPTION AND COMMENTS:

PROPERTY TREATMENT RECOMMENDATIONS (According to the interviewee(s), what should be done to protect this property):

WYOMING ISOLATED RESOURCE FORM (WYIRF)

Consultant Project No.	Agency No.
Review/Compliance No.	WYCRO No.

1) Resource Type: _____ 2) Field No.: _____

3) Project Name: _____

4) Name of Recorder: _____ Date: _____

Company/Institution: _____

5) Landowner: (specify agency, if private give name and address):

6) Collections? [ ] Yes [ ] No Repository: _____

7) Catalog No(s): _____

8) LOCATION:
County _____ USGS Map Code (7.5') _____

USGS 7.5' Map Name, Date _____

Township _____.___ Range _____.___ Section _____ 1/4 _____

Elevation (ft) _____

UTM: Zone _____ E _____m N _____m
Datum used to calculate: _____NAD27 _____NAD 83

UTM source: ____ corrected GPS/rectified survey (<5m error)
____ uncorrected GPS ____ map template
____ other: _____

9) Environmental Description (Discuss topography, vegetation, soils, slope, hydrology, on-site depositional environment):

10) Resource Description (Describe and discuss artifact type(s), observed raw material(s), dimensions, function, time period):

11) Optional attachments may include drawings or photographs with scale of representative diagnostic artifacts, sketch map, and/or a setting photograph.
12) Required attachments are 7.5' USGS map showing resource location, and photographs or illustrations of collected artifacts.

ATTACHMENT 3
DAILY CULTURAL RESOURCE MONITORING LOG

Monitor: _____	Start Time: _____ Stop Time: _____
Transmission Line Segment/MP#_____	Attachments:_____
Weather Conditions.: _____	Photographs: Yes No (if yes, see page 2)

Construction Areas and Activities Monitored

Area#: _____ Time :_____ Construction Crew: _____Construction Supervisor: _____

Activity : _____

Monitor Checklist

General	Yes	No	N/A	Comments Attach Supplemental Report if needed
Native American Monitor present?				Name:
Biological Monitor present?				Name:
Workspace limits verified and properly marked?				
All activities within approved workspace limits?				
Only approved access roads utilized for ingress and egress?				
Environmental signs in place? (e.g. access roads, sensitive area)				
Trash and debris contained and disposed of in proper manner?				

Work Site Conditions

Visibility (circle one)	Excellent	Good	Fair	Poor	Explain, if necessary:

Soils:	Desert Pavement	Aeolian Sand	Dunes	Other, explain:	

ATTACHMENT S-3
DENIED ACCESS LOCATIONS REQUIRING CULTURAL SURVEYS

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Segment 1				
Converse	Access Road - Improve Existing	31770440000900	01W(a) - 126	6
		31770910001700	01W(c) - 126	3
		31770940001800	01W(c) - 129	12
		33740530000700	01W(a) - 6	10
		33750110000100	01W(a) - 11	9
			01W(a) - 12	0
			01W(a) - 13	1
		33751120005600	01W(a) - 18	3
		33751140004300	01W(a) - 18	0
		33751720001900	01W(a) - 45	9
			01W(a) - 46	0
			01W(a) - 49	9
	Access Road - Improve Existing Total			***62***
	Access Road - New Road	31770940001800	01W(a) - 130	2
			01W(c) - 129	0
	Access Road - New Road Total			***2***
	Mid & Pulling/Tensioning Site	33750110000100	01W(a) - 10	1
			01W(a) - 11	1
		33751120005600	01W(a) - 18	1
	Mid & Pulling/Tensioning Site Total			***3***
	Multi-purpose Area	34751430000800	01W(a) - 2	39
	Multipurpose Area Total			***39***
	Transmission ROW Centerline	33740530000700	01W(a) - 8	2
		33750110000100	01W(a) - 9	12
		33751120005600	01W(a) - 17	10
			01W(a) - 18	4
		Transmission ROW Centerline Total		***27***
Converse Total				***133***
Natrona	Access Road - Improve Existing	29781230000400	01W(c) - 213	7
	Access Road - Improve Existing Total			***7***
	Access Road - New Road	29783210000400	01W(a) - 228	0
	Access Road - New Road Total			***0***
Natrona Total				***7***
Segment 1 Total				**140**

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Segment 2				
Carbon	Access Road - Improve Existing	21830110000300	02 - 102	6
			02 - 99	35
		21830710000600	02 - 109	0
		21842520000600	02 - 117	8
		21873130008800	02 - 216	4
		22833330000500	02 - 96	0
			02 - 97	0
	Access Road - Improve Existing Total			***53***
	Access Road - Improve Existing - Secondary	21842520000600	02 - 118	0
	Access Road - Improve Existing - Secondary Total			***0***
	Access Road - New Road	21830110000300	02 - 101	11
		21830710000600	02 - 111	13
			02 - 113	1
		21842520000600	02 - 116	0
		21873130008800	02 - 214	1
			02 - 216	0
		22833330000500	02 - 96	0
	Access Road - New Road Total			***26***
	Regeneration Site	21861610050000	02 - 167	2
	Regeneration Site Total			***2***
	Transmission ROW Centerline	21830710000600	02 - 112	60
		21842520000600	02 - 117	34
		21873130008800	02 - 215	8
		22833330000500	02 - 96	35
	Transmission ROW Centerline Total			***137***
Carbon Total				***218***
Segment 2 Total				**218**
Segment 3				
Sweetwater	Access Road - New Road	19951310003700	03 - 19B	0
			03 - 19C	1
	Access Road - New Road Total			***1***
	Transmission ROW Centerline	19941710001100	03 - 16	60
		19950110001100	03 - 27	59
		19951310003700	03 - 21	61
	Transmission ROW Centerline Total			***180***

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
			Sweetwater Total	***181***
			Segment 3 Total	**181**
Segment 4				
WYOMING				
Lincoln	Access Road - Improve Existing	2317-252-00-019	04b - 131	3
		2317-261-00-019	04b - 131	0
		2318-031-00-003	04b - 166	7
			04b - 166-1	1
		2419-081-00-031	04b - 200	0
			04b - 202	0
		2419-082-00-026	04b - 202	5
		2419-082-00-027	04b - 202	1
			04b - 203	3
		2419-084-00-148	04b - 202	1
		2519-184-00-003	04b - 216	12
			04b - 217	14
			04b - 221	3
		2519-202-00-003	04b - 219	8
		2519-203-00-003	04b - 219	14
		2519-281-00-003	04b - 214	5
		2519-301-00-031	04b - 219	0
	Access Road - Improve Existing Total			***77***
	Access Road - Improve Existing - Secondary	**2420-011-00-003**	04b - 210	14
		2420-011-00-600	04b - 211	4
		2420-041-00-004	04b - 214	6
			04b - 215	0
		2519-301-00-031	04b - 219	1
			04b - 220	2
	Access Road - Improve Existing - Secondary Total			***28***
	Access Road - New Road	2317-221-00-001	04b - 136	10
		2317-232-00-001	04b - 135	0
		2419-063-00-046	04b - 207	4
		2419-081-00-031	04b - 200	1
		2419-084-00-148	04b - 200	5
			04b - 201	2
		2420-011-00-003	04b - 209	1
			04b - 210	6

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Lincoln (cont.)	Access Road – New Road (cont.)	2420-011-00-600	04b - 212	5
		2519-301-00-031	04b - 219	0
			04b - 221	3
		2519-310-00-031	04b - 216	2
	Access Road - New Road Total			***39***
	Fly Yard	2420-011-00-003	04b - 210	12
		2420-011-00-600	04b - 210	11
	Fly Yard Total			***23***
	Mid & Pulling/Tensioning Site	2317-221-00-001	04b - 139	7
	Mid & Pulling/Tensioning Site Total			***7***
	Multi-purpose Area	2419-074-00-148	04b - 203	7
		2419-083-00-148	04b - 201	1
		2419-172-00-148	04b - 202	25
		2419-181-00-048	04b - 202	26
	Multipurpose Area Total			***59***
	Transmission ROW Centerline	14S46E349000	04c - 6	0
		2317-221-00-001	04b - 136	22
		2317-232-00-001	04b - 134	3
			04b - 136	3
		2318-031-00-003	04b - 166-1	30
		2318-041-00-003	04b - 168	4
		2419-062-00-008	04b - 207	1
			04b - 208	9
		2419-063-00-046	04b - 207	28
		2419-064-00-026	04b - 206	3
		2419-071-00-148	04b - 204	6
		2419-074-00-148	04b - 203	0
		2419-082-00-027	04b - 203	6
		2419-082-00-028	04b - 203	13
		2419-083-00-148	04b - 202	12
		2419-084-00-148	04b - 200	15
			04b - 201	17
		2420-011-00-003	04b - 208	1
			04b - 209	8
			04b - 210	31
		2420-011-00-600	04b - 210	1
		2519-301-00-031	04c - 1	4

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Lincoln (cont.)	Transmission ROW Centerline	2519-304-00-003	04b - 217	1
		2519-310-00-031	04b - 216	0
			04b - 217	0
	Transmission ROW Centerline Total			***218***
Lincoln Total				**450**
Segment 4 in Wyoming Total				**450**
SEGMENT D IN WYOMING TOTAL				**990**
IDAHO				
Bannock	Access Road - Improve Existing	R4467002000	210	4
		R4469005300	211	17
	Access Road - Improve Existing Total			***21***
	Access Road - New Road	R4467002000	211	1
	Access Road - New Road Total			***1***
	Transmission ROW Centerline	R4467001700	205	12
		R4467002200	205	18
	Transmission ROW Centerline Total			***30***
Bannock Total				**52**
Bear Lake	Access Road - Improve Existing	13S44E070000		1
		13S44E223600	74	0
		13S44E227800	73, 74	0
		13S45E201200	59	17
		13S45E208400	59	4
		13S45E210600	54, 56	23
		13S45E216000	54	13
		13S45E276000	51	10
		13S45E289000	50	2
		13S45E290000	59	0
		13S45E292400	59	4
		13S45E320000	58	1
		13S45E320600	59	9
		13S45E321200	50	8
		13S45E330000	50	13
		13S45E343000	47	15
	Access Road - Improve Existing Total			***120***
	Access Road - Improve Existing - Secondary	13S45E283000	56	7
		13S45E290000	57	25
		13S45E320600	59	3

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Bear Lake (cont.)	***Access Road - Improve Existing - Secondary Total***			***35***
	Access Road - New Road	13S44E210900	78	0
		13S44E222400	77	1
		13S44E223600	76	2
		13S44E227800	73, 74	4
		13S44E236000	72	0
		13S44E239000	70	2
		13S44E260000	70	0
		13S45E190000	62	0
		13S45E208400	58	0
		13S45E210600	54, 57	5
	Access Road - New Road Total			***18***
	Access Road - New Road - Temporary	13S45E210600	54	2
		13S45E216000	54	0
	Access Road - New Road - Temporary Total			***2***
	Distribution Line	13S44E070000	88	2
	Distribution Line Total			***2***
	Fly Yard	13S45E190000	61	4
		13S45E201200	61	0
		13S45E300000	61	2
	Fly Yard Total			***6***
	Mid & Pulling/Tensioning Site	13S45E210600	54	6
		13S45E216000	54	1
	Mid & Pulling/Tensioning Site Total			***7***
	Transmission ROW Centerline	13S44E070000	88	12
		13S44E222100	75	13
		13S44E223600	76	18
		13S44E227800	74	9
		13S44E236000	72	11
		13S44E238400	70	6
		13S44E239000	70	15
		13S44E240000	66	5
		13S44E243000	67	0
		13S44E246000	68	16
		13S45E190000	62	31
		13S45E194200	64	30
		13S45E201200	60	30

ATTACHMENT S-3
Gateway West Transmission Line - Segment D
Denied Access Cultural Surveys to be Completed

County	Denied Right of Entry Survey Type	Parcel ID	Nearest Structure Number	Survey Acres in Parcel
Bear Lake (cont.)	Transmission ROW Centerline	13S45E208400	58	31
		13S45E216000	56	69
		13S45E276000	50	3
	Transmission ROW Centerline Total			***298***
Bear Lake Total				**488**
Caribou	Access Road - Improve Existing	11S41E310000	162	0
Franklin	Access Road - Improve Existing	115.01	186	7
		218	161	3
		219	163	22
	Access Road - Improve Existing Total			***33***
	Access Road - New Road Total	218	161	4
	Transmission ROW Centerline	215	160	0
		218	161	16
		219	163	37
	Transmission ROW Centerline Total			***53***
Franklin Total				**90**
Segment 4 in Idaho Total				**629**
TOTAL, SEGMENT 4				**1,079**
TOTAL, SEGMENT D				**1,619**

APPENDIX T
PRECONSTRUCTION CHECKLIST

Gateway West Transmission Line Project

PRECONSTRUCTION CHECKLIST

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
1 Check here	Prepare Environmental Assurance Plan.	No less than 45 days after contract is awarded / finalized	Construction Contractor	RFP/Contract Exhibit A, Section 22 A
2 Check here	Conduct cultural resource clearance surveys on denied access properties as they become available and revise Historic Property Treatment Plan (HPTP) Segment Plans as appropriate.	As soon as property is available	Construction Contractor	Appendix S, Sections 4 and 5 and Attachment S-3
3 Check here	Develop specific reclamation monitoring requirements, including the data collection and analysis protocols and forms in cooperation with the land-managing agency (e.g., BLM).	Within one year prior to construction	Construction Contractor / BLM / BOR / USFS	Appendix D, Section 7
4 Check here	Coordinate with BLM, USFS, BOR, states of Idaho and Wyoming, Wyoming Weed and Pest Districts, Idaho County Weed Superintendents, and Idaho Cooperative Weed Management Areas (CWMAs) regarding weed species to target during preconstruction surveys and format for reporting noxious weed and invasive species locations identified during noxious weed preconstruction surveys.	Within one year prior to construction	Construction Contractor / BLM / USFS / BOR / states of ID and WY / local agencies	Appendix E, Section 4.2
5 Check here	Consult with BLM and USFWS to identify survey protocols for plant and wildlife species and/or species groups for which a survey protocol has not already been identified.	Within one year prior to construction	Construction Contractor / BLM / USFWS	Appendix H, Section 5
6 Check here	Verify vegetation alliances and collect preconstruction data at proposed reclamation treatment and control monitoring sites during the growing season.	Within one year prior to construction and after data collection protocols have been established	Construction Contractor	Appendix D, Section 7.2
7 Check here	Conduct noxious weed preconstruction surveys, including documentation of existing adjacent infestations, during the appropriate seasonal timeframe.	Within one year prior to construction and after reporting format has been agreed upon	Construction Contractor	Appendix E, Section 4.2
8 Check here	Conduct special status plant surveys during blooming periods for target species.	Within one year prior to construction and after survey protocols have been identified	Construction Contractor	Appendix H, Section 5

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
9 Check here	Conduct seasonally appropriate surveys for special status wildlife species and raptors.	Within one year prior to construction and after survey protocols have been identified	Construction Contractor	Appendix H, Section 5
10 Check here	Work with landowners to identify the location of underground water lines prior to finalizing tower locations to avoid siting the towers above or adjacent to buried lines.	Within 9 months prior to construction	Construction Contractor	Appendix K, Section 4.6
11 Check here	Finalize Project road network, assign road disturbance types, and document preconstruction road conditions.	Within 9 months prior to construction	Construction Contractor / land management agencies	Appendix L, Sections 5 and 8
12 Check here	Develop site-specific wetland and stream crossing plans in consultation with the appropriate land management agency.	Within 9 months prior to construction	Construction Contractor / land management agencies	Appendix I, Section 4.1
13 Check here	Identify and map blasting areas (including implosive sleeve locations), and sensitive resources within 0.25 miles of proposed blasting locations.	Within 6 months prior to construction	Construction Contractor	Appendix M, Sections 1 and 2
14 Check here	Prepare detailed erosion control plans, including permanent erosion and sediment control structures and identification of areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.	Within 6 months prior to construction and after road network has been finalized	Construction Contractor	Appendix F, Sections 3 and 5
15 Check here	Conduct preconstruction paleontological surveys in areas with potential fossil yields of Class 3, 4, or 5, to establish construction monitoring locations in accordance with criteria stated in the Framework Paleontological Resources Protection Plan and as required by the land management agency.	Within 6 months prior to construction	Construction Contractor	Appendix J, Section 5
16 Check here	Identify and map fences, gates, cattle guards, and corrals to identify the potential need for repair and/or grounding.	Within 6 months prior to construction	Construction Contractor	Appendix K, Sections 4.5 and 4.13
17 Check here	Identify and map wells within 600 feet of the Project centerline and wells and springs in known blasting zones.	Within 6 months prior to construction	Construction Contractor	Appendix I, Section 3.3

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
18 Check here	Develop and map site-specific transportation management plans for all public ROW crossings.	Within 6 months prior to construction	Construction Contractor	Appendix L, Sections 2 and 9
19 Check here	Consult with land management agencies and CIC to identify reclamation monitoring site locations.	Within 6 months prior to construction and after preconstruction data has been collected	Construction Contractor / CIC / land management agencies	Appendix D, Sections 5.2.2 and 6.2.2
20 Check here	Consult with land management agencies and landowners to determine site-specific reclamation treatments and final seed mixes for areas to be reclaimed based on field-verified vegetation alliances and preconstruction monitoring data.	Within 6 months prior to construction and after monitoring sites have been selected	Construction Contractor / land management agencies	Appendix D, Section 5
21 Check here	Develop a Final Reclamation Plan using Appendix D – Framework Reclamation Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix D, Section 1.2
22 Check here	Develop a Final Noxious Weed Plan using Appendix E – Framework Noxious Weed Plan as the baseline document for its development. All herbicides proposed for use on the Project will be reviewed and approved by the BLM and USFS prior to beginning construction. Obtain any required permits from respective agencies/jurisdictions.	120 days prior to construction	Construction Contractor	Appendix E, Section 1.1
23 Check here	Develop a Final Stormwater Pollution Prevention Plan (SWPPP) using Appendix F – Framework SWPPP as the baseline document for its development. Note: The preparation of the SWPPP should be completed prior to the submittal of the Notice of Intent (NOI) for USEPA Region 10 for Idaho, and the Wyoming Department of Environmental Quality (WDEQ) for a *Large Construction General Permit* for Wyoming.	120 days prior to construction	Construction Contractor	Appendix F, Section 2
24 Check here	Develop a Final Spill Prevention, Containment, and Countermeasures (SPCC) Plan using Appendix G – Framework SPCC Plan as the baseline document for its development. Designate locations for storage, refueling, and lubrication of equipment and materials, minimizing the environmental and safety impacts associated with releases of fuel, lubricants, or hazardous substances.	120 days prior to construction	Construction Contractor	Appendix G, Sections 1 and 4

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
25 Check here	Develop a Final Stream, Wetland, Well, and Spring Protection Plan using Appendix I – Framework Stream, Wetland, Well, and Spring Protection Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix I, Section 1
26 Check here	Develop a Final Traffic and Transportation Management Plan using Appendix L – Framework Traffic and Transportation Management Plan as the baseline document for its development. Note: This plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads prior to the issuance of a Notice to Proceed with construction.	120 days prior to construction	Construction Contractor	Appendix L, Section 1
27 Check here	Develop a Final Blasting Plan using Appendix M – Framework Blasting Plan as the baseline document for its development. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.	120 days prior to construction	Construction Contractor	Appendix M, Section 1
28 Check here	Develop and implement a Final Erosion, Dust Control and Air Quality Plan using Appendix N – Framework Erosion, Dust Control and Air Quality Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix N, Section 1
29 Check here	Develop a Final Fire Prevention and Suppression Plan using Appendix O – Framework Fire Prevention and Suppression Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix O, Section 1
30 Check here	Develop a Final Hazardous Materials Management Plan using Appendix P – Framework Hazardous Materials Management Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix P, Section 1
31 Check here	Develop a Final Construction Emergency Preparedness and Response Plan using Appendix Q – Framework Construction Emergency Preparedness and Response Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix Q, Section 1
32 Check here	Develop a Final Flagging, Fencing, and Signage Plan using Appendix U – Framework Flagging, Fencing, and Signage Plan as the baseline document for its development.	120 days prior to construction	Construction Contractor	Appendix U, Section 1

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
33 Check here	Prepare and maintain list of all emergency contacts and numbers, and a Project Contact Directory.	90 days prior to construction	Construction Contractor	Appendix Q, Section 6.1
34 Check here	Prepare and maintain list of all entities for notification in the event of a fire.	90 days prior to construction	Construction Contractor	Appendix O, Section 4
35 Check here	Submit Notice of Intent (NOI) for USEPA Region 10 for Idaho and the Wyoming Department of Environmental Quality (WDEQ) for a *Large Construction General Permit* for Wyoming	90 days prior to construction and after completion of the SWPPP	Construction Contractor	Appendix F, Section 3
36 Check here	File encroachment and oversized vehicle permit applications with appropriate road and transportation agencies. Encroachment permits will be needed for those areas where the transmission line crosses public roads.	90 days prior to construction	Construction Contractor	Appendix L, Sections 2 and 3
37 Check here	Obtain blasting-related permits and approvals.	90 days prior to construction	Construction Contractor	Appendix M, Section 3
38 Check here	Any new disturbance not previously identified and analyzed under the NEPA process will require resource surveys, as well as review and approval by the BLM and USFS (if applicable) prior to ground disturbance.	Minimum of 60 days prior to disturbance at new location	Construction Contractor	Appendix C, Sections 2 and 4
39 Check here	Based on preconstruction surveys, consult with agencies and review Project documentation. Prepare and provide the Companies, Construction Crews and CIC maps showing environmentally sensitive areas (biological, cultural, etc.) for avoidance. Update maps for biologically sensitive areas as most recent survey data become available.	60 days prior to construction and thereafter updated as more survey information becomes available	Construction Contractor	POD, Volume II

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
40 Check here	Prepare the right-of-way (ROW), which includes, at a minimum, the following: • Implementation of best management practices (BMPs) identified in the SWPPP • Demarcation of environmentally sensitive areas and noxious weed wash stations • Posting of access road signage • Implementation of preconstruction Noxious Weed Plan activities/treatment	60 days prior to construction	Construction Contractor	Appendix D Appendix E Appendix F Appendix H Appendix I Appendix J Appendix S Appendix U
41 Check here	Submit a list of Hazardous Materials cleanup contractors to Companies / BLM for approval.	60 days prior to construction	Construction Contractor	Appendix G, Sections 4.3 and 5, Appendix P, Section 6
42 Check here	Any necessary dust control permits for construction activities will be obtained.	60 days prior to construction	Construction Contractor	Appendix N, Section 3
43 Check here	Notify holders of grazing allotments on BLM managed lands and grazing leases on state owned lands. Note: The BLM is responsible for this action, but the CIC will verify it has been completed and coordinate with states.	30 days prior to construction on BLM and state lands	CIC / BLM	Not applicable
44 Check here	Obtain Notice to Proceed from the BLM, BOR, and USFS, as applicable (Project may require multiple Notices to Proceed for different segments).	30 days prior to construction on BLM, BOR and USFS lands	Companies / BLM, BOR and USFS	POD, Section 1
45 Check here	Notify private land owners and county and city officials of upcoming construction.	30 days prior to initiation of construction on, or adjacent to private parcels (within 1/4 of a mile)	Companies	POD, Section 3.1.5
46 Check here	All procured water will require written landowner approval, which will include how much water will be used as well as a map (and shapefile) showing the location of the procurement site. This written approval must be provided to the CIC prior to procuring the water. Note: Water from the Colorado and North Platte River basins must be permitted water and follows special rules.	30 days prior to construction	Construction Contractor	Appendix N, Section 5

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
47 Check here	Schedule and conduct a preconstruction meeting with the BLM, BOR and USFS Project Managers. The Companies will schedule the meeting and the Construction Contractor involved with the Project will attend this meeting to review construction stipulations, including the POD.	A minimum of 14 days prior to commencing construction and surface disturbing activities on the Project	Companies / Construction Contractor	POD, Section 3.1.4
48 Check here	The Construction Contractor will train all personnel on the measures to take in the event of a fire. The Construction Contractor will also inform each construction crew member of fire dangers, locations of extinguishers and equipment, and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules also will be discussed with the Construction Contractor and all field personnel during the Project's environmental training.	A minimum of 14 days prior to commencing construction and surface disturbing activities on the Project	Construction Contractor	Appendix O, Section 2
49 Check here	Conduct environmental and safety training, in cooperation with the BLM/CIC. Instruct all personnel on the importance and protection of cultural, ecological, and other natural resources. Topics, at a minimum, will include: • Migratory birds and nests • Rare and sensitive wildlife • Cultural and paleontological resources • Rare and sensitive plants • Noxious weeds • SWPPP and erosion control • Fire Protection • Federal and state laws applicable to the Project Maintain a master list of all Project personnel that have completed the environmental and safety training. Provide personnel that have completed the training with hard hat stickers.	A minimum of 14 days prior to initiation of construction; and for new staff, prior to gaining access to the Project	Construction Contractor / CIC / BLM	Appendix C, Section 6
50 Check here	Install standard survey flags and stakes at construction work sites as specified in the POD (e.g., ROW boundaries, access road boundaries, tower locations, pulling/tensioning locations, anchor points, reference points, minimum road widths, etc.).	A minimum of 7 days prior to construction	Construction Contractor	Appendix U, Section 3
51 Check here	Identify and flag plants to preserve in place, weed infested areas, and storage areas for windrowed plant and soil materials. Note: The Construction Contractor and the CIC will coordinate to complete this action.	A minimum of 7 days prior to construction	Construction Contractor / CIC	Appendix U, Section 3

Activity Number	Activity	Recommended Timing	Responsible Party	POD Reference
52 Check here	Conduct preconstruction pedestrian or aerial nest surveys in suitable habitat during the appropriate nesting time needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests.	During the appropriate season prior to construction, and at least 7 days to 72 hours immediately prior to construction	Construction Contractor	Appendix H, Section 4.4.3
53 Check here	Where vegetation clearing cannot be conducted prior to the onset of the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements), conduct preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing.	A minimum of 7 days to 72 hours immediately prior to construction	Construction Contractor	Appendix H, Section 4.6.3
54 Check here	Conduct preconstruction surveys along the route across the Caribou-Targhee NF for caves, abandoned mines, and adits.	A minimum of 7 days to 72 hours immediately prior to construction	Construction Contractor	Appendix H, Section 4.7.3
55 Check here	Perform selective clearing/feathering, as appropriate.	Prior to construction	Construction Contractor	Appendix D, Section 5.1.3

APPENDIX U
FRAMEWORK FLAGGING, FENCING, AND SIGNAGE PLAN

Appendix U

Transmission Line Framework Flagging, Fencing, and Signage Plan

Gateway West Transmission Line Project

Prepared by:

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies), are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD) applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This Framework Flagging, Fencing, and Signage Plan (Plan) was prepared for Segment D because it will be constructed first; a revised Plan will be prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This Plan provides a framework for marking Project components and for the protection of environmentally sensitive areas during construction and reclamation activities. The Construction Contractor will be responsible for developing the final flagging scheme.

1.1 Purpose

The purpose of this Plan is to describe the methods that will be used in the field to delineate the Project limits of disturbance and protect sensitive environmental and cultural resources during Project construction. These methods are intended to ensure the Companies, Construction Contractor, BLM, USFS, Compliance Inspection

Contractor (CIC), and other monitors and visitors to the Project construction sites stay on approved access routes and within approved work areas. The measures described in this Plan are an integral part of the environmental compliance program for avoiding and minimizing impacts to sensitive resources. The objective of this plan is to provide information on the field markings (i.e., flagging, fencing, and signage) that will be used to identify approved Project travel and work areas, as well as environmentally sensitive areas where construction or travel is to be excluded.

2.0 REGULATORY FRAMEWORK

No federal, state, or local laws, rules, or regulations specifically address flagging, fencing, and signage protocols for construction Projects. However, some of the environmental protection measures (EPMs) identified in the Environmental Impact Statement for the Project rely on adequate field marking of work areas and/or of environmentally sensitive areas to avoid or reduce impacts. These EPMs include flagging or fencing requirements to help protect vegetative cover, water quality, cultural resources, and special-status species and minimize the spread of noxious weeds and invasive species.

3.0 METHODS

Table 3-1 provides standards for marking Project features prior to and during Project construction. Figures 3-1, 3-2, 3-3, 3-4, 3-5, and 3-6 (included at the end of this Appendix) show the size and configuration of typical sign layouts. Signs for environmentally sensitive areas will be oriented for visibility from both directions of likely travel.

Table 3-1. Flagging Scheme

Feature	Flagging or Sign Colors	Sign Text	What to do
Project access road	To be decided by Construction Contractor	Project Access Road – Road # (e.g., Road 1/3) – Gateway West Transmission Line Project	To be located at points of intersection, additional intermittent flagging may be required. Construction Contractor to verify that right of entry has been obtained before marking these areas.
Temporary work areas (pulling sites, multi-purpose areas, etc.)	To be decided by Construction Contractor	Not applicable	Construction Contractor to verify that right of entry has been obtained before marking these areas.
Protected animals/plants or environmentally sensitive areas	Yellow	Environmentally Sensitive Area Keep Out	Avoid these items/areas – do not drive vehicles or equipment near flagged items or within flagged areas.
Reclamation project areas	Brown	Reclamation in Progress – No Vehicle Traffic Allowed	Avoid these items/areas – do not drive vehicles or equipment near flagged items or within flagged areas.
Invasive weed cleaning stations	Blue	Weed Cleaning Station	Signs will be posted at entry points into weed cleaning stations.
Proposed structure locations	To be decided by Construction Contractor	Not applicable	Do not disturb survey stakes.
Structure offsets	To be decided by Construction Contractor	Not applicable	Do not disturb survey stakes.

Table 3-1. Flagging Scheme (continued)

Feature	Flagging or Sign Colors	Sign Text	What to do
Outside edge of permitted right-of-way (ROW) or centerline	To be decided by Construction Contractor	Not applicable	Do not drive vehicles or equipment outside of designated corridor.
Cadastral survey monument	To be decided by Construction Contractor	Not applicable	Protect in place.
Non-authorized access road	To be decided by Construction Contractor	Do Not Enter Not an-Authorized Access Road	Do not drive vehicles or equipment on unauthorized roads.

NOTES:

- Staking and flagging will be done by Construction Contractor and verified by CIC, including environmentally sensitive areas and exclusion zones.
- Construction Contractor shall stake all proposed tower center hub and footer locations, structure locations, and associated reference points and mark the centerline with intervisible stakes not to exceed 500 feet and at all road crossings.
- Construction Contractor shall use staking intervals appropriate to the conditions observed in the field. For example, areas of rough terrain or dense vegetation may require staking intervals less than 500 feet. In all cases, field staking intervals shall be done at a frequency such that each adjacent stake can be easily discernible.
- Maintain (refurbish as necessary) staking over time as conditions require.

3.1 Demarcating Project Facilities

Standard survey flags and stakes will be installed before the start of Project construction. Structure sites (e.g., tower locations, anchor points, and reference points) will be marked by the Construction Contractor. Designated Project access roads, spur roads, parking areas, and pullout areas will be marked to facilitate travel to and from the ROW. Wire stringing/pulling sites, multi-purpose areas, fly yards and material yards will be demarcated as necessary to indicate the limits of the approved work area. The Construction Contractor will stake the boundaries of the maximum area needed for work areas taking into account the area previously surveyed for cultural resources and will provide the dimensions to the CIC. If the delineated work areas exceed previously surveyed areas or include new areas, the Construction Contractor will coordinate with the CIC for approval, and consultation with the land management agency and/or landowner may be required.

3.2 Environmental Exclusions

Signs, flags, and/or fencing will be used to establish exclusion (avoidance) areas to protect environmentally sensitive resources (e.g., biological, cultural, wetland, and paleontological resources) in the vicinity of construction activities. A system of standardized and simplified exclusion markings will be used to reduce potential confusion during construction and minimize the risk of highlighting types of sensitive resources that could be targeted by vandals (e.g., if exclusion areas protecting archaeological sites were marked differently than those protecting sensitive natural resource areas, the sites would be at a higher risk of unauthorized artifact collecting or other disturbances). Exclusion areas will be set up to protect these areas, but the Construction Contractor will not know if it is for biological, cultural, or paleontological resources.

3.2.1 Signing

Signs will be used to help identify Project features such as approved access roads and certain Project facilities such as "Weed Cleaning Stations." Signs will be a minimum of 8.5 inches by 11 inches on laminated (7 millimeter or greater) color paper or metal. Signs will be installed on metal posts and wooden stakes or attached to exclusion fencing/roping, as appropriate. Background colors will vary to enhance sign recognition from a distance.

3.2.2 Flagging

Survey flagging (i.e., surveyor's ribbon tied to wooden stakes, metal posts, or vegetation) will be used to delineate the limits of work areas such as material yards, disturbance limits (i.e., boundaries of the ROW), wire stringing sites, access roads, etc., unless existing fencing or other features clearly indicate the limits of the area. Survey flagging may be used to demarcate environmentally sensitive areas situated a safe distance from planned construction activities but generally will not be used to define environmental exclusion areas close to planned construction activities due to concerns about the visibility and stability of flagging during construction.

The BLM and USFS authorized officers or CIC, as needed, will determine whether flagging or fencing (as described below) is the appropriate protective device for a given location. Flagging color will conform to the requirements of Table 3-1.

3.2.3 Fencing

To delineate the limits of construction near environmentally sensitive resources requiring a high level of protection from Project disturbance, a combination of one or more of the following fencing materials will be installed by the Construction Contractor:

- Rope (¼ inch in diameter in yellow or orange coloring),
- Plastic or fabric tape, and/or
- Safety fencing (plastic orange or red mesh at least 24 inches-wide and at least 18 inches off the ground to allow for small animal passage).

Roping with periodic marking by exclusionary signs or lengths of tape is a highly visible and effective exclusion device. Roping, tape, and safety fence will be installed using metal posts for increased durability and in areas with compact or rocky soils. If construction within a wetland is necessary, the boundaries of the approved disturbance area will be demarcated so impacts are limited to the authorized area. In most cases, it is anticipated that the exclusion device will be installed at the boundaries of the sensitive resource (including any required buffers), rather than at the edge of the work area. If a buffer zone encroaches into the work area, only the portions that overlap with the work area will be delineated and signed as exclusionary zones.

4.0 RESPONSIBILITY FOR INSTALLATION, MONITORING, AND MAINTENANCE

Meeting the objectives of this Plan relies on the proper installation, monitoring, and maintenance of protective devices. The Construction Contractor will be responsible for the installation and maintenance of field marking of construction features (e.g., towers,

wire pulling sites, substations, etc.). These markings will be installed in advance of construction activities in the area, maintained during the course of construction (as necessary), and removed after Project cleanup and reclamation activities. Environmental exclusion (e.g., signs, flags, and fencing) will be installed by the Construction Contractor in coordination with the CIC to denote exclusionary zones along with the assistance of appropriate monitors (e.g., botanists, biologists, archaeologists) as needed. These environmental exclusions will be installed prior to the start of construction within a Project work area. The CIC will be consulted if there is uncertainty as to the type or location of needed exclusionary devices for botanical, wildlife, wetland, stream, or archaeological sensitive resource areas.

Routine Project monitoring by the CIC and Construction Contractor's environmental inspectors will include an on-going assessment of the need for replacement or repair of exclusionary flagging or fencing. Maintenance needs related to exclusionary devices will either be corrected at the time of observation by the CIC, or will be documented as a future maintenance need. If maintenance of an exclusionary device is needed within an active construction area, corrective action will be taken within one workday. Maintenance of signs, flagging, and fencing within inactive work areas will be implemented as necessary. All exclusionary devices (e.g., signs, flagging, and fencing) will be removed after Project cleanup and reclamation activities by the Construction Contractor.

PROJECT

ACCESS ROAD

ROAD #

GATEWAY WEST TRANSMISSION LINE PROJECT

Figure 3-1 Typical Sign – PROJECT ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREA

KEEP OUT

GATEWAY WEST TRANSMISSION LINE PROJECT

Figure 3-2 Typical Sign – ENVIRONMENTALLY SENSITIVE AREA KEEP OUT

RECLAMATION IN PROGRESS – NO VEHICLE TRAFFIC ALLOWED

GATEWAY WEST TRANSMISSION LINE PROJECT

Figure 3-3 Typical Sign – RECLAMATION IN PROGRESS – NO VEHICLE TRAFFIC ALLOWED

NO REFUELING

WITHIN 100 FEET OF

WETLANDS

AND

STREAM BANKS

GATEWAY WEST TRANSMISSION LINE PROJECT

Figure 3-4 Typical Sign – NO REFUELING

Figure 3-5 Typical Sign – DO NOT ENTER

WEED CLEANING

STATION #

GATEWAY WEST TRANSMISSION LINE PROJECT

Figure 3-6 Typical Sign – WEED CLEANING STATION

APPENDIX V
PACIFICORP'S TRANSMISSION CONSTRUCTION STANDARDS

The most current version of PacifiCorp's Transmission Construction Standards will be inserted as Appendix V in future versions of the Gateway West Transmission Line Project Plan of Development.

APPENDIX W
PACIFICORP'S TRANSMISSION AND DISTRIBUTION VEGETATION MANAGEMENT PROGRAM SPECIFICATION MANUAL AND IDAHO POWER COMPANY'S TRANSMISSION CLEARING SPECIFICATIONS AND FRAMEWORK FOR MANAGING NOXIOUS WEEDS

PACIFICORP

A MIDAMERICAN ENERGY HOLDINGS COMPANY

Transmission & Distribution Vegetation Management Program

Specification Manual

Rev	Status	Date	Author	Change Tracking
00	Issued for implementation	12/15/2008	R. H. Miller	Manual created
01	Reviewed/Updated	06/15/2012	R. H. Miller	1. Clarified language throughout 2. Revised Chapter 4 to reflect a process checklist used for project management. 3. Modified Clearance 2 to strictly reflect table 5 in IEEE 516-2003 Table 5. 4. Section 6.4.1 that if contract forest techs identify an imminent threat, that they contact the appropriate line patrolmen so they initiate the imminent threat procedure.

Approval Curtis Mansfield 07/02/2012

Printed Name of Approver Date

Managing Director, T&D Support Services

Title of Approver

Transmission & Distribution Vegetation Management Program

Specification Manual

June 15, 2012

PacifiCorp, Director, Vegetation Management
1407 West North Temple, Room 230
Salt Lake City, Utah 84116
801.220.2271

Transmission & Distribution
Vegetation Management Program

Specification Manual

Mission Statement:

Manage trees and vegetation around PacifiCorp's transmission and distribution facilities in a professional, cost effective and environmentally conscientious manner to provide safe, reliable and outstanding service to our customers.

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1. PROGRAM OVERVIEW

1.1 Introduction

Trees growing into or near power lines are a constant concern for PacifiCorp because they can create safety and service reliability risks. Close growing branches can provide access for children and others to high-voltage lines, exposing them to the potential danger of serious injury or death due to electric contact. Branches touching power lines can spark and start fires and cause interruptions in electric supply. Trees whipped by winds or weighed down by rain or snow often interrupt power, disrupting business and home life, as well as compromising critical community infrastructure, such as hospitals and emergency services.

Three major electric grid failures, including the catastrophic blackout on August 14, 2003, were initiated by tree-caused outages on transmission lines (U.S.-Canada Power System Outage Task Force 2003).

For these reasons and others, the National Electrical Safety Code (ANSI 2011) Section 2l8-A-l, states:

Trees which may damage ungrounded supply conductors should be pruned or removed. Note: Normal tree growth, the combined movement of trees and conductors under adverse weather conditions, voltage and sagging of conductors at elevated temperatures are among the factors to be considered in determining the extent of pruning required.

PacifiCorp's distribution system averages over a 100 trees for every mile of line, any of which could potentially create problems. With that level of exposure, it is impossible to secure the system completely. Electric utilities, such as PacifiCorp, manage their systems to reduce electric supply and service reliability risks by clearing trees from power lines.

Often, particularly in the case of transmission lines, the best solution is to remove tall-growing trees and replace them with low-growing species that will never interfere with the high-voltage lines. However, it is not always possible to remove conflicting trees. Trees that cannot be removed must be pruned to clear the utility space using modern, arboriculturally-sound pruning practices.

PacifiCorp's specification manual covers the vegetation management program for both distribution and transmission. It includes program descriptions, specifications and protocols for customer relations. Its intent is to provide direction for foresters as well as contract GF/supervisors, forest techs and utility tree workers on PacifiCorp's system, and help inform PacifiCorp employees about vegetation management.

1.2 Professionalism

PacifiCorp employs a staff of professional foresters to manage its vegetation program and communicate effectively the community service it provides. Contractor front line managers, supervisors or general foreman (GFs) must be Society of Arboriculture (ISA) Certified Arborists and ISA Certified Utility Specialists. Forest techs must be Certified Arborists within 6 months of their appointment and be Certified Utility Specialists to receive the top pay grade.

In addition, the program is founded on the industry's best practices, including systematic maintenance, scientifically-based pruning, tree removal, tree replacement, cover type conversion, herbicide use and tree growth regulator applications; as well as specialized tools and equipment. Practices should follow those outlined in ANSI A 300 Part 1-pruning (ANSI 2008) and Part 7-Integreated Vegetation Management (ANSI 2006a) as well as International Society of Arboriculture Best Management Practices: Utility Pruning of Trees (Kempter 2004) and Integrated Vegetation Management (Miller 2007). PacifiCorp is progressive in trying innovative methods, products and equipment in order to improve safety and productivity.

1.3 Tree Line USA

PacifiCorp has been a Tree Line USA recipient utility every year since 2002. Tree Line USA is an award from the National Arbor Day Foundation, which recognizes utilities for utilizing practices that protect America's urban forests. To qualify, utilities must apply scientifically-based tree care, conduct annual worker training, plant trees, and conduct public education, including participating in Arbor Day celebrations. Contract employees should participate in annual worker training to cooperate with and help PacifiCorp continue to merit this award.

2. GENERAL SPECIFICATIONS

2.1 Safety

Federal and state OSHA requirements governing vegetation management activities shall be followed at all times. ANSI Z133.1 (ANSI 2006) and OSHA 1910.269, are examples of these requirements. Activities shall be conducted in a manner that minimizes both tree crew and public safety risks. Crews shall have functional radio or telephone communication on the job site at all times.

2.1.1 Holds and Clearances

Minimum approach clearances for qualified line clearance arborists specified in ANSI Z133 or PacifiCorp's *Accident Prevention Manual* (Joint Safety Committee 2003 [Table 2.1]), should not be compromised. If there is a difference in the distances required in the two standards, the greater of the two is operative. If work requires violating minimum approach distances, or if a crew leader determines conditions to be unsafe, crew leaders should contact their supervisor/GF before proceeding. The GF/supervisor should determine whether or not a clearance or hold is necessary at that work site.

A hold means deactivating automatic line reclosers on a circuit. It is intended to protect PacifiCorp facilities and should not be considered a safety measure. If, in the judgment of the crew leader, an energized line cannot be worked safely, the GF/supervisor should arrange a clearance. A clearance is de-energizing a line.

PacifiCorp does not issue holds or clearances to tree crews. Rather, the Company will issue holds or clearances to a journeyman lineman, who shall be present at the site during work. Holds require at least 48 hours notice to dispatch, vegetation management and the district operations manager. In some cases, a clearance on transmission lines must be requested weeks or even months in advance. Customers do not need to be notified if a clearance is necessary to safely work trees from lines in an emergency.

Customers who will be affected by planned power outages associated with clearances must also receive 48 hours notice, except during emergency situations such as storm restoration work. However, if a clearance is necessary to clear trees from lines in an emergency, customer notification is not necessary.

De-energized lines; whether due to a planned outage, wind or storm damage, or some other reason; must be worked as if they are energized. If a line cannot be worked safely assuming it is energized, it must be grounded. Linemen must set the grounds and be present during work, and give approval prior to tree crew members breaching minimum approach distances to ensure safety.

2.1.2 Emergencies

An emergency is major storm (as declared by PacifiCorp), or situation where vegetation has caused or presents a clear, imminent threat of causing an outage, fire or public electric contact.

2.1.2.1 Whistles

Every crew member, supervisor/GF and forester shall carry a whistle at all times while on work sites. A whistle shall be used as an alarm, indicating danger, commanding all crew members to immediately stop work and

Figure 2.1. Emergency procedure for a tree on line incident.

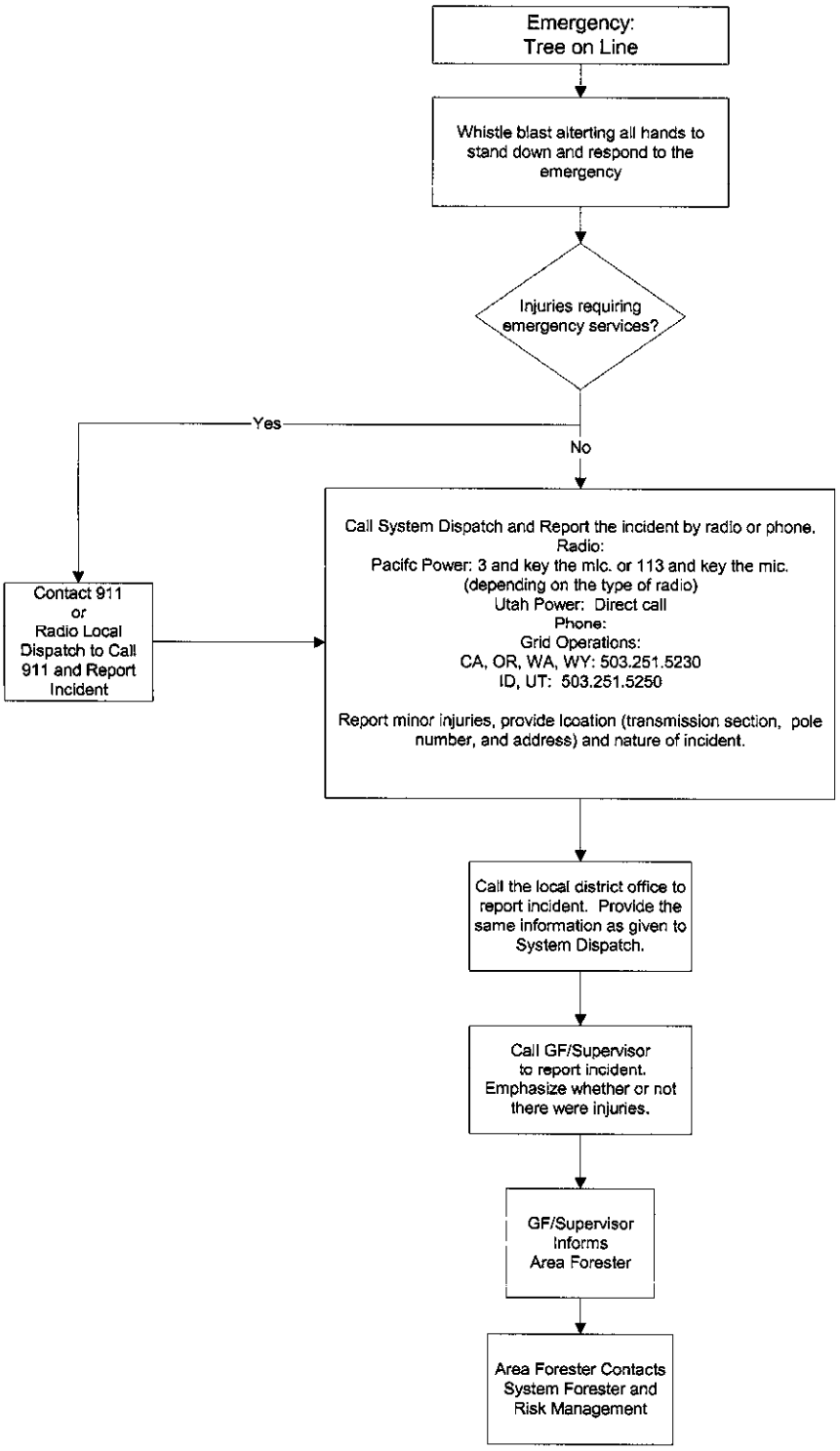

Table 2.1 Minimum approach distances for qualified line-clearance arborists and line-clearance arborist trainees.

Voltage Phase-to-Phase	Minimum Approach Dist.	Source
50-300 v	Avoid contact	APM/Z133
301-750 v	1 foot	APM/Z133
301 v-15 kV	2 feet, six inches	APM
15-46 kV	3 feet	APM/Z133
46-72 kV	4 feet, 2 inches	Z133
72-121 kV	4 feet, 6 inches	Z133
138-145 kV	5 feet, 2 inches	Z133
161-169 kV	6 feet	Z133
230-242 kV	7 feet 11 inches	Z133
345-362 kV	13 feet 2 inches	Z133
500-550 kV	19 feet	Z133

Note: APM is PacifiCorp's *Accident Prevention Manual* (Joint Safety Committee 2003). Z133 is the *American National Standard for Tree Care Operations* (ANSI 2006). Z133 distances are for sea level up to 5,000. Distances increase for elevations above 5,000 feet (ANSI 200).

respond to the emergency. Whistle blasts should also be used to initiate aerial rescue drills. Whistles are not to be used for non-emergency situations, such as getting another crew member's attention.

2.1.2.2 Tree on Line

If a tree or tree part accidentally falls onto an energized line, work should stop Immediately, and procedures outlined in Figure 2.1 followed.

2.1.3 Readily Climbable

Readily climbable trees have low limbs that are accessible from the ground and sufficiently close together and strong enough to support a child or average person so that the tree can be climbed by a child or average person without using a ladder or special equipment. Access into a tree by a vehicle does not render a tree climbable.

Readily climbable trees pose a hazard when a main stem would allow a child or average person to climb either within arm's reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact. They are located near homes, schools, parks, businesses or other locations where people (particularly children) frequent.

If readily climbable trees are identified, within two weeks steps shall be taken to reduce the safety risk by removing the tree, or else by pruning to specification clearances, and if possible, removing branches to at least 8 feet from the ground or altering line construction.

2.1.4 Tree Houses

Tree houses built in trees growing near high voltage lines present possible electric safety risks. Safety risks in these

cases could materialize if a tree house is sufficiently close to the conductors so that children or others may contact the line either directly or indirectly. Indirect contact may occur through any conductive object, including a tree as tree parts contacting power lines can conduct electricity.

Tree houses built in trees growing in proximity to power lines must meet two criteria in order to remain where they are located. First, no part of the structure may be any closer than twice the minimum approach distances for persons other than qualified line-clearance arborists as specified in Table 2 of ANSI Z133 (Table 2.1) and second, the tree must be pruned so that it grows no closer than ANSI Z133 Table 2 (Table 2.1) distances, at least until the next scheduled work. Maximum sag and sway should be taken into consideration. Tree houses that do not meet these conditions shall be removed within two weeks of their identification.

Tree house safety risks may be managed by changing facility construction so tree house clearances can be maintained. Facility reconfiguration for this purpose may be done at a property owner's request, provided they cover the expense of the facility modification.

2.1.5 Fire Protection

Federal, state and local fire protection laws and regulations shall be followed, and the contractor performing the work must obtain necessary work permits. Crews shall have all fire fighting tools and equipment required by the responsible state or federal agency. Contractors shall also adhere to fire restrictions concerning work hours, fire watch following work and other policies of the pertinent jurisdiction.

2.2 Environment

Environmental respect is a MidAmerican Energy Holding Company core value.

2.2.1 Species of Concern

Tree work should not disturb or harm any rare, threatened, endangered, or protected plant or animal species. Nesting season work restrictions are examples of important scheduling considerations necessary to accommodate threatened and endangered species. Prior to beginning projects on federal and state lands, PacifiCorp foresters shall contact the responsible agency to determine whether or not such species are present on the right-of-way. If there are, foresters should contact PacifiCorp environmental services for support.

All tree and brushwork shall conform to guidelines of the responsible governing agency. Field data inventories of threatened or endangered species may be on file in PacifiCorp district offices. Moreover, PacifiCorp environmental services should be contacted whenever threatened and endangered species are identified.

2.2.2 Wetlands

Wetlands are lands where water saturation is the dominant factor determining the nature of soil development and the types of plant and animal communities living in and on the soil (EPA 2004). Wetlands shall be worked by hand. Federal, State and local laws and regulations concerning wetlands shall be followed.

2.2.3 Stream Protection

Work shall be planned to prevent water pollution. Trees shall not be felled into streams or drainage ditches in a way that could obstruct or impair the flow of

water, unless instructed otherwise by the responsible governing agency. Machine work shall not be performed within fifty feet of a stream. Soil or debris shall not be placed below the high water mark of streams, unless instructed otherwise by a responsible authority. Equipment shall use existing or designated stream crossings. State forestry or fish and wildlife agencies shall be contacted if tree removal in and around streams could cause erosion or if resulting exposure could increase water temperature. Federal and state laws and regulations shall be followed concerning stream protection.

2.2.4 Bird Protection

Vegetation management activities may affect migratory birds. Migratory birds are protected by the *Migratory Bird Treaty Act of 1918* (16 USC 703-712). The act was most recently amended in 1998. All but a handful of bird species are protected under the act. However, vegetation management's policy is that all bird species should be considered subject to the law's provisions. Foresters should provide annual training on bird protection to every tree crew.

The Migratory Bird Treaty Act prohibits removal of bird nests that have eggs or chicks and killing protected species. Active nests may be disturbed in rare cases of urgent fire or electrical safety risk (in the judgment of the responsible forester). If tree crews identify a possible immediate risk, they should contact the forester for authorization. The forester may approve work if the line can be cleared within an hour. If the forester approves work, he or she shall notify environmental services within 24 hours. In all other cases work should be postponed until after young have left the nest.

Eagle and colonial water bird nests (such as those of cormorants and herons) may not be disturbed regardless of whether or not they are active. Eagles are subject to additional protection insofar as it is illegal to disturb them near their nests or winter roosting sites.

Raptors (birds of prey) and herons require buffers around active nests to prevent them from being disturbed (Table 2.2). In general, if a bird leaves a nest and does not return within an hour, it is being disturbed, and the buffer should be increased. In these cases, environmental services should be contacted within 24 hours to monitor the nest and respond appropriately if the adults fail to return to the nest.

2.2.4.1 Reporting

Active bird nests and inactive eagle nests should be reported to the appropriate forester and environmental services following the procedure outlines in Figure 2.2. Anyone working in vegetation management encountering a dead bird should report it to environmental services.

2.3 Archaeological Sites

Vegetation management activities shall not disturb known archaeological sites (Figure 2.3). If a forest tech or tree crew identifies something that might have archeological significance, they should move off site and contact the appropriate forester. The forester should contact environmental services for advice on whether or not to continue. Work should not proceed without environmental service's authorization.

Prior to beginning work on federal and state lands, PacifiCorp vegetation management shall contact the appropriate agency to determine whether or not such sites are present on or near the right-of-

Figure 2.2. Bird nest procedure.

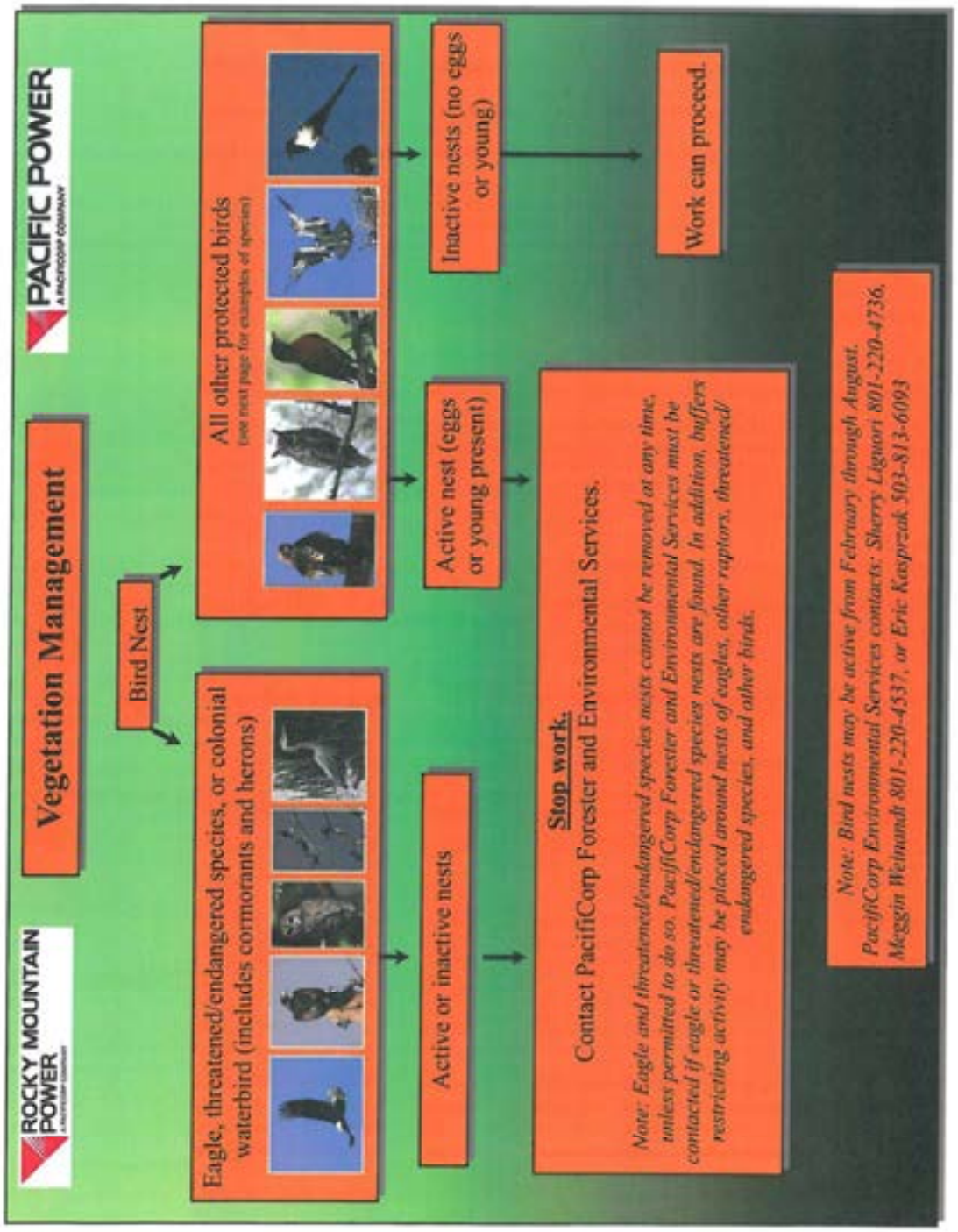

Table 2.2. Tree house clearances. Tree houses may only be allowed in a tree if they are more than minimum distances from conductors and the tree can be pruned to kept to clearances specified in this table at all times. Specified tree clearances are those for persons other than qualified line-clearance arborists specified in Table 2 of ANSI Z133. Minimum tree house distances are twice ANSI Z133 Table 2 distances.

Voltage (kV phase to phase)	**Minimum Tree House Distance From Conductors (ft-in)**	**Tree Clearance** (If tree house is built in a tree more than minimum distance from conductors)
0.31-0.75	20-00	10-00
0.751-15	20-00	10-00
15.1-36.0	20-00	10-00
36.1-50.0	20-00	10-00
50.1-72.5	21-06	10-09
72.6-121.0	24-08	12-04
138.0-145.0	26-04	13-02
161.0-196	28-00	14-00
230.0-242.0	32-10	16-05
345.0-362.0	40-10	20-05
500.0-550.0	53-04	26-08

Table 2.3. Work buffers around active nests of eagles and herons.

Species	**Work Buffer**
Herons	1000 feet
Owls	¼-mile
Hawks, ospreys, golden eagles	½-mile
Bald eagles	1 mile

Figure 2.3. An ancient food storage structure along the Camp Williams-Four Corners 345 kV right-of-way in Southern Utah. This is an example of the type of valuable archeological site that needs to be identified and protected during vegetation management work.

Rich Buelte photo

way. PacifriCorp district offices may have field data inventories of known sites to assist in the determination. If present, foresters should secure the assistance of PacifiCorp environmental services.

Archeological sites shall be located and marked. Work must conform to guidelines of the responsible governing agency. If archaeological artifacts are located on private lands, the finding shall be reported to PacifiCorp environmental services. Field data inventories of known sites could be on file in PacifiCorp district offices

2.4 Communication

Communication should be open and interactive. It should include everyone involved: management, planners, vegetation management crews, property owners, public land managers, appropriate governmental officials, members of organizations dedicated to related causes and others.

2.4.1 Internal Communication

Communication within a utility's vegetation management department needs to be clear and concise to ensure everyone involved understands the desired results. Specifications and performance goals should delegate decision-making authority throughout the

organization, as appropriate. Communication between vegetation managers and workers ought to be both written and verbal. Written instruction should include PacifiCorp Vegetation Management Specifications. It should also include details regarding concerned customers and locations of environmentally sensitive or archeological areas. Written instruction should be reviewed verbally. Appropriate communication also involves post work debriefings to review challenges and prevent problems from recurring.

Communication between utility vegetation management staff and other internal employees, such as engineers and operations managers, includes why, where, when and how vegetation management projects will be conducted. This is important because people within an organization but outside vegetation management can help set priorities, anticipate and prevent potential problems, and provide historical perspectives. Communicating with operations staff during work can also add a margin of safety. By knowing there is a vegetation management job underway, operations staff may be able to provide a timelier and more appropriate incident response than they would if they were unaware of the project. At the beginning of every week, districts in which vegetation management work is being conducted shall be emailed a spreadsheet with the approximate tree crew work locations for the coming week.

2.4.1.1 Communication of Imminent Threats

Members of the vegetation management team must comply with *Transmission Grid Operations Operating Procedure PCC-215,* which institutes the *NERC Transmission Vegetation Management Program* standard Requirement R1.5 standard. The R1.5 standard requires notification of vegetation conditions that present an imminent threat of a regional transmission outrage. PacifiCorp may implement temporary action, such as rating reductions or taking transmission lines out of service until vegetation can be cleared. Inspectors should report the exact location of the subject trees (providing longitude and latitude if possible) as part of the process.

2.4.2 Communication with External Stakeholders

Public land managers, property owners, regulators, and civic organizations have interests in utility vegetation management activities. Educating potentially affected parties about the need for, benefits of and science behind vegetation management can clarify expectations. Members of the vegetation management team, including crewmembers, should know the facts about the program, be prepared to answer basic questions and refer more complex issues through to their GF/Supervisor.

Communication should begin well in advance of work and involve listening to and understanding people's concerns. Work on governmentally-managed property can involve administrative procedures that take months of advance work, including navigating through permit processes and the concerns of specialists who have responsibility for stewardship over public lands. It is not always clear to lands specialists how vegetation management helps balance their (the land manager's) responsibilities against the public's need for a safe and reliable electric grid. A memorandum of understanding among Edison Electric

Institute (EEI) member utilities and federal land management agencies (EEI 2006) establishes a framework for developing cooperative rights-of-way integrated vegetation management (IVM) practices among EEI shareholder-owned electric companies, federal land management agencies and the Environmental protection agencies.

2.5 Miscellaneous Items

2.5.1. Hydroelectric Facilities

PacifiCorp hydroelectric facilities and adjacent rights-of-way could have restrictions on vegetation management activities. PacifiCorp's hydro operations and implementation (compliance Group), PacifiCorp right-of-way services, or PacifiCorp environmental services shall be contacted before activities on or adjacent to hydroelectric facilities begin.

Herbicide use on or adjacent to PacifiCorp hydroelectric facilities shall be reported to the plant manager weekly. Tree crews working on property that is part of a hydroelectric project site should check in with the plant office before beginning work and check out after work each day.

2.5.2 Fences and Gates

Gates should be left open or closed as they were found, or as the property owner instructs. Damage to fences or gates shall be reported to the property owner and the appropriate supervisor/GF, and repaired as soon as possible.

2.5.3 Climbing Spurs

Climbing spurs shall not be used when climbing to prune trees.

Exceptions:

- when limbs are more than throw line distance apart and there is no other safe means of climbing the tree
- when the bark is thick enough to prevent damage to the cambium
- when working hazard trees that are to be reduced in height and left for wildlife.

2.5.4 Winching Vehicles.

Winch cables or ropes should not be wrapped directly around anchor trees. Doing so damages a tree's bark and cambium and can not only reduce its health and value, but also create hazards to overhead lines. If the need arises to winch a vehicle (including an all-terrain vehicle), a nylon strap (or equivalent) at least 2-inches wide shall be used around the tree, and cables or ropes attached to the strap. Utility poles or towers shall never be used as winch anchors.

2.6 Tree Removal

Tree removal is an important component of PacifiCorp's vegetation management program. Tree removal can reduce safety risks, improve access to facilities, clear lines of sight and moderate future workloads. Tree conditions are site and tree specific.

Tree removal on distribution facilities requires either written notification to or signed permission from the property owner, unless there is a right-of-way, easement or permit that expressly authorizes tree removal. If such an easement or permit exists, notification to the property owner may be verbal, provided it is documented. Signed permission may be obtained on the removal door hanger (see Section 8.2.1.3) or *Property Owner Permission Form* (see Section 8.2.2).

Stumps shall be cut to within six inches of the ground or as close to the ground as practical (for example, at the top wire of a barbwire fence with wire that has become imbedded in the trunk). Stumps of all deciduous trees, brush and vines that are removed shall be treated with an approved herbicide, where permitted (see Section 7.2.3.1).

PacifiCorp prefers to remove the entire tree in the following situations:

- Transmission rights-of-way where the conductors are less than 50 feet off the ground, or between 50 and 100 feet off the ground depending on the size of the tree (see Table 6.1 and Figure 6.3).
- Hazard trees (dead, dying, clearly diseased, deformed, or unstable trees which have a high probability of falling and contacting transmission or distribution conductors). Note that every tree is potentially hazardous. With millions of trees under management, it is impossible to identify and correct every potentially hazardous tree. Nevertheless, PacifiCorp has a responsibility to maintain its system by making a reasonable effort to identify trees that are clearly hazardous, and correct the problems they could cause in a timely manner.
- Trees that will take no more than twice the time to remove than to prune during distribution cycle work, with the exception of hazard or cycle-buster trees.
- Trees that take no more time to remove than to prune during interim and ticket work. Hazard trees excepted.
- Readily climbable trees.
- Trees with tree houses not meeting the clearance to transmission or distribution conductors shown in (Table 2.3)
- Fast-growing trees that could interfere with distribution conductors or violate specific state regulatory clearances before the next scheduled maintenance work (cycle-busters).
- Volunteer trees less than six-inches in diameter (DBH), which could eventually interfere with distribution conductors.

2.6.1 Equipment Mowing

Mowing is often more cost effective than manual methods of tree removal and should be pursued wherever practical (Figure 2.4). Mowing should be limited to fifteen feet either side of distribution primary wires and within transmission rights-of-way.

2.7 Mechanical “Trimmers”

Mechanical “trimmers” may improve productivity in rural, densely vegetated areas (Figure 2.5).

2.8 Slash Disposal

Slash is brush and limbs less than six-inches in diameter removed during tree operations.

2.8.1 Developed Areas

In developed areas, slash should be chipped and removed from the site unless an agreement has been reached with the property owner to leave it. Slash may be left temporarily, provided the crew has notified the property owner or tenant, and arrangements made to clean it up to the customer's reasonable satisfaction within two business days. Tree stems greater than six-inches in diameter should be left on site, and work locations left in a safe and orderly condition.

Figure 2.4. Side mower used on distribution rights-of-way.

Figure 2.5. Jarraff mechanical “trimmer” that may improve productivity in remote areas.

Figure 2.6. Cracked pole – an example of the type of conditions tree crews should report.

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Figure 2.7. PacifiCorp Vegetation Management Maintenance inspection report form.

Maintenance Conditions Found by Crews			
Week Of			
Location - closest address, meter number if available and facility point number.			
Address (city and state)			
Meter #		Facility Point #	
Description of Problem:			
Employee Name:			

2.8.2 Rural Areas

In rural areas, slash should be disposed of on-site whenever possible.

For off-road, wooded areas, brush should be lopped into three-foot maximum lengths, and scattered in piles no more than two-feet high. Stems larger than six- inches in diameter should. They may be cut in firewood sized length at the customer's request.

Limbs and slash should be piled separately. Limbs and slash should be disposed of at the sides of distribution rights-of-way, and outside the wire zone of transmission rights-of-way, unless specified otherwise by the area forester. If brush is chipped, it should be broadcast on site wherever possible. Resulting chip piles should be no higher than two-feet. Debris piles should not limit or block access to the right-of-way, or create fire risk.

2.9 Storm Work

Storm work is done under the authority of the district operations managers. Tree crews and forest techs assigned to storms should work under the direction of circuit captains. Tree crews should report their progress at least daily to both the circuit captain and their GF/supervisor. The supervisor should report crew progress to the appropriate forester.

All storm work must be conducted as if the line is energized. If the line cannot be worked safely under the assumption it is energized it must be grounded in accordance with section 2.1.1. In general, PacifiCorp does not dispose of slash or debris resulting from storm damage. Trees that fall during storms would do so regardless of whether or not the lines are present. It should not be the utility's responsibility to clear the debris simply because the tree or trees from which it origionated damaged Company facilities

on the way down. However, if an outage is preventable, slash may be cleaned-up and removed from a property at the forester's discretion.

2.10 Facility Inspection

While tree crew members are not facility inspectors, they can be helpful in identifying pronounced conditions, such as cracked poles (Figure 2.6) broken cross arms or insulators, loose guy wires, and other problems. Tree crew members should report the condition on the *Maintenance Condition Report Form* (Figure 2.7).

2.11 Freelance Work

Tree crew members shall not solicit or perform arboricultural-consulting or tree work (pruning, removal, insect or disease control, fertilization etc.) for interests outside of officially authorized PacifiCorp projects during work hours, at any time on property served by feeders or grids subject to an open work release or on property adjacent to or within 220 yards of transmission lines subject to an open work release. Outside projects may include side jobs for cash, work for private arboricultural firms (whether or not they are owned by the tree crew members doing the work), consulting or any other arboriculturally related enterprise.

3. TREE BIOLOGY AND PRUNING

Pruning is primarily on distribution facilities, although it can have application to transmission lines in some cases. The primary purpose of utility line clearance work is to minimize safety and service reliability risks caused by tree-power line conflicts.

Pruning to clear conductors shall adhere to the principles of modern arboriculture. The *American National Standard for Tree Care Operations* A300 (ANSI 2007), International Society of Arboriculture (ISA) *Best Management Practices: Tree Pruning* (Gilman and Lilly 2002), *Best Management Practices: Utility Pruning of Trees* (Kempter 2004), and *An Illustrated Guide to Pruning* (Gilman 2002), among other references, convey those principles.

While proper utility line clearance work should be consistent with practices that promote tree health, utilities cannot place tree health over public welfare. Sometimes, there is no way to obtain proper clearance in a manner that ensures the health of a tree (Lilly 2010). This is particularly true regarding foliage retention. In cases were the tree cannot be pruned without harming its health, tree removal is often best for the tree, tree owner and utility. If tree removal is not permissible, the tree should be pruned to specification clearances, even if that work is against a customer's wishes or could harm the tree.

3.1 Utility (Directional) Pruning

Directional pruning is natural target pruning applied to routing tree growth away from utility lines (Miller 1998). ANSI A300 (2007) and ISA's *Best Management Practices* (Kempter 2004) instruct that pruning to clear the utility space involves thinning cuts: removing at natural targets entire branches that are growing toward (or once cut will produce sprouts that will grow toward) the power lines.

While heading cuts produce sprouts that grow quickly back into the power lines, branch removal and reduction promotes growth away from conductors. Since the point of utility pruning is to train trees around power lines wherever practical, branches growing away from the electric facility should not be pruned. Instead, these stems should be allowed to develop to their natural height or length, provided that growth does not create unreasonable safety risks. This cannot be accomplished with strongly excurrent trees trapped directly beneath conductors.

Topping, round-overs, flush cuts, branch tipping and rip cuts are improper because they damage trees. Directional pruning is consistent with natural tree structure. Remaining branches retain their taper, strong attachments, growth regulators and spacing. They continue to grow and function normally, allowing the tree to reach to its natural height.

"V" shapes often result on properly pruned trees growing under power lines, particularly on decurrent, deciduous trees (Miller 1998, Shigo 1990, Gilman 2002, Kempter 2004) [Figure 3.1]). Limbs growing upward and toward the facility should be cut back to the trunk or to limbs growing away from the conductors.

Remaining branches should have sufficient clearance so they do not contact the conductors in inclement weather common for the locality (high wind, freezing rain, snow or other conditions). Excurrent trees (such as many conifers) are more problematic, but should be reduced to appropriate laterals or whorls.

"L" or one-sided shapes often result on properly pruned trees to the side of conductors. (Shigo 1990, Gilman 2002 [Figures 3.2]). Limbs on the wire side of trees located adjacent to facilities should be cut back to the trunk; or to limbs growing vertically, sideways or downward; depending on the distance to the line or available natural target.

3.2 Tree Biology

Understanding fundamental tree biology is essential to applying proper pruning to utility line clearance (Miller 1998).

3.2.1 Leaves

Leaves are the tree's food source. Tree survival depends on the leaves' ability to manufacture carbohydrates from the sun's energy, carbon dioxide and water. Current thinking among scientists is that if a tree abruptly looses a large portion of its foliage, as can happen with over-pruning, it could lack the energy resources to meet its needs. Trees with insufficient foliage could be weakened to the point where they become subject to attack by opportunistic insect and disease pests. Damage can extend to the roots as well as to above ground portions of the tree (Shigo, 1986). Trees can suffer sun injury after sudden excessive foliage loss (Miller 1998).

3.2.2 Stem Anatomy

Trunks and branches are tree stems. Their function is support, energy storage, and water, mineral, carbohydrate and growth regulator transport. The point of origin of a branch or limb is a node. A lead is an upright trunk or major limb with a dominant role in the tree crown, and a lateral is a branch off a parent stem. Some leads can also be laterals.

3.2.3 Xylem

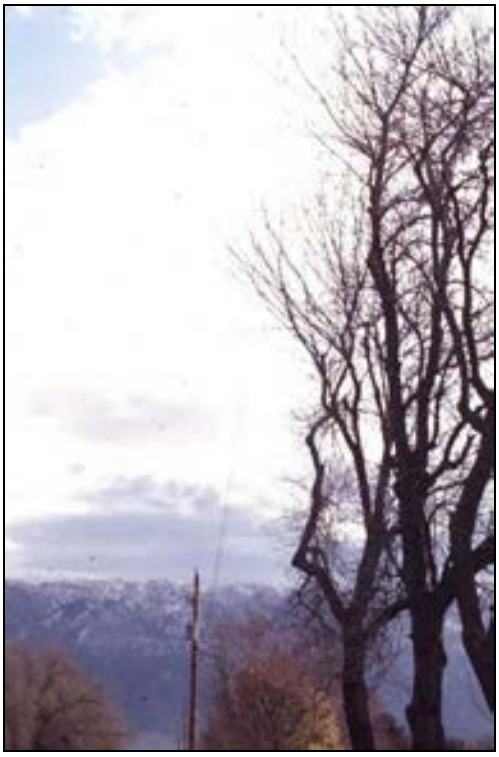
Xylem is wood tissue. Sapwood is young, living xylem that stores carbohydrates, provides support, and conducts water and essential elements. Heartwood is old, dead xylem that provides support, and often contains anti-microbial compounds.

Long, hollow conducting cells (trachieds or vessels) predominate xylem structure. While trees need this vascular structure to conduct water and essential elements, it can be exploited by pathogens to spread up and down the stem. Trees attempt to block or "wall" off disease spread by plugging conducting cells in various ways, but pathogens can use food energy stored in the trunk or branch to breach these walls (Shigo1986).

Authorities disagree over how much foliage removal trees can tolerate in a given year. ANSI A300 (2007) recommends no more than 25%, while Gilman (2002) suggests less than 10 to 15 percent. Often, much more than 25% of foliage must be removed from the tree in order to appropriately maintain electric facilities. The ANSI committee did not intend the 25% provision to impede utilities from achieving appropriate clearances (Smith 2002). Utility arborists faced with the choice of maintaining public welfare by clearing the tree to specifications on one hand, or promoting tree health on the other, have no alternative but to safeguard the civic good.

Figure 3.1. ”V"-shapes can develop from crown reduction on deciduous trees (left). The ultimate objective is to train trees up and around the wire wherever possible, so the facility is clear and the tree is healthy. These two photos are of the same tree, in 1992 (left) and 2007 (right).

Figure 3.2 "L" or one-sided shapes often result on properly pruned trees growing to the side of conductors. Pruning may be mechanical in rural areas, below right.



3.2.4 Cambium

The tree's cambium is a thin layer of rapidly dividing cells around the outside of the sapwood. One of the functions of the cambium is to produce wood to its inside, creating diameter growth. This is the only source of wood production in the tree system, and the tree has no ability to replace damaged or decayed wood.

Pathogens gain access to wood through wounds. In response to wounding, the cambium generates a "barrier zone" containing antimicrobial compounds (Figure 3.3). It protects new wood by separating it from potentially infected wood that existed at the time of wounding. Following infection, a "race" develops between the cambium and wood-rotting microorganisms, with the structural integrity of the tree at stake. The cambium must produce new wood faster than pathogens can digest the former stem if the tree is to remain viable (Figure 3.3).

While the barrier zone contains strong antimicrobials, it is weak structurally. This structural weakness can be problematic, as cracks may develop along the barrier zone when the stem twists and flexes due to wind, ice or other stress loads. These cracks allow pathogens to breach the barrier zone and enter new wood, further threatening the tree (Figure 3.3 [Shigo 1986]).

3.2.5 Branch Collars

Branch collars are a combination of parent stem and branch tissue generated through coordinated growth around the branch attachment (Figure 3.4). In the spring of the year, diameter growth begins at branch tips, and works toward the base. When new wood meets the branch base, it turns at 90°, and wraps around the juncture. Later in the growing season, wood from the parent stem envelops branch wood laid down earlier. As a result, two layers of wood secure the branch every year, and the attachment increases in strength as the branch grows (Shigo1986).

3.2.6 Branch Bark Ridge.

An important structure associated with branch attachment is the branch bark ridge. The branch bark ridge is a line of raised bark, formed as the branch and parent stem grow together. It marks where branch wood meets stem wood Figure 3.5). A raised branch bark ridge is often a sign of a strong attachment.

3.2.7 Branch Protection Zone

Branch protection zones are areas of antimicrobial compounds that form internally at the base of diseased or injured branches (Shigo 1986). They inhibit pathogens in the branch from passing to the parent stem. While protection zones are effective, pathogens can overcome them using energy stored in the branch.

3.2.8 Taper

Tree stems taper from their bases, where they are widest, to twig tips, where they narrow to buds or apical meristems. Taper provides flexibility and strength that disperses loads from branch weight and from wind, snow or ice loads. The adaptation reduces the likelihood of failure under stress.

Figure 3.3 The cambium creates a barrier zone that contains discoloration and decay in old wood, protecting new wood. Note on the right, a ring shake formed along the old barrier zone. This is a structural flaw.

Figure 3.4. Branch collars form at branch bases.

Figure 3.5. A raised branch bark ridge is often a sign of a strong attachment. It marks where the branch meets the parent stem.

Figure 3.6. Codominant stems are at least 50% of the diameter of their parent stem. They have no branch collars or branch protection zones. Codominant stems can grow together and have bark included (embedded) between the stems in the attachment.

Figure 3.7. A before and after collar cut.

3.2.9 Codominant Stems

Codominant stems are stems that are at least half the diameter of their parent stem, and compete for dominance in the tree crown (Gilman 2002). They are similar to branches, but have no branch collars or branch protection zones. Disease moves from one codominant stem to another as readily as it moves through ordinary stems. Codominant stems can have a branch bark ridge. However, they are structurally flawed because they do not have room to develop (Figure 3.6). As crowded branches grow in diameter, they can press together, creating wounds and squeezing bark in between the two stems (Figure 3.6).

The resulting wounds allow disease entry and weaken branch attachments. Moreover, stems with included bark often pry one another apart as they grow, further weakening their attachments. Attachments with included bark often fail, and can be recognized by a crease between stems near their juncture (Figure 3.6).

3.2.10 Growth Regulators

Growth regulators are chemicals that coordinate plant growth. A growth regulator can have confusing, even contradictory roles depending on its concentration, the concentration of other growth regulators, environmental conditions the species of tree, and other factors. Nevertheless, scientists understand that growth regulators are responsible for orderly plant growth and development.

For example, auxin is a growth regulator produced in apical meristems, while cytokinin is another type synthesized in root tips. In response to environmental factors, roots grow and make cytokinens that stimulate shoot growth, which can result in auxin production that promotes root development. The resulting cycle is one way the tree system “communicates” to stay in balance as it grows. Auxin also functions in apical dominance. Auxin produced in apical meristems inhibits lateral growth, and helps to account for orderly branch development and spacing. Conversely, removing an apical bud or

meristem promotes lateral growth, which alters the tree's normal growth habit, and can lead to codominant stems, poor spacing, and included bark.

Gibberellins are another class of growth regulators. Among other functions, gibberellins promote cell elongation. Marketed chemicals commonly known as "Tree Growth Regulators" (TGRs) are actually gibberellin inhibitors. By inhibiting gibberellins synthesis, TGRs reduce cell elongation, which in turn slows growth

3.3 Natural Target Pruning

Natural targets are proper final pruning cut locations at strong points in the tree's disease defense system. Removing branches at natural targets rarely damages the joining trunk or limb (Miller 1998). The ISA *Best Management Practices: Tree Pruning* (Gilman and Lilly 2002) and *A300* (ANSI 2007) describe the technique. Targets vary depending on whether a branch is removed or reduced.

3.3.1 Collar Cuts

Branches should be removed at the collar (Figure 3.7). Cutting into the collar, known as flush cutting, is inappropriate because it creates a direct port of disease entry into the parent stem.

Disease can weaken stems, potentially creating safety risks. On the other hand, proper branch removal does not leave stubs that pathogens can use as an energy source to overcome the tree's defense system and spread into the trunk. If the branch is removed correctly, only the branch protection zone is exposed, giving an advantage to trees in keeping out disease. As a result, collar cuts virtually prevent decay from entering the parent stem (Figure 3.7 [Miller 1998]).

3.3.2 Approximating the Collar

Occasionally, branch collars are not readily evident and the collar must be approximated using the branch bark ridge (Figure 3.8). Start the cut in the branch crotch, just outside the branch bark ridge, and follow an outward angle that mirrors the inward angle the branch bark ridge makes with the trunk or parent stem. The cut should end roughly opposite the bottom of the branch bark ridge (Figure 3.8).

3.3.3 Reduction Cuts

Reduction cuts shorten leads to appropriate laterals. An appropriate lateral is no less than one-third the diameter of the original limb and retains at least three-quarters of the lead's foliage (ANSI 2007 [Figure 3.9]). The reason for these requirements is that branches are autonomous in their energy requirements. Removing too much foliage from a limb could deprive it of sufficient energy to establish apical dominance, maintain its taper, close the wound, and compartmentalize and "out-race" disease which will enter the wound.

As a result, the lateral will not develop into a structurally viable leader. Moreover, shortening a lead removes apical meristems and other points of growth regulator production, which can disrupt orderly growth. If, for example, auxin concentrations are insufficient, on some species a crowded mass of upright, rapidly growing, poorly attached shoots can sprout from the cut and grow directly back into the lines.

Therefore, removing more than 25% of foliage from a limb has the same damaging result as a random topping cut (Figure 3.10), regardless of whether or not the cut is made to a proper-sized lateral. Even under the best circumstances, reduction cuts are

potentially harmful, acting more like a heading than a thinning cut (Gilman 2002). Consequently, if a lead cannot be shortened to a limb at least one-third the diameter of the original lead, or if a cut removes more than 25% of the foliage, that limb should be either targeted for removal, or not pruned. Removal may be gradual over the course of several cycles.

3.3.4 Large Branches

Large branches (those 3-inches in diameter or greater) can seldom, if ever, be removed without harming the tree, particularly if they are codominant stems. Yet, large branches must be prevented from growing toward the utility space, and that nearly always means heading or removing them entirely. Either option can be harmful, but heading large branches not only injures the tree, but fails to effectively clear the conductors (Figure 3.10).

Removal may take a measured approach. For example, one or two large limbs might be removed out of three that are growing toward the conductors, and the remaining limb(s) targeted for removal on subsequent cycles.

Large branches selected for later removal can be subordinated, or removed gradually over subsequent cycles (either interim or cycle). Subordination thins a portion of a limb's foliage. Reducing a fraction of the foliage in this way suppresses the stem's growth, and allows the remaining tree parts to adjust and develop. In some cases, subordination can allow a codominant stem to develop into a branch over time, enabling ing a branch protection zone to form so a limb can be removed without unnecessarily subjecting a tree to disease (Gilman 2002). Using subordination over multiple cycles to remove large branches can reduce the effect of structural limb removal on tree health, while ultimately circumventing the permanent problems heading cuts can cause, even if that means temporarily heading the branch.

3.3.5 Old Heading Cuts

Removing large stems that have been headed often leaves wide gaps in the tree, because shoots that proliferate from the old heading cuts often dominate the crown (Figure 3.10), and gaps result when branches containing these shoot clusters are removed. Moreover, previously headed branches usually lack natural targets. When such branches are growing toward the conductors, there is often no alternative but to remove them entirely.

Headed branches growing away from the facility space should not be pruned as a matter of standard practice. However, shoots growing from the old heading cuts should be inspected for structural integrity during subsequent visits. Corrective action, such as crown restoration (ANSI 2007), could be necessary if these sprouts are found to be structurally weak. However, in some cases, structural defects resulting from heading cuts are so severe that they cannot be corrected (Dahle et al. 2005). In these cases, the customer should be contacted about removing the entire tree, or at least the subject branch or branches. If tree or branch removal is not possible, there could be no choice but to remove the weak growth with a new heading cut. This should be done only when extensive decay or hollow exists in the remaining branch, with the approval of the forester or GF/supervisor, for safety (not "aesthetic") purposes.

Figure 3.8 Approximated collar cut.

Figure 3.9. Crown reduction cut.

Figure 3.10. Old heading cut. Shoots that proliferate from these cuts often dominate the tree's crown, and gaps result when branches containing these shoot clusters are removed.

3.3.6 Reduction

Reduction is selective pruning applied to reduce the top or side of a tree or individual limb (ANSI 2007). In a utility context, the goal of reduction is to promote future tree growth away from the conductors, at least on decurrent trees (Figure 3.1)

3.3.6.1 Deciduous Trees

The "V" in many crown reduced deciduous trees quickly fills in with shoots. These shoots eventually require pruning to be kept from interfering with the lines (Figure 3.1) In subsequent cycles, it is important not to strip all these sprouts away, since that causes lion's tailing and can stimulate resurgent growth in many species. Rather, about half of the shoots should be removed, and the other half retained (Figure 3.11).

Shoots selected for removal should be the largest and most vigorous, leaving smaller sprouts behind. Growth selected for retention should be pencil-thin at the point of attachment. If need be, these remaining shoots may be headed back to obtain specification clearances. In this way, a rotation can be established where the largest, most vigorous shoots are removed each cycle, but smaller, suppressed shoots are left to soften the negative visual effect that many customers find objectionable.

Moreover, leaving shoots in the interior of a "V" provides shade and retains auxin production, both of which suppress vigorous sprouting, and helps the trees hold (Figure 3.11). Eventually the sides of the tree will overtop the wires, resulting in more of a "U," and shade the interior of the tree, suppressing shoot growth even more. In time, this top growth decreases the proportion of the crown occupied by the cleared utility space, and softens the negative aesthetics.

3.3.6.2 Conifers

Many conifers; such as pine (*Pinus spp.*), spruce (*Picea spp.*) and Douglas-fir (*Pseudotsuga menziesii*); have strong central leaders (excurrent form). When these types of trees grow directly under the lines, they should be reduced to the whorl or largest available lateral that provides specification clearance. Cuts made to conifer whorls are typically flat-topped in order not to damage any branches in the whorl (Figure 3.12). Laterals should be tipped on a conifers, which prevents them from forming compression wood and bending up toward the conductor.

3.4 Helicopter and Mechanical "Trimming"

Helicopter and mechanical "trimming" can be cost effective in rural areas. However, it can be difficult or impossible to hit natural targets with a mechanical saw. Consequently, decay and sprouts may develop that can cause problems in the long run. Therefore, care should be taken where to employ machines, and in subsequent years work needs to be monitored as hazard trees may develop.

Figure 3.11 On return visits to "V-Outs", under pruning should leave the smaller, suppressed shoots to retain foliage and soften the visual effect of crown reduction.

Figure 3.12. Crown reduction.

4. SCHEDULING AND REPORTING WORK

4.1. Scheduling Work

Scheduled work involves systematic cycle or interim projects on both distribution and transmission lines. Schedules should be based on the time elapsed since the last scheduled work, compliance, voltage (particularly for transmission lines), the frequency of tree-caused outages, customer count, the existence of important accounts (hospitals, factories, mines or other facilities), tree conditions, the number of customer complaints, the growth rate of predominant tree species, geography, whether the area is rural or urban, rainfall and other environmental factors.

4.2 Process Checklist

Scheduled distribution and transmission work should follow the *PacifiCorp Vegetation Management Process Checklist* (Figure 4.1). The purpose of the process checklist is to facilitate systematic project management. The project should be identified along with the start date on the top of the process checklist.

4.2.1 Authorize Project Work

PacifiCorp foresters are responsible for work authorization. No work should begin on a project until foresters have authorized it to proceed as outlined.

4.2.1.1 Contractor Work Release

Before beginning a scheduled project, the forester shall open a *Work Release* (Figure 4.2). The *Work Release* authorizes a contractor to proceed with a specific maintenance project, and provides written instructions for the work. Contractors will not get compensated for work performed on projects that have not been authorized through a work release.

The *Work Release* specifies the project type (distribution cycle or interim, transmission cycle or interim, TGR or chemical), and other systematic work. It provides instructions on tree removals, tree replacement, tree growth regulators (TGRs) and other particulars. It also assigns desired starting and ending dates. Before work begins, the GF/supervisor shall distribute copies of the *Work Release* to each crew assigned to the project, and review instructions for proceeding.

After the project is finished, the supervisor/GF shall sign the *Work Release* to certify the project is completed and closed. The contractor shall provide the actual starting and completion dates, as well as any pertinent comments. Comments should note work that is either incomplete (due to refusals, for example) or does not meet specifications at the time the *Work Release* is closed. By signing off on a project, the contractor guarantees that the work has been completed to PacifiCorp's specifications, and assumes responsibility for any failures to meet Company requirements, outside of exceptions noted in the comments.

4.2.1.2 Set Labor-hour Goals

The forester should set goals for labor-hours a tree and mile for distribution lines. These goals should be based on production data drawn from the last work on the feeder or grid, with a stretch goal of 10% improvement. Goals should also be established for transmission facilities at labor-hours an acre from previous or similar projects.

Figure 4.1 Process Checklist

PACIFICORP

Vegetation Management Process Checklist

Work ID: _____

Date: _____

Authorize Project Work - Utility Forester

- ☐ Open Work Release and Set Goals. Distribute and Discuss with Vegetation Contract Supervisor
- ☐ Labor-hour Goals Set for Trees, Miles or acre (for transmission lines)
- ☐ Work Release Sent to Consultant LD/SR, Service Coordinator and System Forester
- ☐ ☐ N/A Notify Operations Managers, Community Relations Managers, Communications

Project Plan - Forester, Contract Supervisor and Forest Technician

- ☐ ☐ N/A Identify Overbuilt Transmission and Open Transmission Work Release
- ☐ ☐ N/A Research and Identify Governmental, Tribal, and Environmentally sensitive areas
- ☐ ☐ N/A Identify External Agencies and Notify if Necessary (Federal, State County, City and pertinent NGOs
- ☐ ☐ N/A Conduct Pre-job Meetings With Government Agencies
- ☐ ☐ N/A Contract Expert to Delineate Sensitive Sites or Areas and Identify On Maps
- ☐ Forester Inventories, Compiles, Assembles, Checks Out Maps to Vegetation Contract Supervisor

Project Plan Developed - Contract Supervisor and Forest Technician

- ☐ Pre Job Meeting With Forester, Supervisor and Forest Tech — Date: _____
- ☐ Identify Concerned/Dangerous Customers
- ☐ ☐ N/A Identify and Obtain Federal Special Use Permits:
- ☐ ☐ N/A Identify and Obtain Federal, State, and Local Herbicide Use Permit(s)
- ☐ ☐ N/A Identify and Obtain Other Required Permits: Specify:
- ☐ ☐ N/A Identify Outstanding Ticket Work
- ☐ ☐ N/A Identify Flagging Work
- ☐ ☐ N/A Distribution Configuration ☐ Wye ☐ Delta

Work Identification - Contract Forest Technician

- ☐ ☐ N/A Review of Special Precautions: (list)
- ☐ ☐ N/A Follow-up: Personal Contact Requirements, Special Access, Time Sensitive Instructions
- ☐ ☐ N/A Verify Facility Point Inspections Locations
- ☐ ☐ N/A Verify Aerial Waypoint Locations
- ☐ ☐ N/A Review Environmental and Cultural Requirements:
- ☐ Inspect, Prioritize Work Areas
- ☐ Notify Private Landowners and Public Land Managers

Work Assigned to Project Crews - Contract Forest Technician and Supervisor

- ☐ Activity Reports And Other Pertinent Feeder/grid Information Issued to Crews
- ☐ ☐ N/A Required Permits Issued to Crew
- ☐ Work Release and Project Specifics Communicated and Issued To Crews
- ☐ ☐ N/A Sensitive Sites or Areas Reviewed With Crews — Date: _____
- ☐ ☐ N/A Special Instructions: (list below in comments section)

Figure 4.1. Continued

Project Closure - Contract Supervisor and Forest Technician

☐ Post Inspection of Work to Verify Completion Date: _____

☐ Inventory and Check in Maps

☐ Maps and Documentation Submitted

☐ ☐ N/A Concerned Customer Forms Submitted

☐ ☐ N/A Refusal Information Submitted

☐ ☐ N/A Dangerous Customer Information Submitted

☐ ☐ N/A Tree Replacement Voucher Copies Submitted

☐ ☐ N/A Hazard Forms - Copy in File and Copy to Utility General Foreman

☐ Daily Logs for Project Sent to Utility Area Forester

Project Closure - Forester

☐ Verify Receipt of All Maps, Daily Logs, Activity Reports, Tree Replacement Vouchers, and Hazard Forms

☐ Verify Receipt of Refusal and Concerned/Dangerous Customer Information

☐ Verify Receipt of Signed Work Release

☐ Close Work Release (Send to Consultant LD/SR, Service Coordinator and System Forester)

X_____ X_____

Contract Supervisor / Date Area Forester/ Date

Comments:

PacifiCorp Vegetation Management

Contractor Work Release

This work release authorizes *Contractor* to proceed with the specified maintenance project. All work shall conform to PacifiCorp's Vegetation Management Specifications. Following project completion, a *Contractor* representative shall sign this work release, and return it to PacifiCorp. Refusals or any work performed that does not conform to PacifiCorp Specifications shall be noted.

District: **Project #:**

Contractor: **Supervisor/GF:**

_____ **Distribution Cycle Maintenance** **Feeder/Grid #:**
Work according to PacifiCorp *Specifications*. Identify and correct all climbable tree and tree house hazards, and remove danger trees.

_____ **Tree Removals:** Limit removals to cases where removal time equals twice pruning time. Forester approval is required for removals outside of this constraint.

_____ **Tree Replacement:** Use coupons to pursue removals as needed.

_____ **Tree Growth Regulators:** Pursue TGRs on cycle busters.

_____ **Bulk Transmission:** Work bulk transmission with distribution.

_____ **Other:** _____

Desired Starting Date: _____ **Completion Date:** _____

Area Forester Approval: _____ **Date:** _____

To be completed by the Contractor:

Starting Date: _____ **Completion Date:** _____

Comments: _____

Supervisor/GF Signature: _____

4.2.1.3 Work Release Forwarded to Senior Business Specialist and Director of Vegetation Management

The forester should forward the work release and goals to the PacifiCorp senior business specialist and director of vegetation management. The consultant will authorize payment for work on the project.

4.2.1.4 Notify Appropriate Company Personnel

The forester should notify internal stakeholders in the project. Before beginning work in a new area, always notify the operations manager, and customer-community manager for that area. In addition, notify line patrolmen when working on transmission lines and site managers when working on hydro or other operations sites. Notify the PacifiCorp tariff policy department if work will be conducted in a location where either past or current state public utility commission complaints have been received. Notify the PacifiCorp communications department if work will be conducted in the vicinity where public relations issues have surfaced in the past.

4.2.2 Project Plan

The project plans section addresses foresters, contract supervisors and forest technicians.

4.2.2.1 ID Overbuilt Transmission and Open Transmission Work Release

Transmission overbuilt on distribution lines should be worked in conjunction with distribution feeder or grid projects. All work should be billed to the highest voltage lines. Consequently, if overbuilt transmission exists on an open feeder or grid, foresters need to open a second work release covering the transmission work.

4.2.2.2 Research and Identify Governmental, Tribal and Environmentally Sensitive Areas.

Governmental, tribal and environmentally sensitive lands present particular demands. Lands under governmental or tribal management and environmentally sensitive areas should be identified early to allow time to work through the required processes.

4.2.2.3. Identify External Agencies and Notify if Necessary.

Identify federal, state, county, city and pertinent non-governmental organizations potentially affected by the project. The appropriate entity should be notified of the impending project, to determine whether or not they have any concerns.

4.2.2.4 Conduct Pre-job Meetings with Governmental Agencies

Before any field work begins, a meeting shall be conducted with any governmental agency at any level with interest in the project. This is especially important for federal and tribal agencies. In particular, no work may begin on Bureau of Land Management or Forest Service managed lands without a pre-work meeting among federal officials and vegetation management. Multiple projects and multiple agencies may be covered by a single meeting.

The meeting(s) must be organized by the forester and PacifiCorp's environmental services must be notified and invited to attend. The meeting may be held either in person or through a conference call. Work shall not begin until vegetation management receives

written notice to proceed from the appropriate agency.

4.2.2.5 Contract Expert to Delineate Sensitive Areas

If environmentally or culturally sensitive areas are identified on governmentally-managed lands, a contractor with appropriate expertise should be retained to delineate subject sites or areas. Target locations should be marked on maps and on site. Care should be taken with field marking to ensure it is sufficiently clear to alert crews, while at the same time being sufficiently discreet to avoid casual detection.

4.2.2.6. Forester Inventories, Compiles, Assembles, Checks Out Maps to Vegetation Contract Supervisor

It is critical for foresters to be gatekeepers over company maps in order to ensure there is only a single master version of each. The forester will check out copies of the master version, which should include sensitive environmental or cultural sites. Effort should be made to work off of digitized maps wherever possible.

4.2.3. Project Plan Developed

The contract supervisor and forest technician are responsible for developing the project plan.

4.2.3.1. Pre-Job Meeting

The contract supervisor and forest tech must have a pre-job meeting to discuss the upcoming project. They should discuss elements of the project plan and focus on solving problem issues that arose during the initial stages of the planning process.

4.2.3.2. Identify Concerned or Dangerous Customers

Forest techs should research the feeder or grid file to identify customers with a history of concerns. Forest techs should be proactive in working with these customers.

4.2.3.3. Identify and Obtain Federal Special Use Permits

PacifiCorp facilities that cross federally-managed lands are in place under the authority of special use permits. Forest techs and supervisors should study and ensure the conditions in the pertinent special use permits are satisfied.

4.2.3.4. Identify and Obtain Federal, State and Local Herbicide Use Permits.

Herbicide or pesticide use permits are required in certain jurisdictions, particularly on federally-managed land. If a permit is required, foresters must ensure that forest techs or supervisors/GFs have obtained it before herbicide application may proceed.

4.2.3.5. Identify and Obtain Other Required Permits.

There are locations where permits may be required for work. Examples may include state road rights-of-way, some communities, county or state forests or riparian areas. All required permits shall be obtained before work may proceed.

4.2.3.6. Identify Outstanding Ticket Work.

From time to time, customers who have called in work requests have been told that their request did not present an immediate threat to safety or electric service, and would wait until we arrived on cycle. Forest techs should research tickets associated with a feeder or grid,

ensure contact is made with those customers, assign the work to a tree crew if it is necessary, or if not, explain the reasons to the customer.

4.2.3.7. Identify Flagging Work.

Many areas require flaggers and traffic control. Forest techs should identify areas where flagging support is necessary. Those locations should be identified on both the *Activity Report* and a map.

4.2.7.8. Distribution Configuration

The overwhelming majority of PacifiCorp distribution circuits have wye configuration, which includes a neutral wire. However, delta construction, which does not have a neutral wire, is found in some areas.

The difference is of little consequence on wires attached to cross arms, as all cross arm mounted wires should be cleared to primary specifications (see section 5.5.5). However, there is a difference on lines without cross arms. Wye construction has a low neutral, while the low wire on delta carries primary voltage. This could lead to safety and clearance risks if the low primary is mistakenly identified. In noting that a circuit is delta construction, forest techs should alert tree crew leaders of the potential of a low-mounted primary, so proper safe work practices can be conducted and clearances obtained.

4.2.4 Work Identification

Forest techs are responsible for work identification.

4.2.4.1 Review Special Precautions

Before beginning field work on a project, forest techs should review special precautions. These might include areas where difficulties have arisen in the past, such as a particularly sensitive community or neighborhood, areas where the media has been called to help oppose line clearance work, locations where there is a concentration of people who object to herbicide application, environmentally or culturally sensitive areas, places that present particular challenges to tree crews or other considerations.

4.2.4.2 Follow-up With Items of Concern

Forest techs should follow-up with customers who requested personal contact in the past, note special access (property owners who have requested tree crews not use a gate or drive, for example), or time sensitive instructions. Time sensitive instructions might include advisories not to work prior to hay harvest, not to drive in a field during the raining season in the Pacific Northwest, or some other matter.

4.2.4.3 Verify Facility Point Locations

Forest techs should print outstanding facility points for the feeder, grid or transmission lines on which they are working. They should ensure to inspect outstanding conditions and assign work where necessary.

4.2.4.4 Verify Aerial Waypoint Locations

For transmission projects, forest techs should print outstanding locations from recent aerial patrols and ensure they are inspected and worked if necessary.

4.2.4.5 Review Environmental and Cultural Requirements

For work crossing governmentally managed land, forest techs should review any existing environmental and cultural

requirements. These can include threatened and endangered species, riparian areas or areas in which culturally sensitive sites exist.

4.2.4.6 Inspect, Prioritize Work Areas

Forest Techs shall document their contact with property owners or land managers, and organize work for tree crews on an *Activity Report* (Figure 4.3).

The *Activity Report* should identify the district in which work is to be conducted, the project number (the discrete number assigned to the district), the contractor assigned to the job and the feeder or grid number for distribution or plant locality number for transmission.

For each work location, the forest tech should note the date they inspected the site, a detailed location, the identity of the tenant or property owner (if known), the type of contact (door hanger, letter, personal visit, telephone or no contact), the crew type required to perform the work (lift, climb, flagging, mowing or other), a description of the work, and if necessary comments. Comments could include special considerations such as how to access the work, whether or not there is a dog on site, a sensitive area of the yard such as flower beds, cultural or environmental sites, or other matters.

4.2.4.7 Notify Private Landowners and Public Land Managers

Prior to any tree crew work, forest techs should attempt to contact the property owner or tenant on whose property the work will occur. Customer contact shall follow procedures outlined in Section 8.2.

Public land managers should have been consulted before this stage (see section 4.2.2.4). However, during the notification process, forest techs should followup with appropriate land managers to inform them that work is proceeding as planned, and provide an update on when crews are expected to begin work.

4.2.5 Work Assigned to Project Crews

Work assignments are the responsibility of both forest techs and supervisors/GFs.

4.2.5.1 Activity Reports and Other Pertinent Information Issued to Tree Crews.

Forest techs or supervisors/GFs should distribute completed *Activity Reports* to the tree crews.

4.2.5.2 Required Permits Issued to Tree Crews.

Appropriate permits shall be issued to tree crews. Tree crew members should have them available to produce to the appropriate authorities on demand.

4.2.5.3. Work Release and Project Specifics Communicated and Issued to Crews.

Before beginning work on a project, the tree crew should be issued the pertinent work release. Tree crews should be able to produce the work release to foresters during audits.

4.2.5.4 Sensitive Site or Area Review With Crews.

Any sensitive site locations should be communicated to tree crews.

4.2.5.5 Special Instructions

If there are any special instructions, such as working in sensitive areas, forest techs should communicate this to their tree crews in writing and ensure that tree crews have read and understand the special instructions.

Figure 4.3. PacifiCorp Vegetation Management Activity Report.

District : _____	**Cycle Maintenance**	**Interim Maintenance**	**Ticket Maintenance**	**Work Order**
Project #: _____	Trans. PL#: _____	Trans. PL#: _____	Trans. Ticket _____	W.O. #: _____ &
Inspected By: _____	Dist. F/G#: _____	Dist. F/G#: _____	Dist. Ticket _____	District CC #: _____

Date Inspect.	Detailed Location	Property Owner	Phone Number	Type of *Contact	^TGR s	Crew Type	Description of Work / Comments	Date Comp.	^Cst. Survey	Crew ID No.	Forem. Initials

*Type of Contact Legend: D-Door Hanger, L-Letter, N-None, P-Personal, T-Telephone

^TGRs and Customer Surveys: Check = yes, Blank = no

4.2.6 Project Completion

After completing work, the crew leader shall note the date it was performed and initial the location entry.

4.2.6.1 Post Inspection to Verify Completion.

Supervisors are ultimately responsible for ensuring that all work on a project is completed to PacifiCorp specifications. They should either inspect the work themselves, or delegate that inspection to the forest techs. If the work is delegated to the forest techs, supervisors/GFs still have the responsibility for ensuring the project is completed to specifications. Any exceptions to specifications for any reason must be noted on the work release (see section 4.2.1.1).

4.2.6.2 Inventory and Check in Maps

Supervisors/GFs and forest techs should collect all maps that have been distributed to tree crews and return them to the forester from whom they were initially issued. Foresters shall account for all maps originally issued, and file them appropriately.

4.2.6.3 Maps and Documentation Submitted.

Supervisors should submit maps, completed activity reports and other pertinent documentation to foresters.

4.2.6.4 Concerned Customer and Refusal Information and Dangerous Customer Forms and Information Submitted.

Forest techs and supervisors should gather information on customers that might need follow-up the next time the project is worked. Examples are customers who refuse to allow access or work, customers who express concerns about work or customers or property owners who threaten vegetation management employees. Information should be presented to the forester in writing on the customer refusal form and appropriately filed, preferably digitally.

4.2.6.5 Tree Replacement Voucher Copies Submitted.

Forest techs and supervisors should submit digitized copies of tree replacement coupons to the forester.

4.2.6.6 Hazard Forms Copied, Filed and Submitted to the Utility General Foreman.

Forms documenting facility points (Figure 2.7) that need to be corrected (broken cross arms, broken insulators, leaning or unstable poles, for example) should be submitted to the PacifiCorp district general foreman or operations manager.

4.2.6.7 Daily Logs for Project Submitted to Area Forester.

Supervisors should collect *Daily Logs* from each crew member under their direction. These should be digitized and emailed to the forester, as well as filed by the forester.

4.2.6.8 Sign Work Release.

Once they have determined that all work on a project is completed to specification, GF/supervisor should sign and date the work release. Any locations that have not been worked to specifications should be documented on the work release with an explanation of the circumstances (see section 4.2.1.1)

4.2.7 Project Closure.

Foresters are responsible for closing projects by completing the tasks in 4.2.7.1-4.2.7.3.

4.2.7.1 Verify Receipt of Maps and Other Pertinent Information.

Foresters should inventory maps and collect daily logs, tree replacement vouchers, hazard forms as well as concerned customer, dangerous customer and refusal information from the supervisor. Foresters should file this information digitally so it can be retrieved when work is conducted the next time through.

4.2.7.2 Verify Receipt of Signed Work Release.

Foresters should ensure they have received and filed a copy of the signed work release from the contractor. They should examine the comment section for any work that was not completed to specification, and if necessary, make provisions to correct those outstanding conditions.

4.2.7.3 Close Work Release

The forester should close the work release and inform the lead/senior consultant and director of vegetation management of the closure by electronic mail.

4.3 Reporting Work

After completing work, the crew leader shall document tree work on *Weekly and Daily Reports*. Note the date the work was performed, the crew ID number and the crew leader's initials.

4.3.1 Weekly Vegetation Report

Tree work shall be reported on the *Weekly Time & Vegetation Report* (Figure 4.4). The report is a combination contractor time sheet and PacifiCorp weekly production report. The back of the report provides instructions and definitions for each cell (Figure 4.5).

Most of the items on the *Weekly Report* are self explanatory. A few cells warrant clarification, (reference Figures 4.4 and 4.5).

- Item 23. General Work Location: The general location should be the approximate address. For example, the 4000 block of Dead Elm Memorial Road. Note that for audit purposes, crew leaders will be responsible to find and identify all the trees they worked over the course of a week. Consequently, more detailed information should be kept in the *Daily Report* (covered in Section 4.3.2 [Figure 4.6]).
- Items 31 and 32. Woody plants (including vines) less than 4-inches in diameter at breast height are classified as saplings. The actual square footage occupied by the above ground portion of the plant should be measured and recorded, with a 10 ft^2 maximum per plant for both pruned and removed vegetation. Note that multi-stemmed woody plants where no single stem is over 4-inches in diameter are classified as saplings, with a maximum of 10 ft^2 per plant.
- Item 37. Stump Spraying: Document the time spent treating stumps of trees that have been removed during the day. Use quarter-hour increments.
- Item 39. Side Pruning: Document trees worked that were located 10 feet or more from the center distribution line or that were outside the transmission right-of-way.
- Item 40. Crown Reductions: Document trees worked that were within 10 feet of the center

distribution line, or inside the transmission right-of-way (in the cases where trees in transmission rights-of-way are pruned).

- Item 41. Overhang Pruning: Usually trees that were off to the side of the right-of-way with limbs overhanging the distribution conductors.
- Items 43-45. To obtain the diameters of multi-stemmed trees, add the diameters at breast height of individual stems. For example, if a tree has 3 stems of 8, 4 and 3 inches in diameter, the tree would be 15 inches in diameter and reported as a 12-24 inch removal. An exception would be if no stems on the plant are over 4-inches in diameter at breast height, in which case the plant should be classified as a sapling (see items 31 and 32). If only one stem is over 4-inches in diameter and the remaining stems are less, report the diameter of that specific removal as the diameter of the single largest stem.
- Item 47 and 48. Saplings pruned and removed. Saplings are trees under 4 inches in diameter at breast height (they could also be 6-inches or less in diameter at the stump). Report area covered by the crown of the plant, with a 10 ft^2 maximum for each plant. There must be six inches of soil between stems of the same species for them to count as multiple plants.
- Items 54 and 55. For transmission cycle work, capture the number of acres cleared or sprayed respectively using linear feet.

4.3.2 Daily Report

The *Daily Report* shall be used by crew leaders to keep detailed records on their productivity (Figure 4.6). It is particularly important as a reference for locating trees during audits, and tracking chemical use. Like the *Weekly Report*, the *Daily Report* provides instructions on a cell by cell basis. The *Daily Report* is the property of PacifiCorp, and when completed, supervisors/GFs shall digitize it, and sent to the appropriate forester.

4.4 Tree Crew Audits

The primary purpose of a crew audit is quality control. Furthermore, crew audits offer an opportunity for the forester to provide tree crew leaders and their supervisors/GFs with a clear understanding of PacifiCorp's expectations.

Foresters shall audit one full week of work as many times a year as specified in their goals. All work, including transmission and pole clearing work shall be audited. Each audit should have the forester, the crew's GF/supervisor and the crew leader in the field together reviewing completed work. Audits should begin with the first tree, and progress in order to the last tree worked during the week. Over the course of the audit, the forester, supervisor/GF and crew leader should open a dialog regarding the week's results.

The audits should objectively assess quality, adherence to specifications, tree counts, herbicide and other matters. Moreover, audits should provide the tree crew leader with feedback on production, professionalism, equipment, safety and crew efficiency. Results shall be documented on a *Tree Crew Audit Report* (Figure 4.8).

4.4.1 Objective Components

Objective audit components shall be determined on the straight percentage of trees that meet expectations compared to the total trees worked in each category.

The percent score shall be averaged for the final rating.

4.4.1.1 Quality

The quality component documents crew adherence to natural target pruning as described in Section 3.1.2. Before conducting an audit, the forester and supervisor/GF should agree on a day to examine cut quality. One way would be to roll a die. In this case, 1 would indicate Monday, 2 for Tuesday and so on. Six would represent Saturday, and would require another roll until a different number turns up.

All final cuts made by the crew that day should be counted and examined for proper technique. A minimum of 20 cuts shall be inspected. If a crew did not make 20 cuts on the selected day, another day should be added until a minimum of 20 cuts have been evaluated. Note that if Friday is the selected day and 20 cuts were not made , the crew leader should alert the forester and GF/supervisor before the audit begins so another day can be added for cut quality.

Rip cuts, flush cuts and improper lateral selections violate the principles of natural target pruning, and shall be counted against the category score. Foresters should grant tree crews one grace faulty cut (the "Mulligan"). In addition, each “hanger” left in the tree will count as one improper cut per inch of the hanger’s diameter. For every two hangers under one-inch in diameter, a single cut penalty will be assessed.

4.4.1.2 Specification Adherence

The *Specification* section examines all trees worked over the course of a week, both pruned and removed. It takes a straight percentage of trees that comply with clearances specified in Chapters 5 and 6 against all those worked during the week. Brush feet sprayed may be counted as brush feet removed. In addition, if climbing spurs were used on a tree on which they were unnecessary in the judgment of the forester, the crew will be penalized for a tree out of specification.

4.4.1.3 Tree Count

The tree count section is used to validate numbers in the *Weekly Report* against those actually identified in the field on a straight percentage basis. Reported side pruned, overhang, crown reduction, secondary trees, and brush feet equivalents ($ft^2 \div 10$ of saplings pruned or removed) should be validated for discrepancies in these categories. If overall tree counts are accurate no penalty should be levied. However, the crew should be counseled about the importance of accurately categorizing tree work.

On transmission cycle work, work in the right-of-way should be reported as acres cleared. Hotspotting should also be reported as individual trees in the right-of-way. Trees outside the right-of-way may be reported as individual trees.

4.4.1.4 Herbicide

The herbicide component should compare total treated stumps and brush feet equivalents (total $ft^2 \div 10$) against those that should have been treated. It should also compare stumps and brush feet equivalents treated with herbicide against the total number reported. Deductions for over or under treatment or reporting should be made on a straight percentage basis and added together (Table 4.1). For example, if in an area where herbicide use was acceptable, a tree crew removed five deciduous trees, but only treated four stumps, they would

Figure 4.4. Weekly Time and Vegetation Report

WKLY TIME REPORT & PACIFICORP WKLY VEGETATION REPORT

1 W/E _____ State _____ Local Union # _____ Crew _____ Contract# _____

Last 4	Employee Name	Code	T	Pay Rate	Sun	Mon	Tue	Wed	Thur	Fri	Sat	ST	OT	DT	Total	HOL	VAC	Other	PAD

Explain Other Hours: PAD- Paid Absent Day

Eq Name	Equipment Number	Mileage	TOTAL	Sun	Mon	Tue	Wed	Thur	Fri	Sat

MAN HOURS	TOTAL	Sun	Mon	Tue	Wed	Thur	Fri	Sat
28 Travel & Misc.								
29 Inspection/Notification								
30 Traffic Flagging								
31 Chip/Cleanup/Dump								
32 Tree Prune								
33 Tree Removal								
34 Saplings Pruned								
35 Saplings Remove								
36 TGR								
37 Pole Clear/Treating								
38 ROW Clearing								
39 ROW Spraying								
40 Stump Spraying								
41 Total Man-Hours								

PRODUCTIVITY	TOTAL	Sun	Mon	Tue	Wed	Thur	Fri	Sat
42 # Side Pruning								
43 # Crown Reductions								
44 Over-hang pruning								
45 # Sec/Serv. Pruning								
46 # Removals 4"-11"								
47 # Removals 12"-23"								
48 # Removals 24"-Up								
49 TOTAL PRUNED/REMOVED								
50 Ft2 Saplings Pruned								
51 Ft2 Saplings Removed								
52 # Stump Appliction								
53 # Stumps Ground								
54 # TGR Application								
55 # Poles Cleared								
56 # Poles Treated								
57 # ROW Ac Cleared								
58 # ROW Ac Sprayed								
59 Ft2 Sprayed								
60 # Loads of Chips								
61 # Survey Cards								

2 District _____
3 Project _____

Crew Information

4 Crew Leader _____
5 Pacificorp # _____
6 Crew Type _____
7 Cert. Appl# _____
8 Supervisor _____

Work Activity

Local Transmission Maintenance

9 Trans Cycle (TRN) TID# _____
10 Trans Ticket (TTK) ☐ _____
11 Trans Hot-Spot (THS) TID# _____
12 Trans Chemical (TCM) TID# _____
13 Trans Inspection (TNT) TID# _____
14 Trans Pole Clear (TPL) TID# _____

Distribution Maintenance

15 Dist Cycle (DST) F/G # _____
16 Dist Ticket (DTK) ☐ _____
17 Dist Hot-Spot (DHS) F/G # _____
18 Dist Chemical (DCM) F/G # _____
19 Dist Pole Clear (DPL) F/G# _____

Main Grid Transmission Maintenance

20 MG Cycle (MGT) TID# _____
21 MG Hot-Spot (MHS) TID # _____
22 MG Chemical (MCM) TID# _____
23 MG Inspection (MGI) TID# _____
24 MG Pole Clear (MPL) TID# _____

25. District Work Order or Storm #s

PM Order # _____
26 Shop Location _____

27. General Work Location

Mon _____
Tue _____
Wed _____
Thrs _____
Fri _____
Sat _____
Sun _____

62 Crew Leader Signature _____

PAGE _____

Changes 3/4/11

Vegetation Weekly Report 3/11

Figure 4.5. PacifiCorp Weekly Time and Vegetation Management Report Instructions and Definitions.

Instruction & Definitions

1. Week Ending: The week ending date (Saturday).
2. District: The PacifiCorp district where the work occurred.
3. Project #: District identification number
4. Cr. Leader: Crew Leader's name.
5. Crew #: Three-digit crew number assigned to crew leader.
6. Crew Type: Two-character crew-type code (2-Lift, 2-Mow, 3-Lift, 3-Climb. 4-Climb, 5-Climb, F. Tech, Others)
7. Certified Appl. #: The certified applicators license number.
8. Supervisor: Crew's Supervisor's name.
9. Local Trans Cycle, TID#: Transmission line six digit Tech ID number.
10. Local Trans Ticket: Check when working transmission tickets. Tech ID number not required.
11. Local Trans Hot-Spot, TID#: Transmission line six-digit Tech ID number.
12. Local Trans Chemical: Transmission line six digit Tech ID number.
13 Local Trans Inspection: Transmission line six digit Tech ID number.
14. Local Trans Pole Clear: Transmission line six digit Tech ID number California Only
15. Dist. Cycle, F/G#: Feeder or grid number, maximum eight characters.
16. Dist. Ticket: Check when working distribution ticket. Feeder or grid numbers not required.
17. Dist. Hot-Spot, F/G#: Feeder or grid number, maximum eight characters.
18. Dist. Chem. F/G#: Chemical Cycle Maintenance: Enter Feeder/Grid #.
19. Dist. Pole Clear F/G#: Feeder or grid number. maximum eight digits. This activity is only in California.
20. Main Grid Cycle: Transmission line six digit Tech ID number
21. Main Grid Hot-Spot: Transmission line six digit Tech ID number
22. Main Grid Chemical: Transmission line six digit Tech ID number
23. Main Grid Inspection: Transmission line six digit Tech ID number
24. Main Grid Pole Clear: Transmission line six digit Tech ID number California Only
25. District Work Order or Storm Work: Plant Maintenance (PM) Order and Cost Center.
26. Shop Location: Shop location.
27. General Work Location: General work location for the day. Detailed locations are to be kept separately in the "yellow books." For audit purposes, crew leaders are responsible to find and identify all trees they worked.
28. Travel & Misc. Man-hours: Number of travel and miscellaneous (meetings, stand-by, etc.) man-hours a day.
29. Inspection/Notification: Number of inspection and notification man-hours a day. Includes facility inspection property owner notification.
30. Traffic Flagging: Number of traffic flagging man-hours a day.
31. Chip/Cleanup/Dump: Number of chipping, cleanup, and dumping man-hours a day.
32. Tree Prune: Number of man-hours a day spent pruning, including setup.
33. Tree Removal: Number of tree removal man-hours a day, including setup.
34. Saplings Pruned: Man-hours a day spent pruning saplings, including setup. Saplings are woody plants under 4" DBH (diameter at 4.5 feet above the ground) of species which have the potential to reach wire height at maturity. Report no more than 10 ft2 a plant.
35. Sapling Removed: Man-hours a day removing saplings, including setup. Saplings are woody plants under 4" DBH (diameter at 4 .5 feet above the ground) of species which have the potential to reach wire height at maturity. Report no more than 10 ft2 a plant.
36. TGR: Man-hours a day applying TGRs. including setup.
37. Pole Clear/Treating: Pole clearing man-hours a day.
38. ROW Clearing: Transmission ROW clearing man-hours a day.
39. ROW Spraying: Transmission ROW spraying man-hours a day.
40. Stump Spraying: Man-hours a day spent spraying stumps and stubble from removed saplings. Use 1/4 hour increments
41. Total Man-Hours: Total number of man-hours a day and week. Use 1/4 hour increments.
42. Side Pruning: Total trees pruned to the side of the primary conductor each day. Trunks of these trees are usually 10 feet or more off either side of the center distribution line.
43. Crown Reductions: Total trees pruned under the primary conductor(s) daily. Trunks are usually within 10 feet of either side of the center line.
44. Over-hang Pruning: Trees pruned over-hanging the primary conductor. These trees are usually to the side with removed limbs less than 10 feet above the primary.
45. Sec/Serv. Pruning: Total trees pruned each day for secondary, service, or street light where there is no primary.
46. Removals 4"-11": Total trees removed between 4"-11" DBH
47. Removals 12"-23": Total trees removed between 12"-23" DBH
48. Removals 24" and greater: Total trees removed 24" DBH and greater.
49. TOTAL PRUNED/REMOVED: Total trees pruned or removed a day and week.
50. Sq. Ft. Saplings Pruned: Square feet (length x width) of saplings pruned. Saplings are woody plants under 4" DBH (diameter at 4.5 feet above the ground) of species which have the potential to reach wire height at maturity. Report no more than 10 ft2 a plant.
51. Sq. Ft. Saplings Removed: Square feet (length x width) of saplings removed. Saplings are woody plants under 4" DBH (diameter at 4.5 feet above the ground) of species which have the potential to reach wire height at maturity. Report no more than 10 ft2 a plant.
52. Stump Application: Total trees that were stump treated with herbicides.
53. Stumps Ground: Stumps ground out.
54. TGR Application: Trees treated with Tree Growth Regulators (TGRs [])implants, soil drench, and soil injection[]).
55. Poles Cleared: Poles cleared of trees and brush. This activity is only in California.
56. Poles Treated: Poles treated with herbicides.
57. ROW Acres Cleared: Transmission ROW acres cleared of trees and saplings.
58. ROW Acres Sprayed: Transmission ROW acres where trees and saplings were treated with herbicides.
59. Sq. Ft. Sprayed: Report the square feet of undesirable vegetation sprayed.
60. Loads of Chips: Loads of chips dumped.
61 # Survey cards: Total number of survey cards distributed
62. CREW LEADER SIGNATURE: Crew leader signs the report to authenticate its accuracy.

Figure 4.6 Daily Report

PacifiCorp Vegetation Management Daily Report

Crew Leader:

Date	Feeder/Grid #, Ticket Work, Trans. TIOA, Work Order #	Detailed Location: Street Address, Pole Number, Structure Number, Mile Marker, Reference Point	# Side Prune	# Crown Reductions	# Over-hang Prune	# Sec/Serv Prune	# Brush FT Prune	# Brush FT Removed	# Removals 4'-11'	# Removals 12'-23'	# Removals 24" up	# Stump Applications	# Stumps Ground	# TGR Applications	# Poles Cleared	# Poles Treated	# ROW Acres Cleared	# ROW Acres Sprayed	# Brush FT Sprayed	Herbicide Product	# Oz. or # Gal. applied	Temperature (F)	Wind Direction	Wind Speed (MPH)	Start Time	Finish Time	Customer Survey

[illegible]Certified Applicator: _____ [illegible]Certified Applicator #: _____

[illegible]Forester _____

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Figure 4.7

PacifiCorp Vegetation Management Daily Report

Instruction and Definitions

1. **Crew Leader:** The name of the crew leader for the day.
2. **Date:** Date work was performed.
3. **Feeder/Grid #, Ticket work, Trans TID #, After Hours Trans or Dist. Storm Work, Worker Order #:** Identify the work with the appropriate number, or as ticket work.
4. **Detailed Location:** Report a detailed work location for each job site.
5. **Side Pruning:** Report the number of trees pruned to the side of the primary conductors.
6. **Crown Reductions:** Report the number of trees pruned under the primary conductors.
7. **Overhang Pruned:** Report the number of pruned overhanging the primary conductors.
8. **Sec/Service Pruned:** Report the number of trees pruned for secondary, service, or street lights where there is no primary.
9. **# Ft^2 Saplings Pruned:** Report the area of power line right-of-way where saplings were pruned. Report the area occupied by the crown of the plant(s), with no more than 10 ft2 reported for an individual plant. Saplings are defined as woody plants under 4" DBH (diameter at breast height) of species which have the potential to reach wire height at maturity.
10. **# Ft^2 Saplings Removed:** Report the area of power line right-of-way where saplings were removed. Report the area occupied by the crown of the plant(s), with no more than 10 ft2 reported for an individual plant. Saplings are defined as woody plants under 4" DBH (diameter at breast height) of species which have the potential to reach wire height at maturity.
11. **# Removals 4"-11", 12"-23", and 24" and up:** Report the number of trees removed in each size class measured 4½ feet above the ground).
12. **# Stump Applications:** Report the number of trees that were stump treated with herbicides.
13. **# Stumps Ground:** Report the number of stumps that were ground.
14. **# TGR Applications:** Report the number of trees treated with tree growth regulators.
15. **# Poles Cleared:** Report the number of poles cleared of trees and brush to bare ground.
16. **# Poles Treated:** Report the number of poles treated with herbicides.
17. **# ROW Acres Cleared:** Report the number of transmission ROW acres were cleared.
18. **# ROW Acres Spayed:** Report the number of ROW acres sprayed with herbicides.
19. **# Ft^2 Sprayed:** Report the number of square feet of right-of-way sprayed with herbicides.
20. **Loads of chips:** loads of chips dumbed that day.
21. **Herbicide Product:** Report the herbicide product used at the site. Refer to Herbicides A-F.
22. **# Oz., or # Gal. Applied:** Report the number of herbicide ounces or gallons applied at the site.
23. **Temperature (F):** Report the temperature when the herbicide application is made.
24. **Wind Direction:** Report the wind direction at the site when the herbicide application was made.
25. **Wind Speed (MPH):** Report the wind speed in miles per hour at the site when the herbicide application was made.
26. **Start Time:** Report the time when the herbicide application was started.
27. **Finish Time:** Report the time when the herbicide application was completed.
28. **Certified Applicator:** The name of the liscensed applicator.
29. **Certified Applicator #:** The number of the applicator's license.

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Figure 4.8. Tree Crew Audit Form

CREW FOREMAN: _____ **CREW:** _____ **DATE:** _____

CONTRACTOR: _____ **QUARTER:** _____ **DISTRICT:** _____

FEEDER/GRID, Trans PL: _____

	SCORE	WEIGHT	% FACTOR
QUALITY : # Cuts inspected: # Proper cuts: COMMENTS: (Laterals, flush cuts, bark rips, wounds, stubs, hangers) _____	100.0%	0.25	25%
CLEARANCE: # Trees Inspected: # Trees Spec. Clearance: # Trees non-spec. clearance: 0 COMMENTS: _____	100%	0.25	25%
TREE COUNT: # Trees reported: # Trees verified: COMMENTS: _____	100%	0.25	25%
HERBICIDE: # Trees reported: # Trees verified: Pesticide Applicators Lic. Label & MSDS Sheets (Proper Material, Application, Tools, & Knowledge): _____	100%	0.25	25%
AVERAGE RATING: Of all categories (0 to 100% adherence)	**TOTALS:**		**100.0%**

PRODUCTION: _____

PROFESSIONALISM: _____

EQUIPMENT: (Appearance, condition, operational) _____

SAFETY: ***evaluated by contractor supervisor*** - (Work techniques, traffic control, personal protective equip) _____

CREW EFFICIENCY: (Job planning, multiple tasking idle labor, clean up chip disposal) _____

SUPERVISOR: _____ **FORESTER:** _____

**Crew Personel & Equipment Composition.*

**Week ending date*

Table 4.1 Herbicide category deductions. Deductions are added together.

Penalty Description	Deduction
Failing to treat stumps or ft^2 of brush requiring treatment	Percentage of stumps or ft^2 of brush missed against the total of those requiring treatment.
Misreported stumps or ft^2 of brush	Percentage of over or under reported stumps, or ft^2 of brush against the total that were actually treated
Crew without a member holding a current applicator's license	100% (crew may be shut down at the forester's discretion).
Crew member has a current applicator's license, but does not have it on site.	10%
Missing herbicide MSDS or Label	10% for each missing document for every chemical on the truck

receive a 20% deduction ((1÷5)×100 = 20%). Moreover, if they reported only three out of the four stumps actually treated, the crew would receive an additional 25% demerit. The total deduction in this example would be 45%, and the crew's herbicide score would be 55% (assuming everything else was in order).

Moreover, foresters should apply penalties for violations of herbicide policy. Penalties include a 100% category deduction for crews without a licensed applicator (the crew may be shut down until they secure a valid license at the forester's discretion), a 10% penalty for a crew that has a valid applicator's license but does not have it on site, and a 10% penalty for each missing, but required pesticide document (MSDS and labels, for example [Table 4.1]).

Failing to report treated trees is a violation of law, in addition to not providing PacifiCorp with accurate information. Examples of trees and brush that do not require treatment include conifers that do not sprout from the stump (pines, firs, spruces, cedars and others), and stumps located in areas where herbicide use is prohibited (certain Federal jurisdictions, most municipal watersheds and private property where the owner objects to herbicide use).

4.4.2 Subjective Components

While not included in the final audit score, subjective factors such as productivity, professionalism, equipment and safety are also critical to program success. The audit process allows the forester to comment on these items.

4.4.2.1 Production

Foresters should provide the tree crew's *Statistics Report* (Figure 4.1) and a *Crew Productivity Report* from PVM for the year to date. On the *Statistics Report*, foresters should review the percentage of removals, the type of removals, the amount of nonproductive time and other factors that affect a tree crew's productivity and quality. The *Crew Productivity Report* compares the subject crew's data with the average productivity of crews working in similar areas. It enables crew members to compare their performance against that of their peers.

While productivity data is objective, valid comparisons involve subjective judgment because specific work types are

different from one another. For example, a climb crew's production results will invariably be lower than those of lift crews, ticket work will be worse than cycle work, and one cycle crew working in a vegetation-dense area will have different production from crews working in urban areas. Nevertheless, 70% of PacifiCorp's contractor performance formula is based on productivity; so, audits should stress productivity's importance to program success.

4.4.2.2 Professionalism

Since tree crews have more interaction with PacifiCorp customers than any other department, it is vitally important for tree crews to exhibit professionalism. Foresters should comment on factors such as ISA Certification, and other considerations.

4.4.2.3 Equipment

The condition of equipment relates to professionalism and productivity. Well cared for equipment and organized tool boxes are not only a positive reflection on the crew, but they also make work safer and more efficient. Foresters should comment on the appearance and functionally of equipment and organization of the bins.

4.4.2.4 Safety

Safety should be evaluated by the supervisor/GF. However, if a forester observes unreasonable safety risks or obvious safety violations (such as someone failing to wear personal protective equipment), he/she should relate their concerns to the crew, and inform that crew's GF/supervisor so that he or she may correct the situation. All crew members should know the safety requirements applicable to their positions and take responsibility for following those requirements.

4.4.2.5 Crew Efficiency

Reviewing work systematically from the first to last tree worked allows foresters and supervisors/GF to gain an impression of job planning, which is a reflection of crew efficiency. Foresters should share their impression of crew efficiency and also comment on methodology, clean up and chip disposal. Inefficient work organization may be the responsibility of the forest tech who originally lined-out the work. Trends in disorganization may require forest tech counseling.

4.4.2.6 Crew Composition

Foresters will note the number of crew members and equipment type on the crew being audited. The field notes will be compared to an itemized invoice itemization for accuracy. Foresters should also note the week ending date to help access the proper invoice.

4.5 Herbicide Crew Audit

The primary purpose of the herbicide crew audit is quality control. Audits should evaluate one full week of herbicide crew work. Each audit should have the forester, the crew's GF/supervisor and the crew leader in the field together observing completed work. Audits should begin with the first area treated, and progress in order to the last area worked during the week. Over the course of the audit, the forester, supervisor/GF and crew leader should open a dialog regarding the week's results.

Moreover, audits should provide the herbicide crew leader with feedback on production, professionalism, equipment,

Figure 4.9. Herbicide Audit Form.

Herbicide Crew Audit Form

CREW FOREMAN: _____ **Crew #** _____ **DATE:** _____

CREW/CONTRACTOR: **WEEK OF WORK AUDITED:** _____

DISTRICT: **QUARTER:**

	SCORE	WEIGHT	%FACTOR
QUALITY: # Stumps reported: _____ #Stumps treated properly: _____	100%	0.33	33%
Ft^2 brush/Acres: _____ Ft^2 brush/Acres treated properly: _____			
COMMENTS:			
COUNT: # Trees deciduous stumps: _____ # Deciduous stumps treated verified: _____	100%	0.33	33%
FT^2 saplings/Acres recorded: _____ Ft^2 saplings/Acres treated verified: _____			
COMMENTS:			
HERBICIDE: Pesticide Applicators Lic. # _____ Label & MSDS Sheets (Y/N) , _____	100%	0.33	33%
# Stumps/Acres reported _____ # Stumps acres verified _____			
Material, Tools & Knowledge: Herbicide application looked good			
AVERAGE RATING: Of all categories (0 to 100% adherence)	**TOTALS:**		**100%**
Specification Manual (yes/no) _____			
PRODUCTION:			
PROFESSIONALISM:			

safety and crew efficiency. Results shall be documented on an *Herbicide Crew Audit Report* (Figure 4.9).

4.5.1 Objective Components

Objective audit components shall be determined on the straight percentage of trees that meet expectations compared to the total trees worked in each category. The percent score shall be averaged for the final rating.

4.5.1.1 Quality

The quality section examines proper brush ft^2 treatment following specifications described in Chapter 7. Calculate the score by using percentages of proper brush or acres treated against the total number treated.

4.5.1.2 Count

To complete the *Count* section, check the number brush ft^2 or acres treated against which should have been sprayed.

4.5.1.3 Herbicide

The herbicide section is mainly for evaluating documentation. Foresters should apply penalties for violations of herbicide policy. Penalties include a 100% category deduction for crews without a licensed applicator (the crew may be shut down at the forester's discretion), a 10% penalty for a crew that has a valid applicator's license but does not have it on site, and a 10% penalty for each missing pesticide document required for chemical use (MSDS and labels, for example).

Foresters should also comment on material, proper tools and crew knowledge.

4.5.2 Subjective Components

While not included in the final audit score, subjective factors such as productivity, professionalism, equipment and safety are also critical to program success. The audit process allows the forester to comment on these items.

Failing to report herbicide treatment or not having a licensed applicator on the crew is a violation of the law.

4.5.2.1 Professionalism

Same instructions as 4.4.2.2

4.5.2.2 Equipment

Same instructions as 4.4.2.3

4.5.2.3 Safety

Same instructions as 4.4.2.4

4.5.2.4 Crew Efficiency

Same instructions as 4.4.2.5

4.5.2.5 Crew Composition

Same instructions as 4.4.2.6

4.6 Worksite Inspection

PacifiCorp has a *Worksite Inspection Form* (Figure 4.10), which is designed to check tree crew safety. Foresters are required to perform a number of worksite inspections as specified in their annual goals. Foresters may use the form during crew visits. The form provides a general review, as well as tailboard, bucket or climb setup, vehicle, herbicide and other safety provisions.

Figure 4.10. Vegetation Management Worksite Inspection Form.

PACIFICORP

VEG. MANAGEMENT WORKSITE INSPECTION FORM

Employee Name(s)

Feeder/Grid #

District

Inspection Date

Crew Leader

Work Location (Address or GPS)

Required? Yes	Required? No	General	In Use? Yes	In Use? No
☐	☐	Hard Hat	☐	☐
☐	☐	Safety Glasses/Face Shield	☐	☐
☐	☐	Hearing Protection	☐	☐
☐	☐	Hand Protection	☐	☐
☐	☐	Chaps	☐	☐
☐	☐	Appropriate Footwear	☐	☐
☐	☐	Safety Vest	☐	☐
☐	☐	Job-site Housekeeping	☐	☐
☐	☐	Proper Clothing	☐	☐
☐	☐	Whistle	☐	☐
☐	☐	Communication	☐	☐
☐	☐	First Aid Kit	☐	☐
☐	☐	Fire Extinguisher	☐	☐
☐	☐	Backpack Water Fire Sprayer	☐	☐
☐	☐	Shovel and Pulaski	☐	☐
☐	☐	Fire Wagon	☐	☐
☐	☐	Dispatch Notified	☐	☐
☐	☐	Seasonal Tools	☐	☐

Required? Yes	Required? No	Tailboard	In Use? Yes	In Use? No
☐	☐	Electric Hazard	☐	☐
☐	☐	Traffic	☐	☐
☐	☐	Parked Vehicles	☐	☐
☐	☐	Structures	☐	☐
☐	☐	Fences	☐	☐
☐	☐	Pets/Livestock	☐	☐
☐	☐	Trip Hazards	☐	☐
☐	☐	Slope	☐	☐
☐	☐	Public/Property Owner Access	☐	☐
☐	☐	Yard Ornaments	☐	☐
☐	☐	Other	☐	☐

Required? Yes	Required? No	Bucket Work	In Use? Yes	In Use? No
☐	☐	Bucket Lanyard/Harness	☐	☐
☐	☐	Minimum Separation	☐	☐
☐	☐	Wheel Chocks in Place	☐	☐
☐	☐	Clearance Over Roadway	☐	☐
☐	☐	Outrigger Placement	☐	☐
☐	☐	Hydraulic Saw Use/Storage	☐	☐
☐	☐	Chain Saw Use/Storage	☐	☐
		Climb Work		
☐	☐	Pre-Climb Inspection	☐	☐
☐	☐	Saddle	☐	☐
☐	☐	Rope	☐	☐
☐	☐	Lanyard	☐	☐
☐	☐	2-point Attachment	☐	☐
☐	☐	Proper Tie-in Position	☐	☐
☐	☐	Figure 8 knot	☐	☐
☐	☐	Carabineers/Snaps	☐	☐
☐	☐	Minimum Separation	☐	☐
☐	☐	Ladder Use/Placement	☐	☐
☐	☐	Pole Pruners Hung Safely?	☐	☐

Required? Yes	Required? No	Vehicle	In Use? Yes	In Use? No
☐	☐	Wheels Chocked	☐	☐
☐	☐	Positioning and Set-up	☐	☐
☐	☐	Loads Secure	☐	☐
☐	☐	Emergency Brake	☐	☐
☐	☐	Conned off	☐	☐
☐	☐	Signage	☐	☐
☐	☐	Chipper Use	☐	☐
☐	☐	Seatbelt Use	☐	☐

Herbicide

Required? Yes	Required? No		In Use? Yes	In Use? No
☐	☐	Labels	☐	☐
☐	☐	MSDS	☐	☐
☐	☐	Containers Labeled	☐	☐
☐	☐	Sprayers Labeled	☐	☐

Required? Yes	Required? No		In Use? Yes	In Use? No
☐	☐	Rubber Gloves	☐	☐
☐	☐	Proper Application	☐	☐
☐	☐	Wetland Product	☐	☐
☐	☐	Current Applicator's Lisc.	☐	☐

COMMENTS: _____

CREW LEADER:

FORESTER: _____

4.7 PVM

PacifiCorp Vegetation Management (PVM) is a PacifiCorp intranet-based program available at: http://pdxus033.pacificorp.com/cognos7/cgi-bin/upfcgi.exe, which organizes data downloaded from the *Weekly Report* (Figure 4.4). PVM offers a variety of reports, such as the *Statistics Report* (Figure 4.11), which enable program analysis.

The statistics reports are designed to be flexible. They allow data examination on a program level (it contains data since 1996 for Pacific Power, for example), down to a crew level for a specific week of work. They also provide cost and man-hours per tree, the percentage of various work types (tree removals, the size of trees removed, the number of side pruned trees, crown reduction and others), the percentage of time spent on travel, flagging, cleanup and other activities.

Other PVM reports compare the productivity of individual crews, or breakdown production by district, state, and work code. The reports provide objective information upon which foresters and supervisors/GFs can make sound management decisions based on objective information.

4.8 Monthly Reports

Vegetation management has monthly reports tracking distribution cycle and interim progress, distribution spray progress, tree crew deployment, cycle progress, California Pole Clearing and transmission progress reports. These reports can be found at the PacifiCorp T&D Support Services Website: http://idoc.pacificorp.us/pacificorp_organization/rmp/rmpto/rtss/vm.html. A description of three prominent reports follows.

4.8.1 Distribution Progress Report

The distribution progress report (Figure 4.12) accounts for line miles achieved on systematic distribution work compared to goals for a given year. Systematic distribution work is cycle work throughout the six state service territory, as well as interim work in the Pacific Power service territory. The goal is the recommended cycle (three or four years depending on the state) prorated by the week of the year.

The report provides a summary of line miles achieved, breaks down progress by Pacific Power and Rocky Mountain Power's service territory, includes monthly miles ahead or behind goals, a chart depicting monthly line mile progress, and progress in each state by district and where appropriate, by forester.

4.8.2 Distribution Cycle Progress Report.

The distribution cycle report records line miles achieved over the course of the current recommended cycle compared to goals (Figure 4.13). Goals are prorated monthly and compared to actual progress.

4.8.3 Tree Crew Deployment Report

The tree crew deployment report (Figure 4.14) lists tree crews, forest techs and supervisors/general foremen by forester and district as of the first of each month. In addition to providing information on tree crew locations, the tree crew deployment is used for budget projections.

Figure 4.11. A sample PVM *Statistics Report* showing distribution cycle data for Oregon 2010.

PacifiCorp Vegetation Management

Data Updated on 6/13/11 15:10:25 PM

Statistics Report

FISCAL YEAR: 2011

WORK ENDING: 01/03/2010 TO 01/01/2011 INVOICE

COMPANY NAME CREW CODE

STATE OR CREW TYPE

DISTRICT CODE DST

PROJECT WORK ID

SUPERVISOR FOREMAN

FORESTER

TRIM TOTAL	% SIDE TRIMS	%CROWN REDUCTION TRIMS	%OVERHANG TRIMS	SEC/SERV TRIMS	# BRUSH TRIMS
103,658	44.99	41.95	1.90	4,563.00	70,109

REMOVALS TOTALS	%TREE REMOVALS	#BRUSH FT REMOVED	% BRUSH FEET REMOVED	% 4 - 11 REMOVED	% 12 - 23 REMOVED	% 24+ REMOVED
90,956	46.74	772,283	84.91	12.56	2.02	0.51

TOTAL TREESBRUSH	#STUMP APPLICATIONS	#ACRES SPRAYED	#ACRES CLEARED	#TGR APPLICATIONS
194,614	6,098	0	0	668

#STUMP GROUND	#POLES CLEARED	#POLES TREATED
6	15	0

TOTAL MANHOURS	%TRAVEL/ MISC MANHOURS	%INSPECT/ NOTIFY MANHOURS	%TRAFFIC/ FLAGGING MANHOURS	%CHIP/ CLEANUP MANHOURS
147,737	7.66	13.09	9.73	41.35

%TRIM MANHOURS	%REMOVAL MANHOURS	%TGR MANHOURS	%POLE CLEARING MANHOURS	%ROW CLEARING MANHOURS	% SPRAYING MANHOURS	%STUMP TREAT MANHOURS
22.42	3.64	0.17	0.00	0.00	0.00	0.28

TOTAL COST	TOTAL $/TREE	TRIMMING $/TRIM	REMOVAL $/REMV
$7,797,560	$40.07	$63.34	$11.73

TOTAL MH/TREE	TRIMMING MH/TRIM	REMOVAL MH/REMV	TRIM MH/10FT2 SAPPRUN	REMV MH/ 10FT2 SAPREM
0.76	1.20	0.22	0.06	0.03

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Figure 4.12 Monthly Distribution Progress Report

PACIFICORP VEGETATION MANAGEMENT 2011 DISTRIBUTION PROGRESS REPORT

Summary

Through Dec 3, 2011

CYCLE WORK						INTERIM WORK			
	Total Line Miles	Total Miles Scheduled	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)	Total Miles Scheduled	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)
	43,047	12,182	10,058	11,244	-1,186	4,908	4,001	4,530	-529
State									
California	2,323	581	569	536	33	581	457	536	-79
Idaho	4,358	1,453	1,135	1,341	-206	0	0	0	0
Oregon	14,184	3,655	2,111	3,373	-1,263	3,438	2,675	3,173	-498
Utah	11,377	3,792	3,528	3,501	27	0	0	0	0
Washington	3,557	889	591	821	-230	889	870	821	49
Wyoming	7,248	1,812	2,125	1,673	452	0	0	0	0
Total	43,047	12,182	10,058	11,244	-1,186	4,908	4,001	4,530	-529

SUMMARY OF SYSTEMATIC WORK* BY FORESTER

	Total Line Miles	Total Miles Scheduled	*Line Miles Completed	*Line Mile Completed Goal	Miles Ahead/(Behind)
	43,047	16,200	14,059	15,774	-1,715
Forester		*	*	*	*
Hooley	2,830	1,415	868	1,306	-438
Evans	6,030	2,010	1,690	1,855	-166
Jones	2,351	784	931	723	208
Partridge	3,919	1,960	1,135	1,809	-674
Phillips	5,823	2,912	2,368	2,688	-320
Vanderhoof	14,602	4,263	4,167	3,935	232
Armstrong	7,492	2,857	2,900	3,458	-558
Total	43,047	16,200	14,059	15,774	-1,715

*Combines cycle and interim work.

Weeks 48

Figure 4.13. Cycle Progress Report.

PACIFICORP VEGETATION MANAGEMENT 2011 CYCLE DISTRIBUTION PROGRESS REPORT

Pacific Power - Rocky Mountain Power

Through December 3, 2011

	CYCLE WORK				INTERIM WORK			COMBINED		
	Total Line Miles	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)
	43,047	20,653	23,826	-3,173	14,840	16,887	-2,047	35,493	40,713	-5,220
Pacific										0
California	2,323	1,529	1,698	-169	1,602	1,698	-96	3,131	3,395	-264
Oregon	14,184	11,043	13,905	-2,862	11,661	13,480	-1,819	22,704	27,385	-4,681
Washington	3,557	1,293	1,710	-417	1,577	1,710	-133	2,870	3,420	-550
Total	20,064	13,865	17,312	-3,447	14,840	16,887	-2,047	28,705	34,200	-5,494
Rocky Mt										
Idaho	4,358	1,135	1,341	-206			0	1,135	1,341	-206
Utah	11,377	3,528	3,500	28			0	3,528	3,500	28
Wyoming	7,248	2,125	1,672	453			0	2,125	1,672	453
Total	22,983	6,788	6,514	274	0	0	0	6,788	6,514	274

SUMMARY OF SYSTEMATIC WORK* BY FORESTER					INTERIM WORK			COMBINED		
	Total Line Miles	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)
	43,047	20,653	23,826	-3,173	14,840	16,887	-2,047	35,493	40,713	-5,220
Forester/Pacific		*	*	*						
Hooley	2,830	1,578	2,776	-1,197	2,362	2,776	-414	3,940	5,551	-1,611
Partridge	3,919	2,861	3,770	-909	2808	3770	-962	5,669	7,541	-1,871
Phillips	5,823	4,655	5,203	-548	4,742	5,203	-461	9,397	10,407	-1,010
Armstrong	7,492	4,771	5,563	-792	4,928	5,138	-210	9,699	10,701	-1,002
Total	20,064	13,865	17,312	-3,447	14,840	16,887	-2,047	28,705	34,200	-5,494
Forester/Rocky Mt										
Evans	6,030	1,690	1,855	-166			0			0
Jones	2,351	931	723	208			0			0
Vanderhoof	14,602	4,167	3,935	232			0			0
Total	22,983	6,788	6,514	274	0	0	0	0		0

Figure 4.14. Monthly Tree Crew Deployment Report.

PacifiCorp Vegetation Management

Monthly Crew Report: Summary

Date: 12/1/2011

State	Distribution & Local Trans													Main Grid Trans							Total Crews
	2 Man Lift	3 Man Lift	3 Man Climb	4 Man Climb	3 Man Skidder	2 Man Mow	2 Man Slash	2 Man Pole Clear	1 Man Chem	2 Man Flagger	For. Tech	Billed Super	Sub Total	3 Man Climb	3 Man Skidder	2 Man Slash	2 Man Pole Clear	1 Man Chem	Forest Tech	Sub Total	
California	5.0	1.0	3.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	3.0	2.75	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0
Idaho	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.00	5.0	1.0	0.0	0.0	0.0	0.0	0.3	1.0	6.0
Oregon	30.0	12.0	6.0	0.0	0.0	0.0	0.0	0.0	0.5	6.5	12.5	8.25	55.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	57.0
Utah	27.0	2.0	38.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	13.0	10.50	73.0	4.0	0.0	0.0	0.0	0.0	2.0	4.0	77.0
Washington	5.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	2.0	1.5	2.00	10.0	2.0	0.0	0.0	0.0	0.0	0.5	2.0	12.0
Wyoming	5.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.50	8.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	8.0
TOTAL	77	17.0	49.0	0.0	0	0	0	2	13	8.5	32.3	26.00	166.0	9.0	0.0	0.0	0.0	0.0	3.3	9.0	175.0

Forester	Distribution & Local Trans													Main Grid Trans							Total Crews
	2 Man Lift	3 Man Lift	3 Man Climb	4 Man Climb	3 Man Skidder	2 Man Mow	2 Man Slash	2 Man Pole Clear	1 Man Chem	2 Man Flagger	For. Tech.	Billed Super	Crew Sub-Total	3 Man Climb	3 Man Skidder	2 Man Slash	2 Man Pole Clear	1 Man Chem	Forest Tech	Sub Total	
Hooley	5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	2.0	2.00	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Evans	9.0	1.0	8.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	6.0	3.00	20.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	22.0
Jones	11.0	1.0	20.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	5.0	4.00	35.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	35.0
Partridge	12.0	7.0	5.0	0.0	0.0	0.0	0.0	0.0	2.5	3.0	5.5	3.50	29.5	2.0	0.0	0.0	0.0	0.0	0.0	2.0	31.5
Phillips	15.0	1.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	1.0	7.0	5.00	25.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	25.0
Vanderhoof	17.0	1.0	12.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	4.3	6.00	31.0	3.0	0.0	0.0	0.0	0.0	1.8	3.0	34.0
Armstrong	8.0	1.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	3.0	2.5	2.50	14.0	2.0	0.0	0.0	0.0	0.0	0.5	2.0	16.0
TOTAL	77.0	17.0	49.0	0.0	0.0	0.0	0.0	2.0	12.5	8.5	32.3	26.00	166.0	9.0	0.0	0.0	0.0	0.0	4.3	9.0	175.0

5 DISTRIBUTION SPECIFICATIONS

Distribution lines are overhead facilities that are energized less than 46 kV. Distribution primary voltage ranges from 600 to 45,000 volts, while lines energized below 600 volts are secondary.

5.1 Distribution New Construction Clearing

Every effort should be made by the Company not to build new line over or through trees that will need to be cleared from the facilities in the future. New distribution rights-of-way should be cleared to specification before the lines are energized. Initial clearing is very important because it sets a pattern for future work.

5.2 Distribution Cycle Maintenance

Trees and vegetation should be cleared from distribution facilities on scheduled cycles. Cycle work is methodical, and facilities shall be worked systematically, either by feeder or grid map. Cycles should be based on considerations such as the time elapsed since the last scheduled work, the type of facilities, tree conditions, the number of customer complaints, the growth rate and density of predominant tree species, geography, the frequency of tree-caused outages, customer count, the existence of important accounts (hospitals, factories, mines or other facilities) whether the area is rural or urban, single or multiple phase wires and other factors. Trees and vegetation should be cleared from distribution facilities to last until the next scheduled cycle work.

The intent of the cycle program is to:

- Systematically obtain specification clearance and maintain compliance with state regulatory rules, laws or regulations.
- Remove trees to reduce inventories, provide clearance, or improve access to facilities. This includes removing non-landscape trees 6-inch DBH or less, after providing the property owner notification (following Section 8.2).
- Identify and correct readily climbable trees.
- Identify and remove tree houses built inside of criteria specified in Table 2.1.
- On insulated secondaries or services, prune stems that are causing strain to the point of deflection (Figure 5.4) or that are abrading the insulation to the extent they could cause an outage before the next scheduled cycle. If pruning or removal is not practical, arrangements should be made with operations to re-route facilities or have suitable material or devices installed to avoid insulation damage by abrasion.
- Identifying and removing hazard trees that could fall through facilities.
- Apply herbicide to saplings (< 4” DBH) of tall-growing species after property owner notification (presuming the property owner has not expressed objection to herbicide application).
- Apply tree growth regulators (TGR’s) to fast-growing tree species after providing property owner notification.

5.3 Distribution Interim Maintenance

In some cases, fast-growing trees will not hold for an entire scheduled cycle. On the Pacific Power system, resulting tree conditions on a feeder or grid should be corrected systematically in

the interim half way through the scheduled cycle.

Interim work should be restricted to critical conditions, including:

- Hazard trees.
- Trees interfering with primary or open-wire secondary conductors, or trees violating specific state regulatory agency regulations.
- Trees with clearances that will violate specific regulatory or other governmental agency tree regulations before the next scheduled work.
- Readily climbable trees.
- Identifying and removing tree houses built inside of criteria specified in Table 2.1.
- On insulated secondaries or services, prune stems that are causing strain to the point of deflection (Figure 5.4) or that are abrading the insulation to the extent they could cause an outage before the next scheduled cycle. If pruning or removal is not practical, arrange with operations to have suitable material or devices to avoid insulation damage by abrasion.
- All work should be completed to company specifications. Non-critical conditions should be monitored until the next scheduled maintenance cycle work.

5.4 Distribution Ticket Maintenance

Customers, district operations staff, governmental bodies, regulatory agencies or others often alert vegetation management to real or perceived conflicts between trees and power lines. The intent of ticket maintenance is to determine whether or not the reported conditions present unreasonable safety or electrical service risks, and if they do, correct them.

Emergency situations should be corrected within 24 hours. Critical conditions reported by regulatory agencies and other urgent situations should be inspected within 48 hours and corrected within 7 days. Other tickets should be inspected within 10 business days from the date of request, and a determination made regarding whether or not the reported condition warrants work.

The concerned party shall be contacted regarding the inspection determination. This contact may be face to face if the customer is present, or by door hanger, letter, or telephone if they are not present.

Ticket work should be limited to critical conditions, including:

- Trees representing an unreasonable safety risk as determined by the responsible forest tech.
- Trees that have caused an outage.
- Trees violating specific state regulatory regulations.
- Limbs that are deflecting secondary conductors to the extent they present a high probability of tearing down the wire before the next scheduled work.
- Trees that are likely to start a fire.
- Readily climbable trees.
- Trees where the property owner requires clearance so non-utility line clearance workers may work the tree. This work complies with various state line safety acts.

All work should be completed to Company specifications. Non-critical conditions should be monitored when the next scheduled maintenance cycle work is lined out, and worked if necessary.

5.5 Distribution Clearance Specifications

Removals are encouraged. When trees are pruned, branches should be cut to natural targets rather than predetermined clearance limits (following section 3.3). Consequently, the clearances

in this specification should not be used as strict boundaries requiring cuts at the precise distances indicated. Rather, they are guidelines to use in obtaining proper clearances. Accurate natural target pruning is the overriding principal, with tree structure dictating appropriate cut locations. In many cases, the best targets are outside established clearance limits. So, many properly pruned trees will have more than specified clearance from conductors.

The type of facility and tree growth rate determine distribution clearance. Trees should be removed or pruned to provide for specification clearances as described in Figures 5.1, 5.2 and 5.3 and Table 5.1. The figures and table provide work thresholds and specification clearances for slow, medium and fast-growing trees. Trees that exceed work threshold distances should hold until the next scheduled work and not be pruned. However, these trees should still be considered to be removal candidates. <u>If trees violate pruning thresholds, they shall be removed or pruned to provide specification clearances</u>.

5.5.1 Growth Rate Definitions

Slow-growing trees grow less than one-foot a year. Moderate growing trees grow between one and three feet a year and fast-growing trees grow more than three feet a year.

5.5.2 Side Clearance

Side clearances work thresholds and side clearances can be found in Table 5.1. Work thresholds for trees growing adjacent to primary conductors are four feet for slow (Figure 5.1), six feet for moderate (Figure 5.2) and eight feet for fast-growing trees (Figure 5.3).

Specification side clearance is at least eight feet for slow (Figure 5.1), ten feet for moderate (Figure 5.2) and twelve feet for fast-growing trees (Figure 5.3).

Side clearances may be reduced to three feet for structurally sound limbs greater than 6 inches in diameter at wire height, provided the tree is not readily climbable. Hazard trees should be removed or pruned to reduce the safety risk.

5.5.3 Under Clearance

Under clearances work thresholds and side clearances can be found in Table 5.1. On trees growing under conductors, work thresholds are six feet for slow (Figure 5.1), eight feet for moderate (Figure 5.2) and ten feet for fast-growing trees (Figure 5.3). Specification clearance is at least ten feet for slow-growing trees (Figure 5.1), twelve feet for moderate growing trees (Figure 5.2) and fourteen feet for fast-growing trees (Figure 5.3).

5.5.4 Overhang Clearance

Trees overhanging primary conductors should be removed or pruned to provide at least ten feet of clearance (Figures 5.1, 5.2 and 5.3). Increased or even complete overhang clearance should be considered by the forester or GF/supervisor under the following types of circumstances: three-phase lines, rural or difficult to access areas, weak wooded or fast-growing tree species, weak structure and foreseeable weather conditions such as high wind, heavy rains, ice and snow. Dead wood that could fall or be blown into the primary conductors shall be removed. In some cases, such as three phase lines or remote areas, all overhanging branches may be removed.

Figure 5.1. PacifiCorp Vegetation Management
Distribution Primary Clearances

Slow Growing Trees

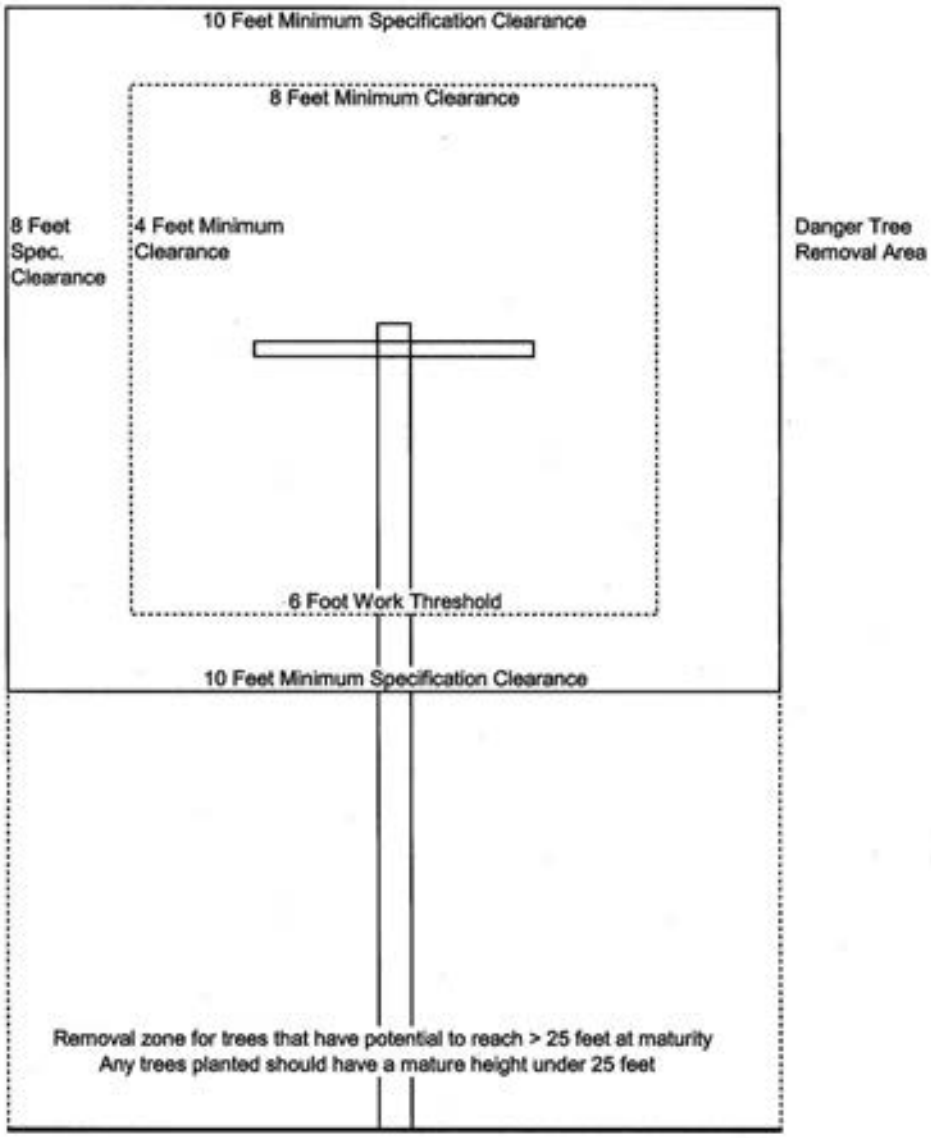
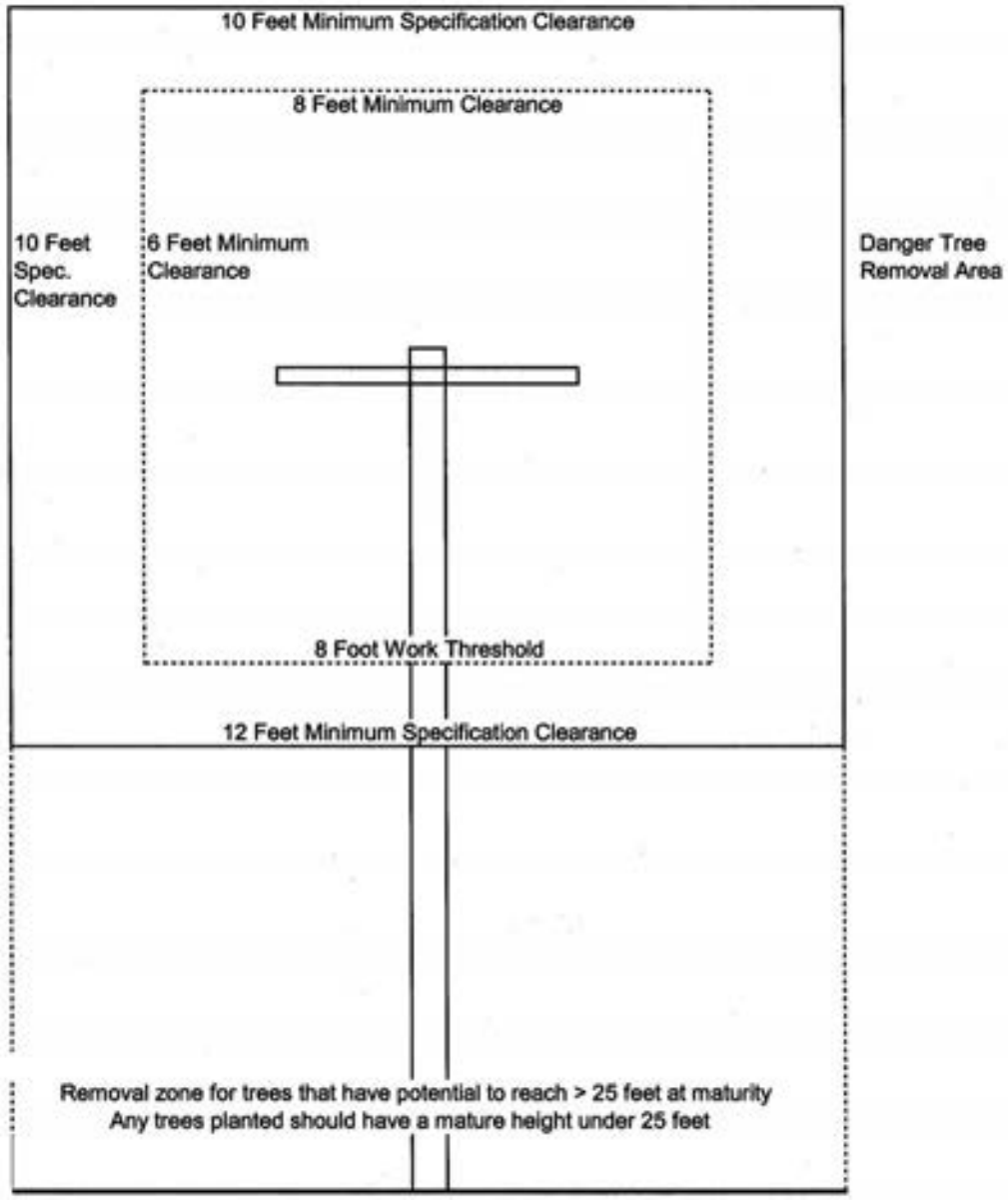


Figure 5.2: PacifiCorp Vegetation Management Distribution Primary Clearances

Moderate Growing Trees



Fgure 5.3: PacifiCorp Vegetation Management Distribution Primary Clearances

Fast Growing Trees

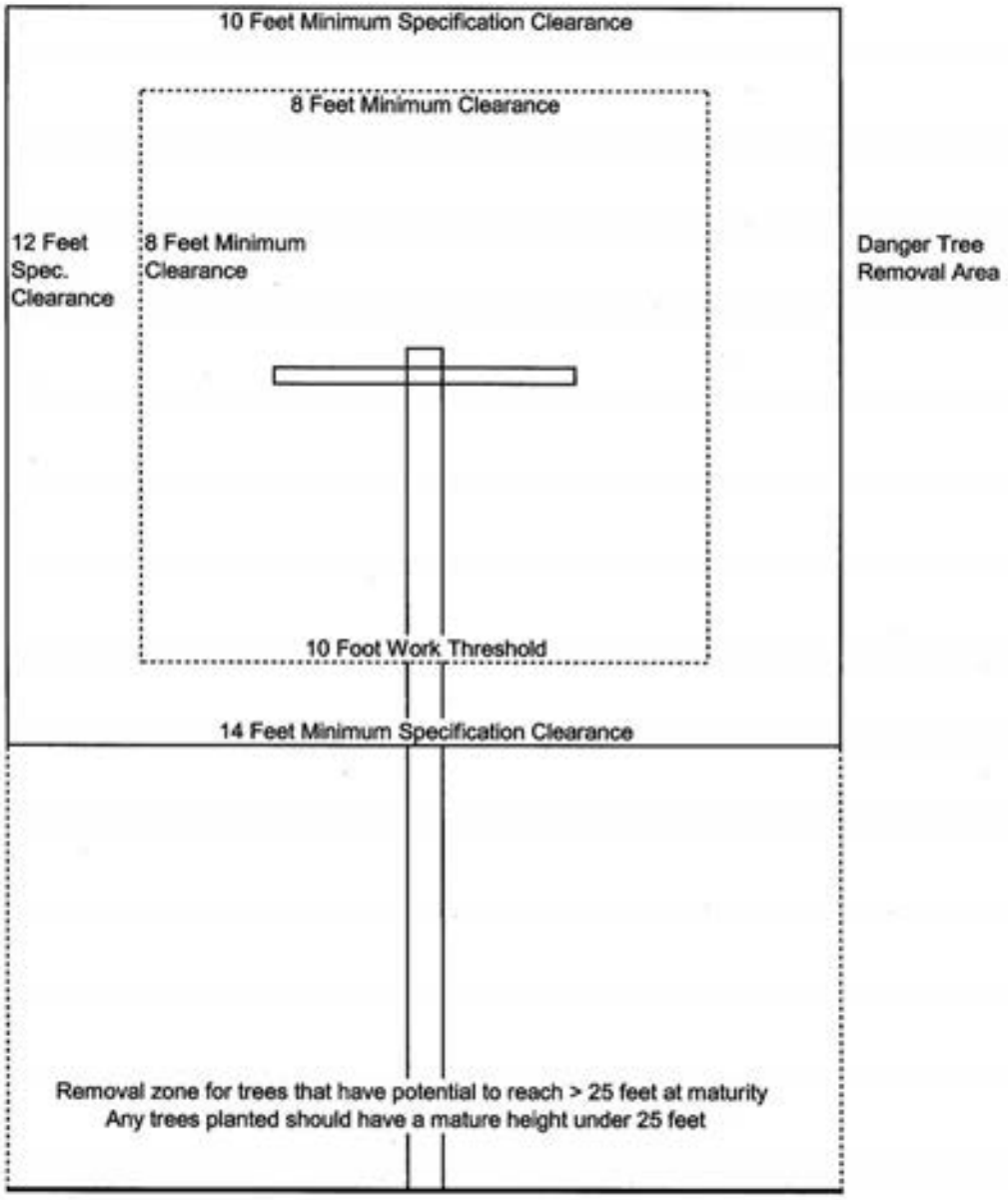


TABLE 5.1: DISTRIBUTION PRIMARY CLEARANCES

Slow-growing Trees (< 1 ft/yr)	Work Threshold	Specification Clearance
Side Clearance	4 feet	8 feet
Under Clearance	6 feet	10 feet
Overhang Clearance	8 feet	10 feet
Moderate Growing Trees (1-3 ft/yr)		
Side Clearance	6 feet	10 feet
Under Clearance	8 feet	12 feet
Overhang Clearance	8 feet	10 feet
Fast-growing Trees (> 3 ft/yr)		
Side Clearance	8 feet	12 feet
Under Clearance	10 feet	14 feet
Overhang Clearance	8 feet	10 feet

*Note: Trees with clearances that exceed the pruning threshold should not require cutting, provided they will not interfere with the primary conductors or violate state tree clearance requirements before the next scheduled work.

Table 5.2. Non-primary wire clearances.

Line Type	Work Threshold	Specification Clearance
Triplex service	Deflection/abrasion	Relieve pressure
Triplex pole-to-pole secondary/streetlight wire	Deflection/abrasion	2-feet
Non-insulated wire service/street light wire	Contact	1-foot
Non-insulated wire pole-to-pole secondary	Contact	3-feet
Neutral low condition	Contact	2-feet
Neutral on cross arm	Primary as in Table 5.1	Primary as in Table 5.1
Guy wire	2-inch or greater diameter limb applying pressure, threatened by hazard tree	Relieve pressure or remove hazard tree

5.5.5 Neutral and Insulated Pole-to-Pole Secondary Clearance

During cycle work, trees should be maintained to provide at least two feet of clearance around insulated pole-to-pole secondary and neutral conductors (Table 5.2). Tree limbs should not be allowed to remain between primary and neutral or insulated secondary conductors. Neutral conductors in a raised (primary) position should be provided secondary clearance distances during ticket or interim work, and primary specification clearance distances during cycle work.

5.5.6 Non-Insulated Open/Spaced Secondary Clearances

Trees growing around non-insulated open/spaced secondary conductors shall be pruned on cycle to provide a minimum of three-feet of clearance (Table 5.2). During cycle work, trees shall be cleared from the space between primary and non-insulated open/spaced secondary conductors. Side clearances may be reduced to one foot for structurally sound limbs greater than 6-inches in diameter at wire height.

5.5.7 Insulated Service and Insulated Street Light Line Clearances

Stems that are causing strain to the point of deflection (Figure 5.4) or that are abrading the insulation to the extent they could cause an outage before the next scheduled cycle should be pruned to relieve the pressure (Table 5.2). If pruning or removal is not practical, arrange with operations to have the facility re-routed or have suitable material or devices installed to avoid insulation damage by abrasion.

If the customer desires to remove other limbs or trees around these lines, they must arrange for a temporary disconnection to allow the desired work to be done safely. PacifiCorp does not clear trees for street light illumination, unless required to by specific language in a franchise agreements.

5.5.8 Non-insulated Service Line and Non-Insulated Street Light Line Clearances

Trees should be pruned to provide at least one-foot of clearance around non-insulated service and street light lines (Table 5.2). If the customer desires to remove other limbs or trees around these lines, forest techs or crew leaders should inform the customer to call the customer service line to arrange for a temporary disconnection of the facilities to allow safe completion the desired tree work, as required by law.

5.5.9 Other Facility Clearances

5.5.9.1 Guy Wires.

Trees or branches two-inches or more in diameter applying direct pressure to or threatening to fall on or through poles or guy wires shall be removed or pruned (Table 5.2).

5.5.9.2 Poles.

One-third of the circumference around poles shall be cleared of vegetation to a distance of 5-feet to allow linemen a clear climbing path.

5.5.9.2.1 Vines

Vines shall be removed from poles and guys, cut at ground level, and treated with an approved herbicide (see Section 7.3). They shall be reported as brush or tree removed (depending on stem diameter). Vines clearly part of a landscape and rooted well away from the pole may be pruned and reported as

Figure 5.4. Trees with branches applying sufficient pressure to cause damage to insulated service and street light lines should be pruned on cycle to relieve the pressure.

crown reductions. Vines shall be pulled off the bottom 5-feet of poles after they have been cut. The facility point shall be documented by the tree crew and given to their supervisor/GF, who shall report it to operations to clear the remainder of the pole, and arrangements made with PacifiCorp journeymen linemen for the job.

5.5.9.3 Telecom and Private Electrical Lines

Trees should not be pruned or removed expressly to provide clearance for television cable, telephone lines or private electrical facilities unless authorized by the area forester.

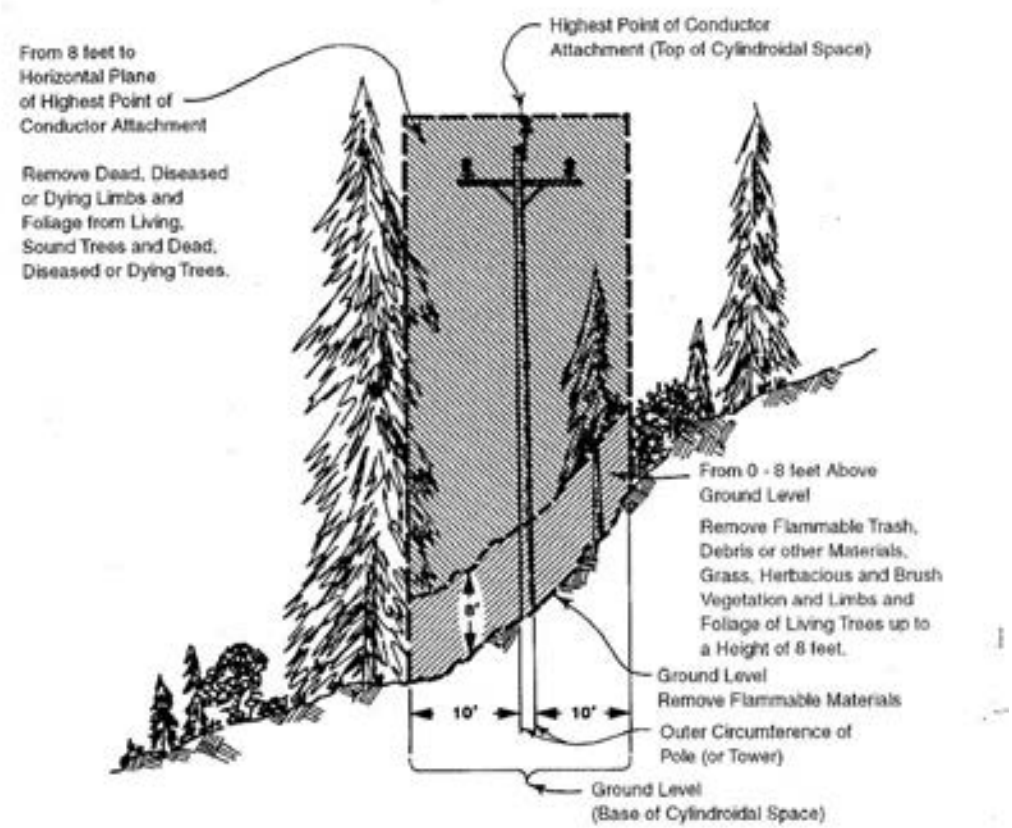
5.5.9.4 Street Light Illumination

Moreover, trees shall not be pruned to improve streetlight illumination, unless required by specific language in a franchise agreement.

5.6 Pole Clearing.

California Resource Code 4292, requires a ten-foot radius cylinder of clear space from pole top to bare ground around "subject" poles in delineated resource areas during designated fire

Figure 5.5. California pole clearing requirements (from Nichols et al. 1995).



season. Trees or saplings with trunks within clearance zone should have eight feet of vertical clearance from the ground to the highest limb (Figure 5.5).

Subject poles have fuses, air switches, clamps or other devices that could create sparks and start fires (Nichols et al. 1995). This cleared space should be established and maintained by pruning and removing above ground branches and plant parts. After removing vegetation to bare ground for a 10-foot radius around subject poles, herbicides, including soil sterilants, should be applied.

6. TRANSMISSION VEGETATION MANAGEMENT PLAN (SPECIFICATIONS)

Transmission facilities are overhead lines energized to greater than 45 kV. Typical transmission voltages on PacifiCorp's system are 46 kV, 69 kV, 115 kV, 138 kV, 161 kV, 230 kV, 345 kV and 500 kV. Facility voltage and type determine the amount of transmission clearance needed. Table 6.1 provides specification clearances for transmission rights-of-way.

Transmission work shall comply with the ANSI A300 Part 7: *American National Standard for Tree Care Operations (Integrated Vegetation Management a Electric Utility Rights-of-way* [ANSI 2006]) and the ISA *Best Management Practice: Integrated Vegetation Management for Electric Utility Rights-of-way* (Miller 2007).

Transmission work on lines at or above 200 kV and those designated by the Western Electricity Coordinating Council as an element of the major transfer path in the bulk electric system shall also conform to the North American Electric Reliability Corporation's (NERC) Reliability Standard FAC-003-01 (Effective 2006) along with other chapters in this manual.

6.1 Work Objective

The objective of systematic transmission work is to improve the reliability of PacifiCorp's transmission system by preventing outages from vegetation located on transmission rights-of-way and minimizing outages from vegetation located adjacent to the right-of-way.

6.2 Philosophy

PacifiCorp's vegetation management philosophy for transmission lines is to utilize integrated vegetation management best practices to conduct cover type conversion and to cultivate stable, low-growing plant communities comprised of plants that will never interfere with transmission lines in their lifetime.

Reliability and safety are most effectively protected through establishing and maintaining a right-of-way consistent with the wire-border zone concept (Figures 6.4a and 6.4b). When the line is less than 50 feet off the ground, the wire-border zone should be cleared of all incompatible vegetation unless an easement fails to provide authority or there are legal impediments from doing so.

6.3 Initial Clearing and Construction

Newly constructed transmission lines should be cleared to this specification prior to being energized.

6.4 Inspection

Transmission lines falling under the auspices of FAC-003-01 should be inspected at least once a year by ground or air, depending on the anticipated growth of vegetation and any other environmental or operational factors that could affect the relationship of vegetation to the transmission lines.

Line Patrolmen have responsibility for inspecting transmission lines subject to FAC-003-01 and reporting conditions to vegetation management. In addition, each area forester shall meet twice each year to discuss vegetation conditions with

the line patrolman with mutual geographic responsibilities.

Line Patrolmen encountering a tree that poses an imminent threat of a transmission outage shall follow procedures in PacifiCorp Operating Procedure PCC-215, in order to comply with Requirement R1.5 of NERC Standard FAC-003-01 (*Transmission Vegetation Management Program.* Line patrolmen must:

- Immediately notify the grid operator by phone and describe the nature and extent of the threat.
- Complete and process the Emergency Tree Action Form.
- Communicate the vegetation conditions to vegetation management for urgent attention.

Examples of an imminent threat include (but are not limited to) trees that violate or are pose a risk within 72 hours of violating NERC Clearance 2, uprooted trees that are leaning toward the line and pose a risk of immediate failure and trees that structural failures so they may break in part or whole onto the transmission facilities.

6.4.1 Additional Inspection

Foresters should annually select lines among those over 200 kV and those designated by the Western Electricity Coordinating Council as elements of the major transfer path in the bulk electric system for annual inspection in addition to that performed by line patrolmen. These inspections are to supplement, rather than substitute for, those conducted by line patrolmen. Foresters should assign representatives to complete these inspections.

Such inspection should identify trees that pose an imminent hazard, and trees that will violate NERC Clearance 2 distances within the next year. Locations should be noted on an activity report, and assigned to a tree crew for work, with the appropriate forester's approval. If the inspections discover an imminent threat, forest techs shall contact the appropriate forester within three hours. Foresters shall immediately request the appropriate line patrolman to inspect the line according to the imminent threat procedure described in section 6.4.

6.5 Work Plan

The Vegetation Management A300 standard (ANSI 2006) and the ISA integrated vegetation management best management practice (Miller 2007) recommends against cycle-based transmission work thresholds. Rather, work should be scheduled depending on line voltage, line importance, vegetation conditions that violate the action thresholds in Table 6.1, location, predominant species' growth rates, threatened and endangered species, archeological sites, topography and other factors.

A comprehensive approach that exercises the full extent of legal rights is superior to incremental management in the long term because it reduces overall encroachments, and it ensures that future planned work is sufficient at all locations on the right-of-way Removal is superior to pruning. Removal minimizes the possibility of conflicts between energized conductors and vegetation.

6.5.1 Annual Work Plan

PacifiCorp performs vegetation management work in accordance with annual work plans that details the circuits and facilities to be managed during a calendar year. Plans should include:

- A list of facilities subject to scheduled work.

- If only a portion of a line is scheduled, the line segment must be identified.
- Dates when work is anticipated to start and end on each project (Gantt charts are recommended).
- A description of the type of control methods, (cycle, herbicide, mowing, aerial etc.)

6.5.1.2 Annual Work Plan Adjustments

The annual work plan may be adjusted during the year to account for changes in conditions that require a circuit, line segment or project to be moved into or out of the work plan. Examples of reasons for adjustments include, but are not limited to, vegetation growth in excess of anticipated levels, vegetation inspection results, new construction projects or removal of existing facilities. Adjustments to the annual work plan shall be documented as they occur.

6.6 Clearances

6.6.1 NERC Clearances

The NERC Vegetation Management Standard FAC-003-01 has two clearance requirements: Clearance 1 and Clearance 2.

6.6.1.1 NERC Clearance 1

NERC Clearance 1 represents minimum clearances to be achieved at the time of work (Table 6.1). These distances should be increased, depending upon local conditions and the expected time frame to return for future vegetation management work. Local conditions may include appropriate vegetation management techniques, fire risk, reasonably anticipated tree and conductor movement, species types and growth rates, species failure characteristics, local climate and rainfall patterns, line terrain and elevation, location of the vegetation within the span, worker approach distance requirements and other factors.

6.6.1.2 Clearance 2

NERC Clearance 2 represents radial distances from the lines inside of which trees should not encroach (Table 6.1) Trees that violate NERC Clearance 2 shall be corrected within 24 hours of their identification following PacifiCorp SOP-013, *Transmission Grid Operations Operating Procedure PCC-215.*

6.6.1.3 Action Thresholds

The action thresholds in Table 6.1 provide roughly ten-foot buffers from NERC Clearance 2. Trees identified within the action thresholds should be scheduled for work within twelve months.

6.6.2 Side Clearance in Transmission Rights-of-Way

Specification side clearances are presented in Table 6.1. Consider potential sway of conductors in foreseeable high wind, particularly mid span, where clearances could need to be increased at mid span to accommodate conductor sag and swing in high temperature and winds.

6.6.3 Structure Clearances

Trees and brush should be cleared within a twenty-five foot radius of transmission "H" or metal structures, a ten-foot radius of single pole construction and a five-foot radius of guy anchors. Clearing activities shall not damage poles, structures, guys or anchors.

6.7 Integrated Vegetation Management

The purpose of vegetation management on utility rights-of-way is to

Table 6.1. Transmission clearance requirements (in feet).

	500 kV	345 kV	230 kV	161 kV	138 kV	115 kV	69 kV	45 kV
Maximum Flash Distances (NERC Clearance 2)	14.8	9.5	5.2	3.5	3.0	2.5	1.3	N/A
Action thresholds	25	20	15	13.5	13	12.5	11.5	5
*Minimum under & side clearances following work (NERC Clearance 1)	50	40	30	25	25	25	25	20

Clearance 2 represents minimum clearances that should be maintained at all times, considering the effects of ambient temperature on conductor sag under maximum design loading, and the effects of wind velocities on conductor sway. They follow table 5 in IEEE 516-2003 as specified in FAC-003-01

Action thresholds indicate work should be scheduled within the next year. They are roughly IEE

Clearance 1 represents minimum clearance following work.

establish sustainable plant communities that are compatible with the electric facilities. Stable, low-growing plant ecotypes are compatible with conductors encourage and promote diversity, and the establishment of a sustainable supply of forage, escape and nesting cover, movement corridors for wildlife, reduced fire risk, and more open access to the line (Yanner and Hutnik 2004). Establishing native vegetation will also reduce the invasion of noxious weeds into the corridor (BPA 2000).

6.7.1 IVM Control Methods

Control methods are the processes used to achieve objectives. Many cases call for a combination of methods. There are a variety of controls from which to choose, including manual, mechanical, chemical, biological, and cultural options (Miller 2007). Ground disturbance shall be minimized on all rights-of-way.

6.7.1.1 Manual Control Methods

Manual methods involve workers using hand-carried tools, including chainsaws, handsaws, pruning shears and other devices to control incompatible vegetation. Manual techniques are selective and can be used where others may not be appropriate, including urban or developed areas, environmentally sensitive locations (such as wetlands or places inhabited by sensitive species), in the vicinity of archeological sites and on steep terrain.

6.7.1.2 Mechanical Control Methods

Machines are used for mechanical control. They are efficient and cost effective, particularly for clearing dense vegetation during initial establishment, or

reclaiming neglected or overgrown rights-of-way. On the other hand, mechanical control methods can be non-selective and disturb sensitive sites, such as wetlands, archeologically rich localities or developed areas. At times, machines leave behind petroleum products, leaks and spills from normal operation. Furthermore, heavy equipment can be risky to use on steep terrain, where they may be unstable.

6.7.1.3 Chemical Control Methods

Tree growth regulators and herbicides must be used according to directives on their labels. Applicators are not only required to comply with label instructions, but also all other laws and regulations pertaining to tree growth regulator and herbicide use (see Chapter 7).

6.7.1.3.1 Tree Growth Regulators

Tree growth regulators (TGRs) are designed to reduce growth rates by interfering with natural plant processes. TGRs can be used to slow fast-growing trees, and be helpful where removals are prohibited or impractical.

6.7.1.3.2 Herbicides

Herbicides control plants by interfering with specific botanical biochemical pathways. There are a variety of herbicides, each of which behaves differently in the environment and in their affects on plants, depending on the formulation and characteristics of the active ingredient. While appropriate herbicide use reduces the need for future intervention, if misused they can cause unintended environmental harm due to drift, leaching and volatilization.

6.7.1.4 Biological Control Methods

Biological control uses natural processes to control undesirable vegetation. For example, some plants, including certain grasses, release chemicals that suppress other plant species growing around them. Known as allelopathy, this characteristic can serve as a type of biological control against incompatible species. Promoting wildlife populations is also a form of biological control. Birds, rodents and other animals can encourage compatible plant communities by eating seeds or shoots of undesirable plants.

6.5.1.5 Cultural Control Methods

Cultural methods modify habitat to discourage incompatible vegetation. Cultivated landscapes of compatible plants and agricultural crops are examples of cultural control.

A cultural control known as cover-type conversion provides a competitive advantage to short-growing, early successional plants, allowing them to thrive and eventually out-compete unwanted tree species for sunlight, essential elements and water. Cultural methods also take advantage of seed banks of native, compatible species lying dormant on site. In the long run, cultural control is the most desirable method where it is applicable.

The early successional plant community is relatively stable, tree-resistant and reduces the amount of work, including herbicide application, with each successive treatment.

While it is a type of cultural control, cover-type conversion employs a combination of manual, mechanical, herbicide and biological methods. For example, although encouraging allelopathic plants and increasing wildlife populations by improving habitat are types of biological controls, they are also forms of cultural control.

Tree-resistant communities are created in two stages. The first involves non-selectively clearing the right-of-way of undesirable trees using the best applicable control method or methods. The second develops a tree-resistant plant community using selective techniques, including herbicide applications and releasing the seed bank of native, compatible species for germination.

Cover type conversion, uses herbicides to remove incompatible tall-growing trees and other vegetation from the right-of-way in order to establish a stable, low-growing plant community. The specific IVM technique selected for a particular site is based upon various conditions, which include terrain, accessibility, environmental considerations (wetlands, streams, etc.) cultural factors, worker and public health, economics and other factors.

6.7.1.5.1 Wire-Border Zone

Over roughly sixty years of research on transmission rights-of-way has demonstrated that integrated vegetation management applied to creating distinct, compatible plant communities not only effectively manages vegetation on rights-of-way, but also enhances wildlife habitat, at least in forested areas (Yanner and Hutnik 2004). The wire zone-border zone concept was developed by W.C. Bramble and W.R. Byrnes (Bramble et al 1991).

On flat terrain, the wire zone is the right-of-way portion directly under the wires and 10-feet to the field side of the outside phases. The border zone ranges from ten-feet outside the outer phases to the right-of-way edge (Figure 6.4a). The border zone may be reduced or eliminated on the up-slopes slope where wire sag and sway may preclude leaving trees of any type. It may also extended on down-slopes (Figure 6.4b).

Properly managed, wire zone-border zone linear corridors not only effectively protect the electric facilities, but also can become an asset for forest ecology and forest management (Bramble et al 1991, Yanner, Bramble and Byrnes 2001, Yanner and Hutnik 2004).

6.7.1.5.1.1 Region A

Region A is the area where lines are less than 50 feet off the ground (Figure 6.5). The 50 foot height should be from maximum engineered sag mid-span, with attention to side slope and potential sway of conductors in high wind. The right-of-way in Region A should be cleared following the wire zone - border zone recommendations of Bramble and Byrnes (Bramble et. al. 1991 [Figure 6.2]).

After clearing, the Region A wire zone should consist of grasses, legumes, herbs, ferns and low-growing shrubs (under 5-feet at maturity). The border zone should consist of tall shrubs or short trees (up to 25 feet in height at maturity), grasses and forbs. These cover types benefit the right-of-way by competing with and excluding undesirable plants.

6.7.1.5.1.2 Region B

Region B occurs where the lines are between 50 and 100 feet off the ground from maximum engineered sag (Figure 6.5). In Region B, a border zone regime should be established throughout the right-of-way.

Note that many transmission structures are over 50 feet high. So, in many cases, a border zone community can be maintained near structures. Care should be taken to maintain access to the structure.

6.7.1.1.3 Region C

Region C is where the lines are 100 feet or more off the ground (Figure 6.5). Tall-growing trees may be allowed in Region C provided they have at least 50 feet of clearance. Trees with less than 50 feet of clearance can be selectively removed.

6.8 Transmission Rights-of-Way Widths

Right-of-way clearing should conform to the greater of the NERC clearances or the width indicated on the easement or permit. Removals are always desirable under transmission lines.

Transmission lines may be constructed on the edge of dedicated road right-of-way where that may or may not be an easement or permit on the adjoining property allowing encroaching vegetation to be cleared. In these cases or others where the easement or permit does not specify a width, right-of-way dimensions in Table 6.2 apply. However, if no authority exists to remove trees, at minimum work should conform to Tables 6.1 and 6.2.

Easements should be researched through PacifiCorp Right-of-Way Services referencing the *Plan and Profile.* The *Plan and Profile* may also be useful in determining if the age of the line qualifies it for a prescriptive easement (see Section 8.3.1.1 and Table 8.1). Ground disturbance shall be minimized on all rights-of-way.

6.9 Post Work Assessment

Foresters should audit transmission work following procedures outlined in Section 4.3. The audits should objectively assess quality, adherence to specifications, production, herbicide and other matters. Moreover, audits should provide the tree crew leader with feedback on production, professionalism, equipment, safety and crew efficiency. Results shall be documented on an *Audit Report* (Figure 4.7). Following systematic work, the entire length of completed line shall be inspected by the contractor to verify work complies with PacifiCorp specifications.

6.10 Mitigation Measures

NERC Requirement R1.4, directs transmission owners to develop mitigation measures to achieve sufficient clearances for protection of the transmission facilities when it identifies locations on the right-of-way where the transmission owner is restricted from attaining Clearance 1.

Whenever the restriction is caused by a landowner, the refusal process in Chapter 8 shall be followed. If the refusal process has been completed without attaining Clearance 1 distances, such locations should be documented on the *Work Release* (Figure 4.2). These sites should be reported in writing to the appropriate line patrolmen within 30 days. The line patrolmen should report annually on these site's status. Moreover, foresters or their contract designee should inspect the site biannually.

6.11 Hazard Trees

Hazard trees are structurally unsound and could strike a target (such as electric facilities) when they fail. Off right-of-way hazard trees shall be identified bearing prevailing winds and soil depth in mind. Trees on the uphill and windward sides of rights-of-way should receive particular scrutiny. Hazard trees should be either removed or pruned to reduce the exposure. Work shall be performed in a manner that neither damages trunks nor disturbs root

Figure 6.1. Right-of-way reclamation using mechanical control. In this case, a slashbuster.

TABLE 6.2. Active transmission right-of-way widths.

Facility	Distance from Center	Urban Width	Rural Width
46 kV Single pole	25 feet	50 feet	50 feet
69 kV Single pole	25 feet	50 feet	50 feet
115 kV Single pole	30 feet	60 feet	60 feet
138 kV Single pole	30 feet	60 feet	60 feet
161 kV Single pole	40 feet	80 feet	80 feet
230 kV Single pole	40 feet	80 feet	80 feet
69 kV H frame	40/50 feet	80 feet	100 feet
115 kV H frame	40/50 feet	80 feet	100 feet
138 kV H frame	40/50 feet	80 feet	100 feet
161 kV H frame	40/50 feet	80 feet	100 feet
230 kV H frame	62½ feet	125 feet	125 feet
345 kV H frame	75 feet	150 feet	150 feet
345 kV Steel tower	75 feet	150 feet	150 feet
500 kV Steel tower	87½ feet	175 feet	175 feet

Note rights-of-way should be cleared to those specified in the easement. If no easement exists, rights-of-way in this table apply. Widths conform to those in PacifiCorp Transmission Construction Standard TA 181.

Figure 6.2 In densely vegetated areas, rights-of-way usually have to be completely cleared as the initial stage of establishing a wire-border zone.

Figure 6.3. Line 4 in California following work (note the trees midspan where the line is more than 110-feet off the ground).

Lorelei Phillips photo

Figure 6.4a. Bramble and Byrnes Wire Zone - Border Zone (adapted from Yahner, Bramble and Byrnes, 2001).

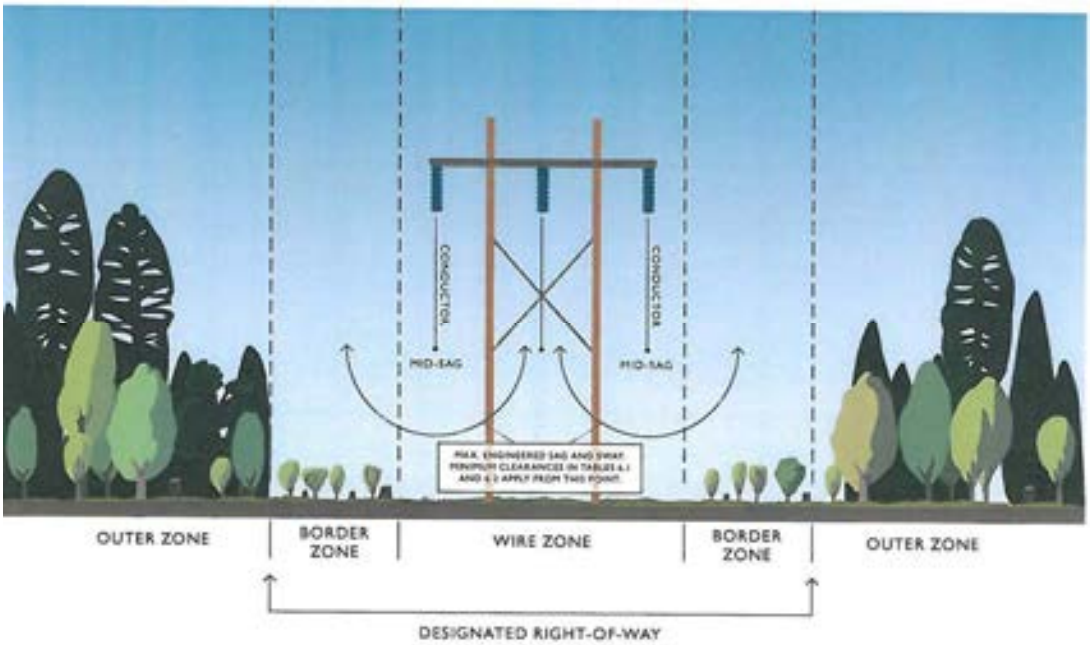
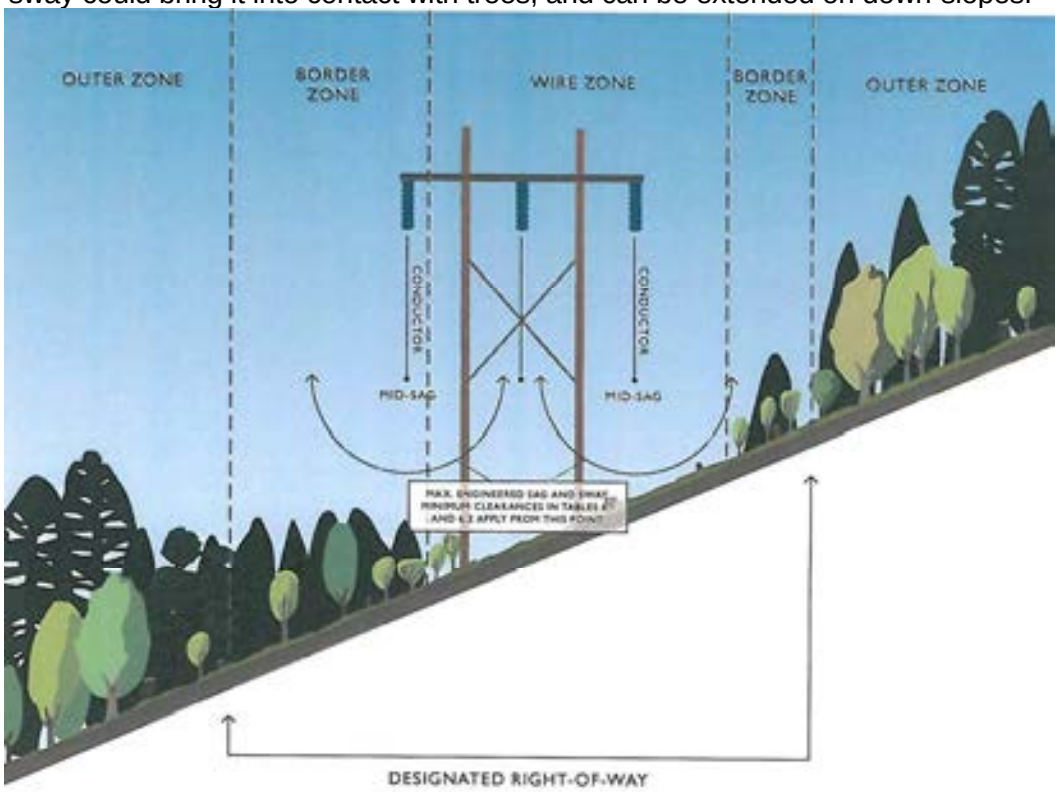
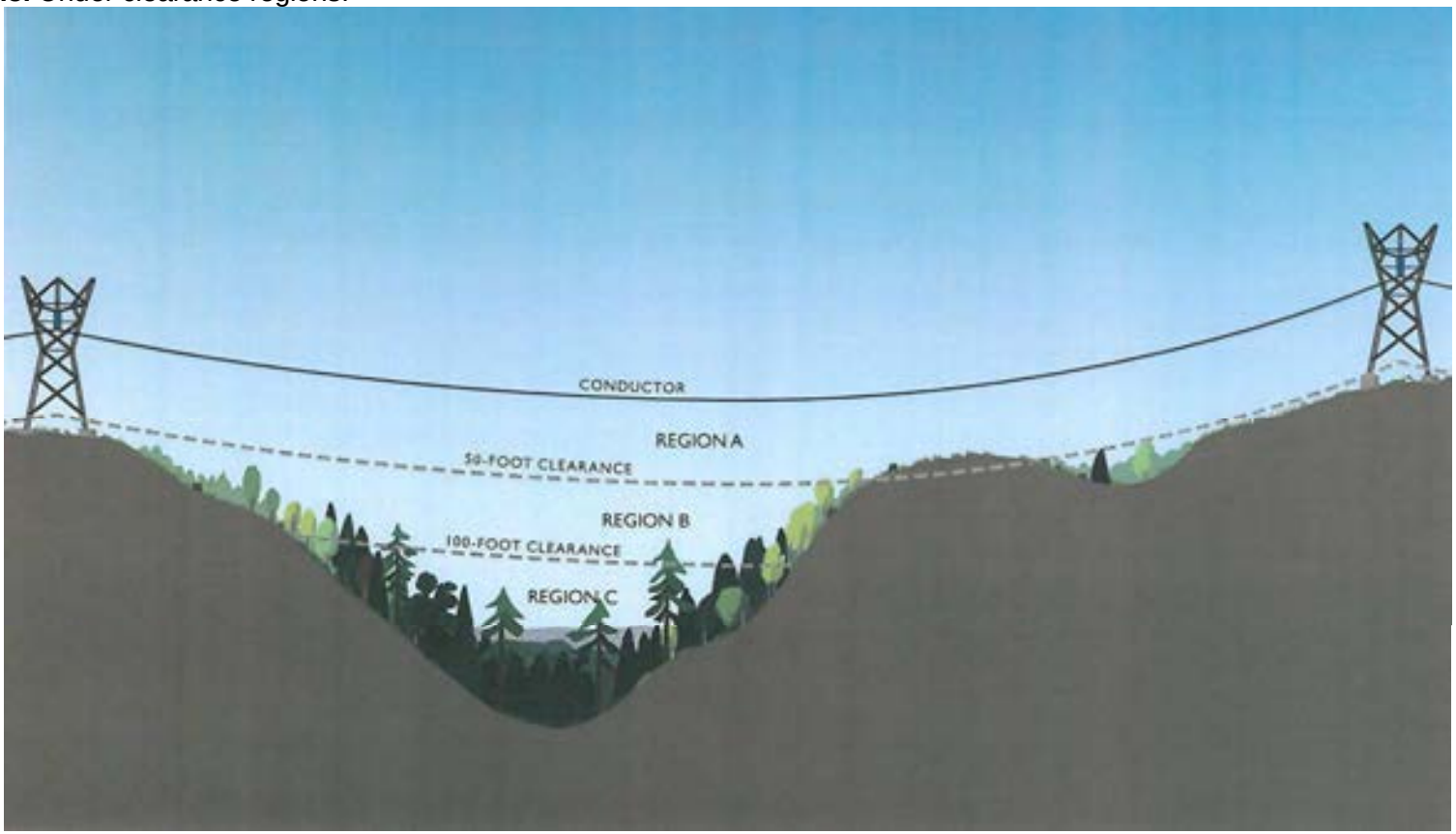


Figure 6.4b. The border zone may be reduced or eliminated on up-slopes where wire sag and sway could bring it into contact with trees, and can be extended on down-slopes.



Brad Gouch drawings (Figures 6.4 and 6.5).

Figure 6.5. Under clearance regions.



Region Definitions:

Region A: Where conductor to ground clearance is less than 50 feet (from maximum engineered sag and sway.

Region B: Where the conductor to ground clearance is 51-100 feet (from maximum engineered sag and sway.

Region C: Where the conductor to ground clearance is over 100 feet (from maximum engineered sag and sway.

Appropriate Region Plant Species:

Region A: Grasses, legumes, ferns and low-growing shrubs (<5' at maturity).

Region B: Region A species as well as large shrubs and short-growing trees (<25' at maturity).

Region C: All tree and shrub species.

systems of adjacent trees. Damaged trees could decline, decay or die, threatening the conductors if they fall.

Federal and state agencies could request hazard trees to be topped to create "wildlife trees". PacifiCorp may honor such requests provided the safety of the tree workers or facilities are not compromised, and the trees are topped below a height that would allow them to contact Company facilities should they fall.

PacifiCorp manages millions of trees across its 15,000 mile transmission system. That means in every mile of line, the Company potentially has hundreds or thousands of trees, any one of which could compromise public safety and electrical service reliability. It is impossible to completely secure an electrical system from that level of exposure. Nevertheless, PacifiCorp has a responsibility to make a reasonable effort to maintain vegetation to reduce risks to both the public and power supply.

6.12 Vegetation Screens

Vegetation screens may be required by federal or local authorities in some locations at high visibility areas such as major road crossings. Where such mandates exist, vegetation screens should consist of border zone communities and be located near structures (where the line is unlikely to sag), if possible. If no border zone species are present, tall-growing trees may be left provided they have at least the minimum clearances in Table 6.1 following scheduled work.

Leaving tall-growing trees in transmission rights-of-way should be discouraged because they impede cover type conversion. So, trees should be removed, rather than be pruned to obtain proper clearances, if at all possible. Vegetation screens should be no more than twenty-five feet from frequented vantage points into the right-of-way. Areas where tall-growing species are retained as screens shall be documented and monitored annually by line patrolmen. If remaining trees violate work thresholds specified in Table 6.1, line patrolmen should report them to Vegetation Management for correction within 30 days.

6.13 Merchantable Timber

Rights-of-way could contain merchantable timber. Merchantable timber is defined as trees with at least six-inch diameter at breast height (DBH), that is recoverable and has a market in the local area. Merchantable timber belongs to the property owner unless the easement or permit states otherwise. If merchantable timber needs to be felled, the property owner should be contacted regarding timber recovery.

After the merchantable timber is felled, it should be de-limbed and left in total tree length on the right-of-way for recovery by the owner. In limited cases, PacifiCorp may decide to purchase merchantable timber from the property owner and retain or transfer ownership to another party. A forest practice permit from the appropriate state department of forestry is required for timber recovery.

6.14 Transmission Safety Procedures

The following safety procedures shall be followed by all tree crews on PacifiCorp transmission facilities.

6.14.1 Pre-work Communication with Dispatch

Communication with dispatch is critical for tree crew safety. Every morning before starting transmission work, tree crews shall call the dispatcher

from the right-of-way by radio or telephone and provide the following information to comply with *Power Delivery System Operations System policy SOP-POL-013* (Figure 6.6):

- Name of crew leader
- Name of company
- Name of transmission line
- Line section (substation names between which work is to occur, such as "Alvey to Dixonville," or "Ben Lomond to Terminal")
- Location of work (structure number, address or both)
- How long the crew will be working at that location
- Radio or cellular telephone number of the crew
- Name of GF/supervisor and their cellular telephone number

If radio or telephone contact cannot be made with the dispatcher from the right-of-way, non-emergency work shall not be performed at that site. The crew should relocate to work where they can communicate with the dispatcher. Operative communication capability is mandatory at all times on transmission rights-of-way. Satellite phones could be necessary in remote locations to provide the required communication.

6.14.2 Post-Work Communication with Dispatch

Each afternoon after completing transmission work for the day, tree crews shall call the dispatcher and provide the following information (Figure 6.6):

- Name of crew foreman and company.
- Name of transmission line
- Line section (substation names between which work occurred, such as "Alvey to Dixonville," or Ben Lomond to Terminal").
- Location where work was performed
- Crew members and equipment are off the right-of-way or in the clear.

6.14.3 Safe Working Procedure

Do not take chances. If a tree cannot be felled or pruned safely, do not proceed. If a tree or limb falls into the conductors, stop work and immediately and follow the emergency procedure in Figure 2.1. Minimum approach distances (Table 2.1) shall not be violated. Remember, transmission conductors can sag considerably at mid-span during hot weather, ice buildup and heavy loads. Trees that have safe clearance in the morning may not have safe clearance in the afternoon. Conditions could require a hold or clearance. Clearances on some transmission lines can take weeks or months to schedule. Conditions could require a hold or a clearance. See Section 2.1.1 for hold and clearance instructions.

6.15 Monthly Progress Tracking

Progress on the annual work plan for NERC Transmission Lines shall be tracked on the *PacifiCorp Main Grid Transmission 2008 MASTER* for lines under the auspices of NERC Standard FAC-003-01. Progress on the annual work plan for other transmission lines shall be tracked on the monthly *Local Transmission Progress Report.* Both reports track miles achieved against plan on a monthly basis (Figure 6.7).

Figure 6.6. Transmission communication procedure with Dispatch (operative communication is mandatory at all times on transmission rights-of-way. Satellite phones could be necessary in remote locations).

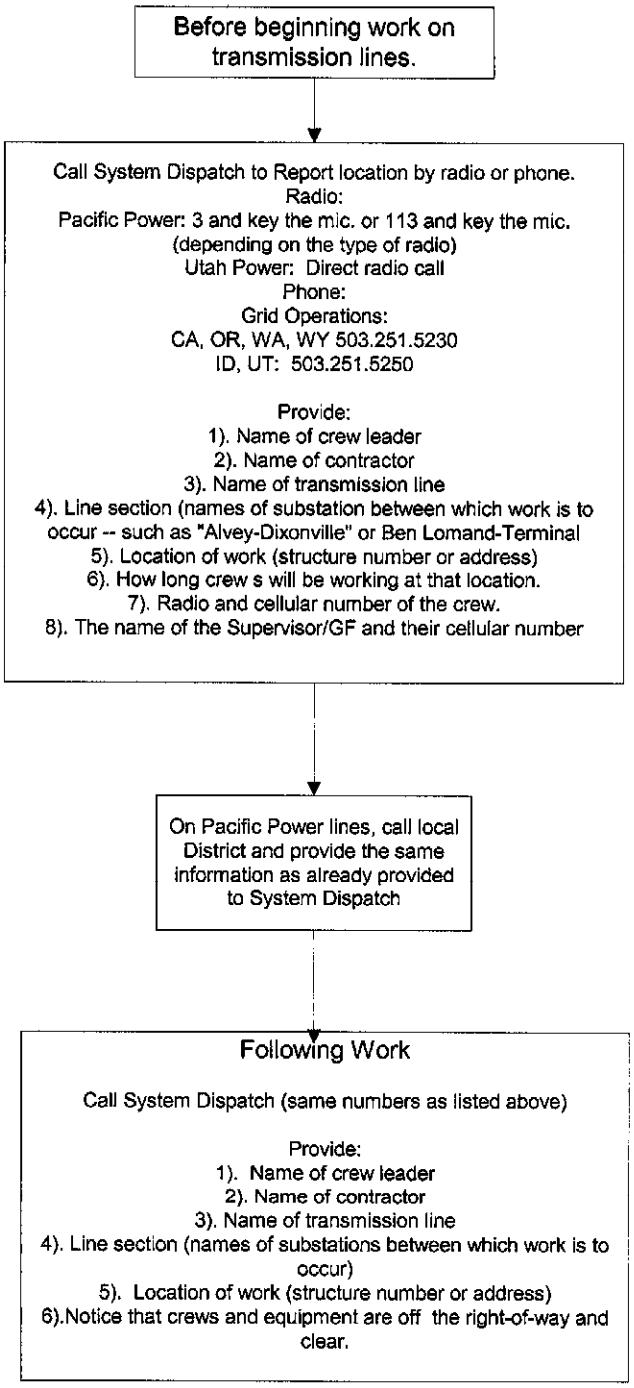


Figure 6.7. Summary pages of main grid and local transmission monthly reports.

PACIFICORP VEGETATION MANAGEMENT 2011 MAIN GRID TRANSMISSION PROGRESS REPORT

Through Dec 31, 2011

STATE SUMMARY

	TOTAL Line Miles	Line Miles Scheduled	Line Miles Completed	Line Miles Goal	Line Miles Ahead/Behind
	7,160	795	803	795	8
State					
California	129	23	11	23	-11
Idaho	1,206	99	99	99	0
Misc States	66	0	0	0	0
Montana	137	46	30	46	-16
Oregon	1,131	224	224	224	0
Utah	2,325	207	230	207	23
Washington	284	160	168	160	8
Wyoming	1,877	37	41	37	4
TOTAL	7,160	795	803	795	8

FORESTER SUMMARY

	TOTAL Line Miles	Line Miles Scheduled	Line Miles Completed	Line Miles Goal	Line Miles Ahead/Behind
	7160	795	803	795	8
Forester					
Armstrong	609	306	311	306	5
Evans	1865	127	142	127	14
Jones	64	21	21	21	0
Partridge	284	35	42	35	8
Phillips	734	58	46	58	-12
Vanderhoof	3,534	239	237	239	-2
Hooley	71	9	4	9	-5
Total	7,160	795	803	795	8

PACIFICORP VEGETATION MANAGEMENT 2011 LOCAL TRANSMISSION PROGRESS REPORT

Summary

Through Dec 31, 2011

LOCAL TRANSMISSION WORK

	Total Line Miles	Total Miles Scheduled	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)
	7,936	2,136	2,316	2,136	180
State					
California	572	106	116	106	10
Idaho	797	38	46	38	8
Oregon	1,836	279	340	279	61
Utah	3,747	1,445	1,587	1,445	142
Washington	324	131	89	131	-42
Wyoming	660	137	138	137	1
Total	7,936	2,136	2,316	2,136	180

SUMMARY OF WORK BY FORESTER

	Total Line Miles	Total Miles Scheduled	Line Miles Completed	Line Mile Completed Goal	Miles Ahead(Behind)
	7,936	2,136	2,316	2,136	180
Forester		*	*	*	*
Hooley	356	9	41	9	32
Evans	2,304	977	1,035	977	58
Jones	766	330	413	330	83
Partridge	594	259	191	259	-68
Phillips	1,038	90	138	90	48
Vanderhoof	2,134	313	323	313	10
Armstrong	744	158	176	158	18
Total	7,936	2,136	2,316	2,136	180
Weeks					
52					

7. CHEMICAL SPECIFICATIONS

Herbicides and tree growth regulators (TGRs) are an integral part of PacifiCorp's Vegetation Management program. Chemical applications shall be performed according to federal, state and local regulations. Labels are the law, and chemical use must comply with labeling. PacifiCorp's director of vegetation management shall approve all products and mixes. Property owners shall be notified at least five days, but no more than six weeks in advance, whenever chemicals are to be used on their property. Property owner objection to herbicide use shall be honored.

The company making the application is responsible for chemical purchase and storage, record keeping as well as container disposal. All vegetation management crews shall have at least one individual who holds a valid applicator's license. Applicators shall either hold that license, or work under the direct supervision of a certified applicator. Tree crews found working without a valid applicators license for the state in which they are working may be shut down at the forester's discretion. Supervisors/GFs of qualified applicators shall hold a certified applicator's license in the state or states in which they supervise crews.

7.1 Chemical Reports

All chemical applications shall be documented in the *Daily Report* (Figure 4.6). The company making the application shall be responsible for maintaining reports for review by the state departments of agriculture.

When chemical work is done on or adjacent to PacifiCorp Hydro properties, copies of chemical reports shall be provided to the plant manager weekly.

7.2 Herbicide Applications

Herbicide applications shall be pursued wherever possible as a vegetation management tool. Herbicides prevent sprouting from stumps of deciduous trees and should be used on saplings of tall-growing species to reduce future inventories (Figure 7.2). Herbicides are essential in establishing the wire zone-border zone method on transmission lines.

When properly used, herbicides are effective and efficient, minimize soil disturbance, and enhance plant and wildlife diversity. Herbicide application can benefit wildlife by improving forage as well as escape and nesting cover. In some instances, noxious weed control is a desirable objective on utility rights-of-way that can be satisfied through herbicide treatment.

Herbicide use can control individual plants that are prone to re-sprout or sucker after removal. When trees that re-sprout or sucker are removed without herbicide treatment, dense thickets develop, impeding access, swelling workloads, increasing costs, blocking lines-of-site, and deteriorating wildlife habitat (Yanner and Hutnik 2004 [Figure 7.1]).

Treating suckering plants allows early successional, compatible species to dominate the right-of-way and out-compete incompatible species, ultimately reducing work.

7.2.1 Selectivity

Herbicides can be selective or non-selective depending on their type. Selective herbicides only control specific kinds of plants, when applied according to the label. For example, synthetic

auxins are a class of selective herbicides that control broadleaved plants, but do not harm grass species when applied according to the label. By contrast, non-selective herbicides work against both broadleaved plants and grasses. Non-selective herbicides can be effective where a wide variety of target plant species are present, like that often found during initial clearing or reclaiming dense stands of invasive or other undesirable vegetation.

Application techniques can also be either selective or non-selective. Selective applications are used against specific plants or pockets of plants. Non-selective techniques target areas rather than individual plants (see *Application Methods*). Non-selective use of non-selective herbicides eliminate all plants in the application area. Non-selective use of a selective herbicide controls treated plants that are sensitive to the herbicide, without differentiating between compatible or incompatible species. Selective use of either would only control targeted vegetation. Selective use is preferable unless target vegetation density is high.

7.2.2 Herbicide Best Management Practices

PacifiCorp is dedicated to ensuring proper application of approved herbicides to minimize the effects on non-target vegetation, human health, fish and wildlife species and water quality (Childs 2005).

Herbicide applications shall (Childs 2005):

- Follow all product label mandatory provisions such as registered uses, maximum use rates, application restrictions, worker safety standards, restricted entry levels, environmental hazards, weather restrictions, and equipment cleansing.
- Follow all product label advisory provisions such as mixing instructions, protective clothing and others matters.
- Have on site a copy of the label and MSDS sheets.
- Be made in the presence of a licensed applicator valid for the state in which work is performed.

7.2.3 Wetlands and Water Bodies

The affects of herbicides on wetland and water resources should be minimized by utilizing buffer zones. Such zones reduce the movement of herbicides into from the application site into adjoining water bodies. Buffer zones in Table 7.1 must be followed unless instructed otherwise by competent authorities. Climate, geology and soil types should be considered when selecting the herbicide mix with the lowest relative risk of migrating to water resources (Childs 2005).

7.2.4 Spills

Mixing, loading and cleaning equipment are critical activities that present the greatest exposure to accidents or spills (Miller 1993). To prepare for accidental spills, some kind of absorptive material shall be available.

Figure 7.1. Untreated rights-of-way quickly fill in with thickets of sprouts following mowing

Jay Neil photo

Figure 7.2. Incompatible species treated in the Line 72 right-of-way in, Oregon two years after reclamation. Herbicide treatments help maintain the right-of-way and are used to convert it to a wire zone-border zone prescription (Figure 6.3)

Table 7.1. Buffer Widths to Minimize Impacts on Non-Target Resources (adapted from Childs 2005).

Herbicide Ecological Toxicities and Characteristics	Buffer Width from Water Resource per Application Method			
	Spot	Localized	Broadcast	Mixing, Loading, Cleaning
Practically Non-toxic to Slightly Toxic	Up to the Edge	Up to Edge	50 feet	100 feet
Moderately Toxic, or Label Advisory for Ground/Surface Water	25 feet	35 feet	300 feet	250 feet
Highly Toxic to Very Highly Toxic	35 feet	100 feet	Noxious weed control only. Buffers shall comply with local regulations	250 feet

In the event of a spill or misapplication:

- STOP, CONTAIN, ISOLATE
  - o Stop the source of the spill
  - o Contain the spill (it is especially important to prevent the spill from entering waterways)
- Isolate the area – prevent people or vehicles from passing through the area.
- Report the spill to the Spill Hotline: 800.94.SPILL and provide:
  - o Caller and manager's name
  - o Date and time spill was discovered
  - o Location (address or longitude and latitude)
  - o Manufacturer name and serial number
  - o Cause of spill
  - o Amount of spill
  - o Types of surfaces contaminated
  - o Containment and/or clean up activities performed so far
- Request the help of and notify supervisor/GF and PacifiCorp forester.
- Remediate the spill
  - oClean up the spill or have it cleaned up, following directives from the Spill Hotline
  - oWash equipment and vehicles.
  - oProperly dispose of cleanup materials
  - oFollow up with appropriate cleanup documentation.
- Clean-up at or near PacifiCorp generating sites or substations must comply with site specific spill prevention and remediation plans.

7.2.5 Inappropriate Applications

There are situations where herbicide applications are inappropriate. If application company representatives are uncertain whether or not applications are appropriate, they shall consult the appropriate forester. Inappropriate situations include (but are not limited to):

- Areas where the property owner expresses objections to herbicide use.
- Governmental lands where herbicides are prohibited.
- Conditions of heavy precipitation or strong winds. If these conditions exist, the treatment should be deferred until weather improves.
- High temperatures that would cause product volatility and damage off-target plants. This is particularly important for foliar applications. During high temperatures, treatment should be deferred until weather cools.
- Trees that could be root grafted to desirable trees.
- Trees that are near desirable plants where the herbicide could move into contact with off target foliage or roots.
- Trees that are sufficiently close to contaminate agricultural crops or harvestable, edible plants.

If there is any uncertainty regarding whether or not an application is appropriate, contact the appropriate forester.

7.2.6 Application Methods

Herbicide application methods are categorized by the quantity of herbicide used, the character of the target, vegetation density and site parameters. Dyes can be used in the herbicide mix to mark areas that have been treated. Treatments include individual stem, broadcast and aerial treatments.

7.2.6.1 Individual Stem Treatment

Individual stem treatments are selective applications. They include stump, basal, injection, frill, selective foliar and side-pruning applications. Due to their specific nature, proper individual stem applications work well to avoid damage to sensitive or off target plants. However, they are impractical against broad areas or sites dominated by undesirable species.

Stump applications are a common individual stem treatment, where herbicides are applied to the stump cut surface around the cambium and to the top side of the bark. Water-based formulations require immediate stump treatment, while oil-based herbicides can be applied hours, days or even weeks after cutting.

Injections involve inserting herbicide into a tree. Frill (commonly called “hack and squirt”) treatments, consist of herbicide application into cuts in the trunk. Injections or frill treatments are especially useful against large incompatible trees to be left standing for wildlife.

Basal applications often use an herbicide in an oil-based carrier at the base of stems and root collar. The oil penetrates the bark, carrying the herbicide into the plant. Although basal applications can be made year round, dormant treatment is often best on deciduous plants, when they do not have foliage that can obstruct access to individual stems.

Selective foliar applications are done by spraying foliage and shoots of specific target plants. They can be either low or high volume treatments. For low volume applications, comparatively high concentrations of herbicide active ingredient are made in lower volumes of water than would be used with high volume treatment. Foliar applications are only made during the active growing season, normally late spring to early fall.

Side pruning is a technique where non-translocatable herbicides are applied to control specific branches growing

toward the electric facility. Treating large branches could damage trees in the same way as removing them through pruning.

7.2.6.2 Broadcast Treatment

Broadcast treatments are nonselective because they control all plants sensitive to a particular herbicide in a treatment area. They can provide a degree of selectivity with proper herbicides. Even then, broadcast treatments do not differentiate between compatible and incompatible plants that the herbicide controls. Broadcasting is particularly useful to control large infestations of incompatible vegetation (including invasive species) in rights-of-way or along access roads.

Broadcast techniques include high-volume foliar, cut-stubble and bare ground applications. High volume foliar applications are similar to high volume selective foliar applications. The difference is that broadcast high volume foliar treatments target a broad area of incompatible species, rather than individual plants or pockets of plants. Cut-stubble applications are made over areas that have just been mowed. Bare-ground treatments are used for clearing all plant material in a prescribed area, such as in substations or around poles to protect against fire. Bare-ground applications are usually granular or liquid applications following mechanical removal of vegetation, or used as a pre-emergent in maintaining graveled areas such as substations.

7.2.6.3 Aerial Treatment

Aerial treatments are made by helicopter (rotary wing) or small airplane (fixed wing). Rotary wing aircraft provide the most accuracy, because helicopters can fly more slowly and are more maneuverable than airplanes. However, airplanes are less expensive to operate than helicopters. Aerial control methods are also nonselective, but can provide a level of selectivity with proper herbicides. Aerial applications can be useful in remote or difficult to access sites, and be cost effective and quick, especially if large areas need to be treated. They also can be used where incompatible vegetation dominates a right-of-way. The primary disadvantage of aerial application is that it carries the threat of off-target drift, so it must be performed under low-wind conditions with low toxicity herbicides.

7.3 Approved Herbicides

A list of approved products appears in the following sections. PacifiCorp's director of vegetation management must authorize other chemicals.

7.3.1 Stump Application

- 2, 4-D
- Glyphosate
- Picloram
- Triclopyr

7.3.2 Low Volume Basal Application

- Imazapyr
- Triclopyr

7.3.3 Foliar Application

- 2, 4-D
- Aminopyralid
- Fosamine ammonium
- Glyphosate
- Metasulfuron methyl
- Picloram
- Sulfometuron methyl
- Triclopyr

7.3.4 Soil Application

- Diuron
- Imazapyr

- Picloram
- Sulfentrazone
- Tebuthiuron

7.4 Tree Growth Regulators

Tree Growth Regulator (TGR) applications are intended to retard fast-growing trees so that they will not interfere with facilities or violate state regulatory agency tree policy before the next scheduled maintenance.

7.4.1 Approved TGR Application Chemicals

- Fluprimidol
- Paclobutrazol

8. CUSTOMER RELATIONS

Representatives of vegetation management meet with more customers than any other Company department. As a result, customers often develop an impression of the entire Company based on their experience with PacifiCorp vegetation management. Since vegetation management work is often controversial, excellent customer service is imperative for a successful program. Company and contract personnel must be professional, prompt, fair and courteous to customers.

8.1 Educational Information

PacifiCorp has a variety of educational materials about tree-power line conflicts and planting the right tree in the right place.

8.1.1 Trees and Power Lines Brochure

The *Trees and Power Lines* brochure is a companion to the "yellow door card" (see Section 8.2.1). It explains the need for line clearance work, as well as natural target pruning. It also provides color pictures of how properly pruned trees could look following line clearance.

8.1.2. Small Trees for Small Places

The *Small Trees for Small Places* is a publication in PDF format available at PacificPower.net or RockyMountainPower.net. It provides tree selection tree planting and electrical safety information. It offers an easy to use chart on ornamental and adaptive characteristics of 100 different species that can be used adjacent to power lines. Not all these trees can be used everywhere in PacifiCorp's service territory. However, the idea is that with a choice of 100 small-statured trees, there should be a choice of several to use in any given location around PacifiCorp's system.

8.1.3 Right Tree in the Right Place Poster

The *Right Tree in the Right Place* poster provides illustrations and descriptions of small trees that are suitable across PacifiCorp's service territory. It also relates information about proper utility tree pruning and tree planting.

8.2 Notification for Tree Work

Notification for tree work is not required by any state tariff in PacifiCorp’s service territory. However, PacifiCorp vegetation management attempts to notify property owners or tenants prior to vegetation management work at home and business sites. PacifiCorp area foresters should authorize any line clearance work to be done without property owner or tenant notification. In cases of municipal, county, state or federal properties, the proper agency representative shall be notified. The appropriate customer and community relations manager should be notified prior to meeting with governmental officials.

Notification, including that for tree or chemical work, should be by letter, phone, personal visit or door card at least five business days, but no more than six weeks, prior to the crew arriving. Notification shall be documented on an *Activity Report* (Figure 4.3). Notification cards shall not be placed in U.S. Mail boxes. Notification cards should be used

only where the owner or tenant is likely to be present on a regular basis. Some circumstances, such as work on historic, unique or unusual trees, could warrant personal contact with the customer.

8.2.1 Door hangers

PacifiCorp has a variety of door hangers (Figure 8.1). These door hangers come in Pacific Power and Rocky Mountain Power versions. Pacific Power door hangers shall be used in California, Oregon and Washington. Rocky Mountain Power printings shall be used in Idaho, Utah and Wyoming.

8.2.1.1 Distribution (Yellow)

PacifiCorp's distribution door hanger is yellow, and should be used to notify customers of upcoming distribution cycle or interim work. The door hanger has forest tech contact information, an explanation of the need for line clearance work, of how the work will be performed and how much clearance is required. The door hanger informs customers that volunteer trees (those not planted as part of a landscape) six-inches or fewer in diameter at breast height will be removed. It also includes drawings of shapes customers could expect from the work, and tips about tree planting (Figure 8.2)

8.2.1.2 Ticket (Blue)

The blue door hanger should be used to communicate with customers who have called in requests for tree work. It has four check boxes with the most common responses to customer requests. The tree(s):

- Do not pose an immediate threat to electric service.
- Are not affecting PacifiCorp facilities.
- Are growing in proximity to service lines, but do not threaten electric service. If a customer wishes to have the tree pruned, PacifiCorp can disconnect the line to enable the customer to safely perform the work or hire a professional tree care company to do it for them.
- Are the customer's responsibility because they have more than ten feet from distribution primary conductors.

The form also has space for comments, and forest tech contact information.

8.2.1.3 Distribution Removal (White)

The white door hanger is a tree removal request, to fulfill PacifiCorp's requirement for written permission to remove trees where no easement granting authority exists to do so (see Section 2.7.1). The white door hanger identifies trees to be removed, has check boxes indicating whether or not the logs will be cut to firewood length and the stumps treated with herbicide. The door card also provides contact information for the forest tech, or comments and a sketch to help the customer understand the request.

8.2.1.4 Rural Transmission (Purple)

The rural transmission door hanger explains the need to remove trees under transmission lines. It relates the process the customer can expect, how trees and how debris will be left. It informs them that herbicide could be used on their property, and that we have a coupon program for tree replacement. It provides information on the voltage of the line and widths of the right-of-way. The door hanger also has a wire zone-border zone illustration and offers forest tech contact information.

Figure 8.1 Various PacifiCorp Vegetation Management door hangers.

8.2.1.5 Urban Transmission (Forest Service Green)

The green transmission door hanger is for use in urban or developed areas. It differs from the rural door hanger insofar as it doesn't have a diagram of wire-border zone technique. It still stresses removal.

8.2.1.6 TGR (Grey)

The grey TGR door hanger is for notifying customers about upcoming tree growth regulator application on their property. It provides space to see what trees will be treated and forest tech contact information.

8.2.1.7 Herbicide (Grey)

The grey herbicide door hanger is for notifying customers about upcoming herbicide application on their property.

8.2.1.8 Tree Crew Request (Orange)

The orange door hanger is for tree crews to use to ask customers for their cooperation with upcoming tree work. It provides information about when a tree crew will arrive on site, and has check

Figure 8.2. "Yellow" door hanger.

About Tree Pruning

How much necessary for safety?
Depending on species and speed of growth, trees require different clearance. Clearance is measured from the top wire.

- Fast-growing species require at least 14 feet of clearance (e.g. willow, Siberian elm, cottonwood, boxelder)
- Medium-growing species require at least 12 feet of clearance (e.g. ash, Norway maple, birch, pine)
- Slow-growing species require at least 10 feet of clearance (e.g. spruce, oak)

In addition to trimming, trees not intentionally planted as part of the landscape that measure less than six inches in diameter at 4.5 feet high will be removed and treated with herbicide. All firewood will be left on site.

Utah Power does not allow our contractors to use "round over" trimming, which causes a tree to grow unnaturally and severely wounds the tree.

Here are some shapes you may expect from proper pruning:

Fast growing trees may be treated with tree growth regulators which slow growth.

Tips for planting
To reduce the need for future pruning, be sure you plant the right tree in the right place. Some things to keep in mind as you're planting:

- Plant tall-growing trees (over 25 feet when mature) at least 25 feet away from overhead power lines.
- Low-growing trees (under 25 feet when mature) may be planted adjacent to overhead power lines.
- Trees and shrubs should be planted at least 10 feet away from ground-mounted transformers.
- Locate underground utilities before you plant. Call us at **1-888-221-7070** and we'll give you the number for the locating service in your area.
- Plant deciduous trees on the southeast and southwest exposures for summer shade and winter sun.
- Plant evergreen trees to provide winter windbreaks.
- For more information on the right type of tree to plant adjacent to power lines, call **1-888-221-7070** for a copy of our *Small Trees for Small Places* booklet.

Tree Maintenance
NOTICE

We will be in your neighborhood soon to conduct tree work. We thought you might like to learn more about tree pruning, safety and planting. If you have any additional questions, please contact me.

Date: _____

Contact: _____

Phone No: _____

Details: _____

_____

_____

_____

- We regularly prune and remove trees to provide safe and reliable electric service to your community. Trees that grow too close to power lines create hazardous conditions that can interrupt service to you and your neighbors.
- We hire arborists to maintain a safe corridor around power lines. These arborists are knowledgeable about the proper way to prune trees and use specially designed equipment to work near electric lines.
- Our tree contractors use natural pruning methods to maintain the health of the trees. Natural pruning, besides being healthier for the tree, also reduces resprouting in problem areas and limits the length of sprouts that do occur. The tree's species, structure and the strength of wood are all considered when trees are pruned.

Look up and live!
Never climb trees near power lines, and never climb a utility pole for any reason. When working outside with antennas, ladders and other long-handled tools, remember to always look up to see if power lines are near. Never trim limbs or remove trees around power lines. Call Pacific Power for assistance.

Para más información, llame al 1-888-225-2611 y podrá hablar con un representante que hable español.

PACIFIC POWER
Making it happen.

boxes for requests to move something (like a car) from under the tree or secure a dog. It also can be used for permission to dive on property and has space for comments.

8.2.1.9 Pole Clearing

The pole clearing door hanger is to notify California customers of upcoming work to comply with California Resource Code 2492 (see Section 5.6)

8.2.2 Other Customer Contact Forms

In addition to door hangers, PacifiCorp has two forms for use in customer communication. The *Property Owner Permission* form has check boxes requesting authorization for tree removal, tree and brush disposal, mowing, notification of herbicide and TGR application. It provides a space for the property owner's signature. Property owner signatures are required for tree removal, but not brush disbursal or herbicide application.

PacifiCorp also has a *Refusal /Complaint Form.* This form should be completed by forest techs, supervisors/GFs, tree crews or foresters whenever a customer has concerns about upcoming or recently completed work. It identifies the property owner, the type of project and the nature of the refusal or complaint. These documents should be kept in a permanent file.

8.2.3 Crew Arrival on Site

When crews arrives for work at a residential site, as a courtesy they should knock at the door to let the home owner or tenant know they are about to begin work. If no one is home, the crew should proceed with the planned tree work.

8.3 Customer and Property Owner Refusal Procedure

The customer refusal process is presented in Figure 8.4. Detailed records must be kept of every conversation, including the date and time it occurred, and summary of the matters discussed. If a vegetation management representative makes a failed attempt to contact a refusal by phone, the date and time of the call should also be noted.

8.3.1 Forest Tech Refusal Procedure

When a property owner refuses to allow the work necessary to satisfy PacifiCorp specifications, the forest tech shall complete a *Property Owner Refusal/Complaint Report* and notify their supervisor/GF, and area forester within two working days and before any work is performed on the property. Forest techs shall not compromise clearances.

8.3.1.1 Easements

After documenting the refusal, the forest tech should research the right-of-way to determine PacifiCorp's property rights for that location. PacifiCorp often owns easements, copies of which are available from PacifiCorp right-of-way services. In addition, states grant prescriptive rights if the line has existed for specified length of time. This time period varies depending on the state (Table 8.1). This information should be provided to the appropriate GF/supervisor.

8.3.2 Crew Leader Refusal Procedure

When a property owner refuses to allow the crew leader to obtain specification clearances, the crew leader shall complete a *Property Owner Refusal/Complaint Report* and notify

their GF/supervisor, forest tech, or area forester within two working days and before any work is performed on the property. Crew leader notification initiates the refusal procedure from the beginning.

8.3.3 General Foreman/Supervisor Procedure

The supervisor/GF should contact the property owner within two weeks of being informed of a refusal to try to resolve the situation. The GF/Supervisor should review the documentation surrounding the refusal before contacting the customer. GF/supervisors should not compromise work below the specification without written authorization from the responsible area forester. If a prescriptive or written easement exists, the supervisor/GF should inform the customer of our rights under those easements. Notwithstanding, the general foreman/supervisor should not have the trees worked without customer consent.

If the general foreman/supervisor cannot resolve the refusal to full specification, he or she shall refer it to their area forester by turning in the *Property Owner Refusal/Complaint Report.*, along with any associated easement information.

8.3.4 Area Forester Procedure

When an area forester receives a refusal that the forest tech and general foreman/supervisor have been unable to resolve, within two weeks he or she shall contact the property owner to attempt to resolve the refusal. The forester may compromise work below the specifications, provided that trees have not grown within work thresholds in tables 5.1 or 6.1 and the agreement will not present unreasonable safety or electric service risks until the next regularly scheduled work This section is not intended to defer judgment to property owners on how much clearance to allow. Neither is it intended to justify clearances outside of specification in order to avoid dealing with an escalated complaint.

If the forester cannot resolve the refusal, the customer shall be sent a certified letter informing them that PacifiCorp has a duty to clear the trees from the conductors to Company specifications. The letter shall set a date and time that the tree will be worked. The date shall be at least five business days from the time the letter is postmarked. The letter should reference the applicable written or prescriptive easement if they exist. The forester shall alert the director of vegetation management, transmission and distribution support managing director, as well as the appropriate operations manager, customer and community manager, wires director, and regulatory analyst about the letter. The regulatory analyst will inform the proper regulatory agency about the action. If it appears the media could become involved, the Media Hotline should be notified.

Once the letter is sent, tree crews shall be dispatched to work the site to specifications at the assigned date and time, regardless of whether or not a right-of-way or prescriptive easement exists. The forester or GF/supervisor should be on site during work. Records shall be kept for use in potential litigation. Before and after photos of the site should be taken.

8.4 Customer and Property Owner Complaints

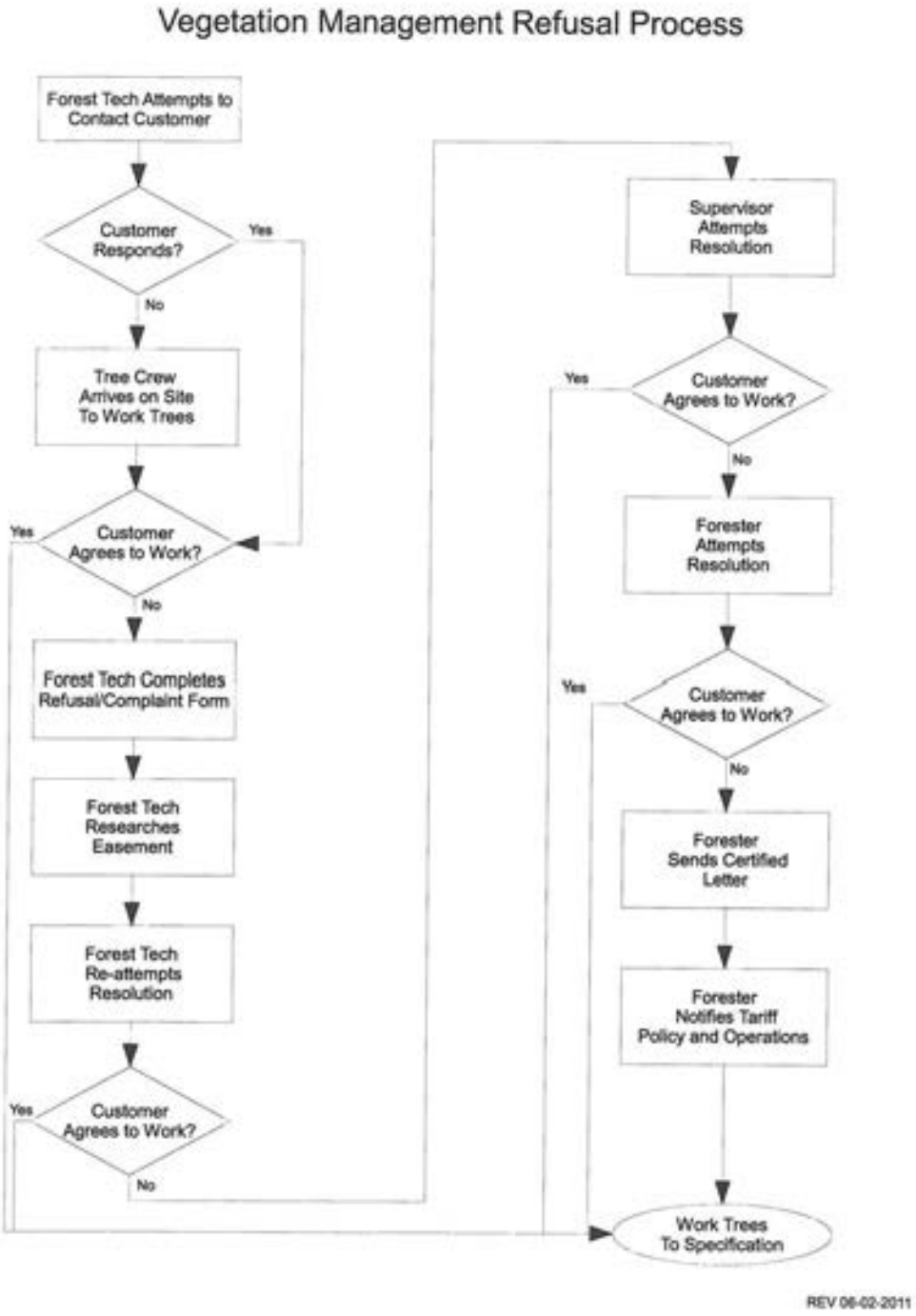
Customer and property owner complaints regarding any aspect of the vegetation management program shall be

TABLE 8.1. Prescriptive easement time requirements by state

State	Time
California	5 years
Idaho	20 years
Oregon	10 years
Utah	20 years
Washington	10 years
Wyoming	10 years

Figure 8.3. Information surrounding refusals should be documented and electronically filed with the appropriate project.

Figure 8.4. Refusal process.



addressed promptly, fairly and professionally. PacifiCorp should be notified of complaints using a *Property Owner Refusal/ Complaint Report.* Customers will be contacted within 48 hours of receipt of the complaint. Documentation surrounding the refusal should be digitally filed to be accessed with other information from the specific project for use the next time through.

8.5 Commission Complaints

Commission responses should go through tariff policy with assistance from the vegetation management service coordinator. It is important to provide timelines with appropriate summaries of vegetation management's interaction with the subject party. Response for data request should be provided within 24 hours if at all possible, but no later than 72 hours.

8.6 Customer Survey

PacifiCorp has Pacific Power and Rocky Mountain Power customer surveys. Surveys are vitally important for quality control, and for giving customer's a voice regarding vegetation management's performance.

The survey asks customers to rate from 1 (lowest) to 5 (highest) Vegetation Management's performance relative to five questions:

- Our notification clearly explained the work we would be doing.
- The workers were friendly and courteous.
- The work was completed as you understood it would be.
- The property was left neat and orderly.
- Overall, I am satisfied with how the work was handled.
- It also allows space for comments and for the customer to identify him/herself.

Tree crews should leave customer surveys on each property on which utility tree work is performed. For work on municipal or other government agency trees, a survey should be provided to the appropriate management authority. The area forester should also see that surveys are left on properties where they conduct crew audits. The survey is self addressed and postage paid for the respondent's convenience.

9. DEFINITIONS

Allelopathy. Production of a chemical by one plant to suppress competing plants of other species.

BMP. Best management practice

Border zone. The Region A right-of-way portion that extends from the right-of-way edge to 10 feet from the outside phases.

Branch bark ridge. Area of raised bark between two stems. The ridge is formed as the two stems grow together, pushing the bark outward. A raised branch bark ridge is often a sign of a strong branch attachment.

Branch collar. Wood formed around a branch attachment. It contains wood from both the branch and parent stem.

Branch core. Area in the trunk of a tree that traces the branch back to its origins as a bud on a twig.

Branch protection zone. Area in the branch core that undergoes chemical change in response to wounding or disease in the branch. The chemicals protect the tree by inhibiting or preventing diseases from passing from the branch to the parent stem.

Caliper. The diameter of a tree six inches off the ground.

Cambium. Area of cell division responsible for stem diameter growth.

Clearance. Line de-energizing for safety purposes. Clearances require 48 hour notices to all customers that will be effected by the outage.

Clearance 1. As defined by the NERC Standard FAC-003-1 (2006) as clearances between trees and transmission lines to be achieved at the time of work on bulk (main grid) transmission lines. They appear in Table 6.1.

Clearance 2. As defined by the NERC Standard FAC-003-1 (2006) as clearances between trees and transmission lines that should never be breached. The correspond to Institute of Electronic and Electrical Engineers Standard 516-2003. They appear in Table 6.1.

Company. PacifiCorp.

Crown reduction. Reduction of the top or sides of the tree by thinning cuts (lateral or branch collar cuts).

Crown Restoration. Restoring a previously headed stem's natural structure by thinning sprouts emanating from the old wound. Crown restoration should be done incrementally over the course of several cycles. The crowns of many third order trees may be so damaged they may never be restored.

Cycle buster. Fast-growing tree species that will not hold for a complete cycle.

DBH. Diameter at breast height.

Danger tree. A tree on or off the right-of-way that may contact electric facilities either through growth or if it should fall.

Decurrent form. Trees lacking a strong central leader, resulting in a spreading crown (for example, American elm [*Ulmus americana]*).

Distribution line. Lines energized between 600 and 45,000 volts.

Drip line. The horizontal extent of the crown out to the branch tips.

Drop-crotch. Archaic term for lateral cut.

Excurrent form. Tree with a strong central leader (for example, Ponderosa pine [*Pinus ponderosa]*).

Fast -growing species. Tree species that grow more than three feet per year.

Flush cut. A final pruning cut flush with the parent stem (the trunk, for example) that cuts into or removes the branch collar. Flush cuts are damaging and inappropriate.

GF. General foreman.

Hazard tree. Dead, dying, diseased, deformed, or unstable trees which have a high probability of falling and contacting a substation, distribution or transmission conductors, structure, guys or other Company electric facility.

Heading cut. Internodal cut on a stem, or a cut made to an inappropriate lateral.

Hold. Deactivating the automatic re-closers and the line. Holds are issued to a Journeyman lineman who, in the event of an outage, is responsible for ensuring that it is save to re-energize the line.

Included bark. Bark included in the juncture between two stems. It is a structural defect that can lead to stem failure.

Integrated Vegetation Management (IVM). Integrated vegetation management is a system of managing vegetation in which undesirable vegetation is identified, action thresholds are considered, all possible control options are evaluated, and selected control(s) are implemented (ANSI 2006).

Interim Work. Scheduled work in the interim half way between cycles. For example, most of Oregon is on a four years cycle. Two years after completing cycle work, most feeders will be scheduled for a systematic pass to work trees that will not hold for the rest of the cycle.

ISA. International Society of Arboriculture.

kV. One thousand volts.

Lateral cut. A cut that shortens a branch to a lateral no less than one-third the diameter of the original stem and removing no more than one-half the lead's foliage.

Lead. An upright trunk or major limb with a dominant role in the tree crown, and a lateral is a branch off a parent stem

Low-growing tree species. Trees with a potential mature height under 25 feet.

Merchantable timber. Trees with a DBH of 6 inches or more, which are recoverable and have a market in the area.

Moderate-growing species. Tree species that can be expected to grow between one and three feet per year under normal conditions.

Natural target. Proper final pruning cut location at a strong point in a tree's disease defense system. They are branch collars and proper laterals.

Pruning. Scientifically-based arboricultural practice of removing tree parts.

Readily climbable tree. Readily climbable trees have low limbs that are accessible from the ground and sufficiently close together so that the tree can be climbed by a child or average person without using a ladder or special equipment. Vehicles do not render trees climbable. Climbable trees should have a main stem or major branch that would support a child or average person either within arm's reach of an uninsulated energized electric line or within such proximity to the electric line that the climber could be injured by direct or indirect contact. They are located near homes, schools, parks, businesses or other locations where people (particularly children) frequent.

Refusal. A case where a property owner does not allow trees to be cleared from PacifiCorp facilities to specification.

Region A. The area in transmission rights-of-way where the wire is less than 50 feet off the ground.

Region B. The area in transmission rights-of-way where the wire is between 50 feet and 100 feet off the ground.

Region C. The area in transmission rights-of-way where the wire is more than 100 feet off the ground.

Round over. A traditional line clearing technique that lowers a tree to a specified clearance distance and sculpts it into a ball. Round overs are a damaging practice that expressly violate PacifiCorp specifications.

Sapling. Young tree under four inches in diameter.

Secondary line. Wire energized to less than 600 volts.

Service line. A secondary line that runs between the electric supply and the customer.

Shall. A mandatory requirement.

Short-growing tree. A tree with a potential mature height of 25 feet or less.

Should. An advisory recommendation.

Slash. Brush and stems under 6 inches in diameter removed from trees during vegetation management operations.

Slow-growing species. Tree species that can be expected to grow less than one foot per year.

Subordination. Removing the terminal, typically upright or end portion of a parent branch or stem to slow the growth rate so other portions of the tree grow faster (Gilman 2002).

Tall-growing species. Tree species that grow to 25 feet or more at maturity.

TGR. Tree Growth Regulator. In the context of these specifications, TGR refers to chemicals that slow growth of some tree species.

Third order pruning. Utility lateral pruning on trees that have received many cycles of roundovers.

Transmission lines. Wire energized over 45 kV

Trimming. Reducing the length of toenails, hair, the amount of budgets and other things, Christmas tree decoration and unskilled removal of tree parts.

Volunteer. A naturally seeded, non-landscape tree.

Wetland. Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (EPA 2004) http://www.epa.gov/owow/wetlands/vital/what.html.

Whorl. A node in a pine tree where three or more limbs commonly originate.

Wire zone. Right-of-way portion that is directly under the wires and within 10 feet to the field side of the outside phases (Bramble et al. 2001).

Work threshold. Distance from conductors inside of which trees should be pruned or removed during cycle work.

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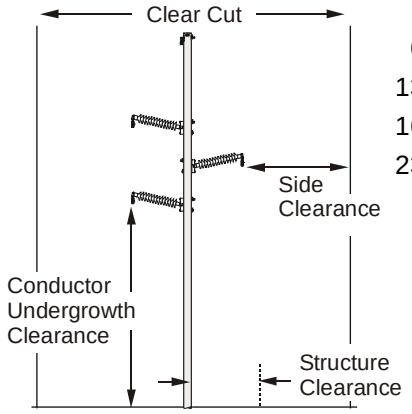
Transmission Line Clearing Specifications

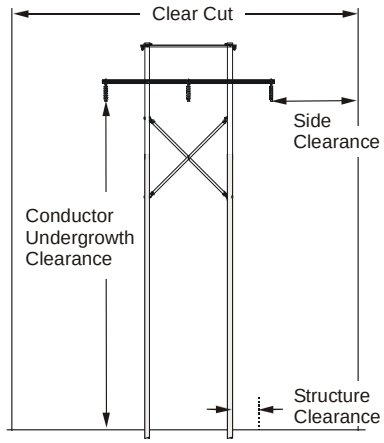
Clearance values shown below account for the minimum vegetation approach distance of 10' (12' for 345-kV, 18' for 500-kV) in any direction to transmission lines and for additional conductor movement. For vertical distance values, this additional conductor movement is the difference between everyday sag conditions and the sag at the maximum thermal condition. For horizontal values, the additional conductor movement is the conductor blowout at anticipated wind conditions. The values shown below do NOT account for anticipated vegetation growth between clearing cycles. The Transmission Line Clearing Specialist will estimate the vegetation growth toward the conductor between clearing cycles based on variables such as length of trimming cycle, vegetation species, typical growth rates, length of growing season, elevation, availability of water, soil type, etc. The total clearing distance to be achieved at the time of transmission vegetation management work (Clearance 1 as defined by FAC-003-1 R1.2) shall be the sum of clearances shown below and the anticipated vegetation growth during the cycle. When conditions exist that prevent crews from obtaining the 20' plus tree growth, these trees will be documented and maintained with more frequency than normal scheduled clearing cycles to ensure safe working clearances under maximum operating conditions.

Single Pole



Line Voltage	Minimal Undergrowth Clearance (feet)	Minimal Side Clearance (feet)	Preferred Clear Cut Width* (feet)	Structure Vegetation Clear Distance (feet)
69-kV	20	18	50*	10
138-kV	20	18	50*	10
161-kV	20	22	50*	10
230-kV	20	22	50*	10

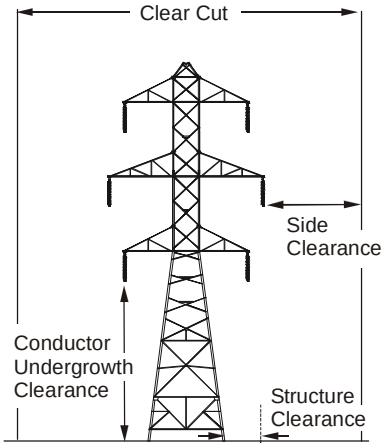
H-Frame



69-kV	20	28	90*	10
138-kV	20	28	90*	10
161-kV	20	32	100*	10
230-kV	20	32	100*	10
345-kV	20	34	120*	10
500-kV †	See information on the following page			

NOTE. Spans longer than 1200' may require greater clearance. Contact T&D Department for specific dimensions.

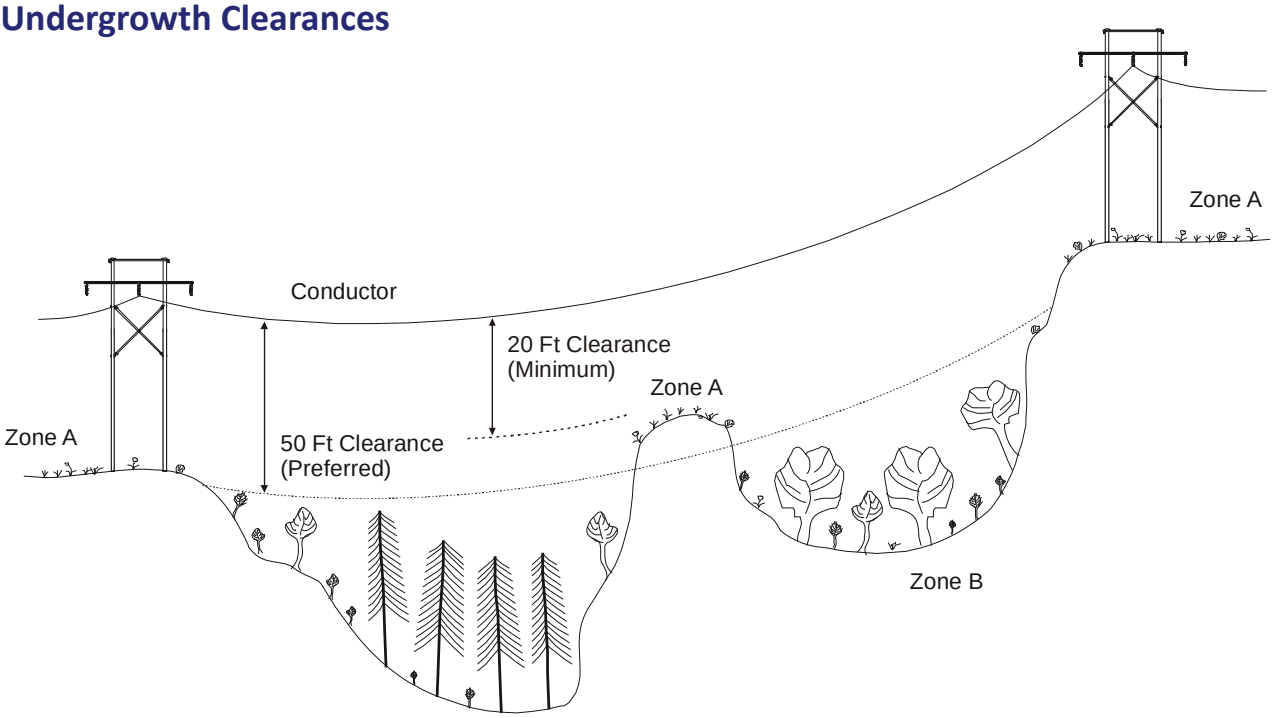
	Line Voltage	Minimal Undergrowth Clearance (feet)	Minimal Side Clearance (feet)	Preferred Clear Cut Width* (feet)	Structure Vegetation Clear Distance (feet)
Lattice Tower					
	230-kV	20			10
	345-kV	25			10
	500-kV †				10



NOTE. Due to the variety span lengths, conductors and tensions, contact the T&D Department for specific dimensions for side clearance and clear cut widths for steel lattice transmission lines.

* Determined by Transmission Line Easements or Permitted Rights of Way.
† For all 500-kV transmission lines, due to the variety span length, conductors and tensions, contact the T&D Department for specific vertical and side clearances dimensions, and clear cut widths.

Undergrowth Clearances



Zone Plant Species

Zone A: Grasses, legumes, herbs, ferns, and low growing shrubs.

Zone B: All deciduous and conifer trees.

Zone Definitions

Zone A: When the conductor to ground clearance is less than 50', all tree species should be removed.

Zone B: When the conductor to ground clearance is greater than 50', all tree species should be removed if they have less than 50' of clearance, 20' minimum.

IDAHO POWER®
An IDACORP Company

Framework for Managing Noxious Weeds

August 2011

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1. INTRODUCTION

Idaho Power Company (IPC or the company) is obligated to control noxious weeds on its fee-owned lands and, to varying levels, where the company has been granted land-use rights, such as power line rights-of-way (ROW). Idaho and Oregon state laws mandate that landowners control noxious weeds on their property. Increasingly, local, state, and federal agencies are applying permitting conditions that obligate IPC to control noxious weeds on lands for which it has been granted land-use rights.

IPC has implemented noxious-weed control on federal, state, and private lands in the past, but has done so without consistent direction or implementation. Therefore, IPC needs to have a consistent, defensible approach to noxious-weed control because of recent legal cases and potential liability, increased community emphasis on noxious-weed control, and anticipated, future requirements for weed control.

Fee-owned land and land-use rights are managed by a variety of departments within the company and, as a result, responsibility to implement weed-control measures has often been unclear. The purpose of this management framework is to define the responsibility for, and scope of, noxious-weed management required by the company to meet compliance requirements and contribute toward good land stewardship.

2. LEGAL AND REGULATORY REQUIREMENTS

2.1. State Laws

The statutory duty to control noxious weeds on private lands in Idaho and Oregon arises from specific state laws.

Title 22 (Agriculture and Horticulture), Chapter 24 (Noxious Weeds), Section 22-2407 (Landowner and Citizen Duties), Idaho Code, states:

> "It shall be the duty and responsibility of all landowners to control noxious weeds on their land and property, in accordance with this chapter and with rules promulgated by the director."

Title 22, Chapter 24, Section 22-2402 (13) (Definitions) defines "Landowner" as follows:

> "Landowner means: (a) The person who holds legal title to the land, except that portion for which another person has the right to exclude others from possession of the parcel; or (b) A person with an interest in a parcel of land such that the person has the right to exclude others from possession of the parcel."

Oregon Revised Statutes (ORS) Chapter 570.535 (Owner or occupant to eradicate weeds; disposition of fines) states:

> "Each person, firm or corporation owning or occupying land within the district shall destroy or prevent the seeding on such land of any noxious weed within the meaning of ORS 570.515 to 570.600 in accordance with the declaration of the county court and by the use of the best means at hand and within a time declared reasonable and set by the court, except that no weed declared noxious shall be permitted to produce seed."

In the case of IPC's non-exclusive transmission line easements on private property, IPC does not meet the definition of "Landowner," including that of "Operator" and, therefore, does not have a primary duty to control noxious weeds unless otherwise agreed to in an easement or mandated in a county conditional-use permit.

2.2. State and Federal Permitting Conditions

Easements granted for the use and occupancy on lands administered by the Idaho Department of Lands (IDL) require that IPC control noxious weeds within the boundary of the easement. The standard easement language reads:

> "It is understood and agreed that the Grantee shall take measures to control noxious weeds within the easement boundary in accordance with Title 22, Chapter 24, Idaho Code. The Grantee shall cooperate with any state or other agency authorized to undertake programs for control or eradication of noxious weeds. Failure to comply would be (is) justification for the Grantor to terminate the easement."

ROW permits issued by federal land-management agencies for power lines and other utility infrastructure commonly include conditions requiring the management of noxious weeds. The typical condition reads similar to the following:

> If the Authorized officer determines that noxious weeds on the right-of-way area are the result of the grant holder's activity, the grant holder is responsible for immediate control and eradication of the noxious weeds.

Additionally, IPC is typically required to have an operations and maintenance (O&M) plan for these ROWs that, among other things, details how the company will prevent and control the spread and proliferation of noxious weeds within ROWs. Compliance with these stipulations and plans is not optional or voluntary.

2.3. Herbicide Application Requirements and Risks

2.3.1. Herbicide Applicator Requirements

IPC employees and contractors applying herbicides to control noxious weeds and other undesirable vegetation must have the knowledge and education necessary to ensure safe working procedures and ensure conformance with pertinent laws and codes including Occupational Safety

and Health Administration (OSHA) standards and state and local laws. Both employers and employees are legally obligated to comply with OSHA safety and health standards described under Public Law (P.L. 91-596), more commonly known as the Occupational Safety and Health Act of 1970, as amended.

License requirements to apply and supervise the application of herbicides differ in Idaho and Oregon based on the type of herbicide used (general-use versus [vs.] restricted-use) and the type of application equipment used (hand-held vs. machine-powered).

- ***General-use pesticides*** are pesticides that can be purchased and used by the general public. They are considered to have a lower hazard or risk to the user, or the environment, than restricted-use pesticides.

- ***Restricted-use pesticides*** are pesticides that can be purchased only by certified pesticide applicators, and used only by certified pesticide applicators or persons directly under their supervision. These pesticides are not available for use by the general public due to their high toxicity and/or environmental hazards. Herbicides are a class of pesticides that target vegetation.

In Idaho, employees who apply general-use herbicides on IPC property are not required to have an applicator's license. However, an IPC employee who applies restricted-use herbicides, or applies any herbicide on non-IPC property, is required to be licensed.

In Oregon, the only pesticide application activity that can occur without a license is hand-application (hand tank or backpack sprayer) of general-use pesticides on IPC property. The following activities all require an applicator to be licensed: use of any machine-powered applicator (e.g., all-terrain vehicle [ATV] or truck-mounted sprayer); application of any herbicide on non-IPC property; and, applying restricted-use herbicides, regardless of property ownership and application method. If an applicator's license is required, as a corporation, IPC staff who are leading herbicide spraying projects are required to have a ***professional*** applicator's license in each respective state wherein our service area lies.

Licensed employees of IPC are required by law, in both Idaho and Oregon, to keep thorough records of each herbicide application. One such IPC herbicide application record is available in the Standard Operating Procedures for the Safe Storage, Use, and Disposal of Herbicides (Appendix A) for documenting required, pertinent information. The form is designed to meet the reporting requirements of both Idaho and Oregon. Licensed employees should complete the form in full to ensure compliance with reporting laws in both states within 24 hours after completing a spray project.

In addition to IPC herbicide application records, licensed employees must complete federal pesticide application report forms whenever applications are made on lands under the jurisdiction of the Bureau of Land Management (BLM) or the U.S. Forest Service (USFS). At the end of the spray season, licensed employees must submit copies of all report forms to the appropriate agency office where the spraying project took place. In addition, a pesticide-use proposal (PUP) may be required to be submitted and approved prior to applying herbicide on federal lands. The appropriate federal agency's local field office should be contacted prior to spraying.

IPC must have an active PUP on file with the BLM to apply herbicide on lands administered by the BLM. The PUP lists all the pesticides IPC may use on BLM lands. The pesticides listed must be consistent with the Idaho-approved list of pesticides. If the company wants to add a new herbicide to its PUP, it must submit an entirely new PUP and have it reviewed and approved by the Idaho office of the BLM. The PUP is good for 3 years.

More details on these and other required processes are available in the Standard Operating Procedures (SOP) for Safe Storage, Use, and Disposal of Herbicides (Appendix A). The SOP document was developed by IPC's Environmental department to help ensure compliance with the proper storage, use, and disposal of herbicides as required by law.

2.3.2. Risk Associated with Application of Herbicides

All pesticide applications, including herbicides, carry some legal risk. Drift onto organic crops, bee colonies, people, pets, farm animals, and waterways are some of the particularly sensitive areas of potential liability. Pesticide law is complex and extensive and is evolving rapidly as science increasingly supports the association between chemicals and crop and bee colony destruction; illness or death to persons, livestock, and pets; water pollution; and toxicity. Strict adherence to herbicide label requirements and appropriate notification to the public is critical to managing such risk.

Risks associated with treating, and not treating, noxious weeds include:

- Liability issues associated with treating noxious weeds on private property.
- Liability issues associated with public contact or adjacent private property when treating noxious weeds on federal and state lands.
- Perception that IPC is not a responsible land steward if it does not treat noxious weeds that are perceived to be a result of IPC activities.
- Potentially more regulatory requirements if IPC is perceived as reducing voluntary, noxious-weed control efforts.
- Increased and/or unanticipated project costs as a result of investigating and responding to complaints on private property.

There are several safety issues to consider before applying an herbicide. Safety precautions should be taken ***before*** herbicide applications begin. It is each applicator's responsibility to learn and apply the necessary and desirable safety precautions.

Before loading herbicides for a project, IPC employees must ensure all containers have clearly readable, original labels. IPC licensed employee applicators will also obtain and carry copies of the label and corresponding Material Safety Data Sheets (MSDS) for each chemical to be used in the field.

IPC employees must remember that ***the label is the law!*** Employees must carefully follow all instructions and precautions printed on herbicide labels. Failure to do so constitutes a violation of federal law. Employees must read all label precautions and review the following items ***before*** mixing or applying any herbicide:

- Active ingredient(s)
- Restricted vs. general-use pesticide
- Selectivity in plants
- Necessary personal protective equipment (PPE)
- Hazard category; hazard to humans; environmental hazards
- Practical treatment procedures for exposure
- Grazing restrictions
- Re-entry restrictions
- Directions for use, storage, and disposal

Additional application and safety procedures are detailed in the Standard Operating Procedures (SOP) for the Safe Storage, Use, and Disposal of Herbicides (Appendix A).

2.3.3. Herbicide Contractor Requirements

Due to the environmental and legal risk associated with the application of pesticides, including herbicides, it is critical that the correct contract is executed with a supplier before work is started. Enterprise Contracting will establish contractor agreements involving application of any pesticide.

3. ROLES AND RESPONSIBILITIES

3.1. Environmental Affairs

3.1.1. Terrestrial Section

The Terrestrial section of IPC's Environmental Affairs department is responsible for managing noxious weeds and related programs associated with Federal Energy Regulatory Commission (FERC) hydroelectric licenses. This responsibility applies to company lands within the FERC project boundary designated as special-management areas, resource conservation or protection areas, and utility corridors as identified in the applicable land management plan for each hydroelectric facility. Terrestrial is responsible for the budgeting and reporting required to meet these FERC compliance responsibilities.

Terrestrial also is responsible for implementing applicable noxious-weed control measures on transmission line ROWs as a service to the Project Management and Transmission and Distribution Maintenance (T&D Maintenance) departments in Delivery. These Delivery departments are responsible for budgeting and covering the cost of weed-management activities on transmission line ROWs and construction projects. Land Management Services (LMS) will provide landowner contact and notification support, if applicable, for these activities.

3.1.2. Recreation Section

The Recreation section of IPC's Environmental Affairs department is responsible for managing noxious weeds within developed IPC parks. Recreation may also assist Power Plant Maintenance with other weed-management activities (e.g., power-plant communities), but those activities will be agreed to on a case-by-case or annual planning basis.

3.2. Power Plant Maintenance

The maintenance group associated with each power plant facility is responsible for the budgeting and implementation of noxious-weed control efforts associated with power-plant communities, along company-owned roads, areas designated as "utility" in FERC land management plans, and other power-plant facilities other than substations.

3.3. Corporate Facilities

IPC's Corporate Service's Facilities department is responsible for noxious-weed control at substations, non-power plant IPC facilities, and other company-owned lands not covered under the responsibilities detailed above.

4. IMPLEMENTATION POLICY

This policy is intended to provide a consistent approach to controlling noxious weeds resulting from IPC activities associated with the construction or maintenance of transmission lines and the management of IPC facilities, power plants, and parks.

Because distribution lines are constructed at the request of a customer, noxious-weed control associated with construction or maintenance activities for these lines are the responsibility of the landowner and/or customer, unless the lines are built on federal lands and IPC is the ROW permit holder. Similarly, noxious-weed control for existing distribution lines where IPC receives a complaint or needs to conduct maintenance are the responsibility of the landowner and/or customer.

4.1. Existing Transmission Lines

Maintenance vehicles, ATVs, and other equipment have the potential to transport weed seeds from one area to another via dirt and debris that inadvertently collects on the equipment.

Prior to beginning a project, whether construction- or maintenance-related, the responsible party must clean all vehicles and equipment—by pressure washing or steam cleaning—that will operate off-road or be involved in ground-disturbing activities Tracks, skid plates, and other parts that can trap soil and debris should be removed for cleaning when feasible, and the entire vehicle and equipment must be cleaned before entering another site. Cleaning may occur at company or commercial cleaning facilities.

To help limit the spread and establishment of noxious-weed species in disturbed areas, desired vegetation needs to be established promptly. IPC will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities during the optimal period for reseeding. Seed and mulch will be certified "noxious-weed free."

If noxious-weed species occur within IPC's ROWs or on service roads as a result of company activities, IPC will coordinate treatment with the appropriate landowner. When determining the necessity for treatment, IPC and other appropriate parties should consider the surrounding area, site conditions, the level of weed-control activities being conducted by other parties, and the potential risk for weed establishment and spread associated with IPC's activities. In many instances, weeds in the ROWs have nothing to do with IPC's activities but reflect other land-use activities or management actions. If weed control treatments are determined to be appropriate, applicable treatment options that return the land to, at a minimum, pre-project conditions should be developed with the participation of the parties involved (landowners, agencies, etc.)

4.1.1. Non-IPC Private Property

IPC does not have a statutory duty to control noxious weeds on lands where company facilities are associated with non-exclusive easements. The extent to which IPC agrees to treat noxious weeds depends on project-specific details. The following processes and guideline are intended to assist in making those determinations.

Prior to conducting noxious-weed control on private property, IPC must be contacted by the landowner, county weed superintendent, Idaho State Department of Agriculture (ISDA), or IPC staff regarding a problem. Environmental Services, a program within IPC's Environmental department, will evaluate the property to determine if company activities have led to noxious-weed problems and, if so, develop a treatment plan. When conducting the evaluation, staff will consider the age of the line, the last time the ROW was disturbed (e.g., disturbance may have been recent, when maintenance was conducted), and the associated past and present land-use practices.

If an adjacent area has similar weed species and density and/or the landowner has conducted activities that can lead to weed infestations, then it is not likely that IPC is responsible for the problem. If an adjacent area is relatively weed-free and the property owner has ongoing actions to control weeds, then it is likely that IPC has some responsibility for noxious-weed control. If weeds are only in an area disturbed by IPC, then it is a responsibility of the company.

Private property will be treated for a maximum of 2 years following the disturbance. Private property will only be treated once per year (late spring\early summer). Each year,

property owners will need to sign a waiver limiting/releasing IPC from liability for applications to be made on their lands.

Environmental Services will schedule, coordinate contracting, if applicable, and implement control measures as deemed appropriate.

Options for treatment include the following:

- Reimburse the property owner for treatment of the weeds. The private property owner may spray the weeds themselves (i.e., they will be reimbursed for materials and/or time) or hire a contractor of their choosing (i.e., the contractor will be under contract to the landowner and not IPC). Challenges with this approach include appropriate processes and controls for reimbursement (e.g., maximum costs, area of treatment, number of treatments, need for competitive bids, etc.) and validation of compliance.

- Request that the county weed department treat the weeds and bill IPC. The applicability of this option largely depends on the resources available in the county weed department and the size and scale of the problem.

- Hire and oversee a contractor to treat the problem area. Environmental Services will coordinate and oversee contractor work. The landowner will be contacted ahead of time and be provided a list of herbicides that may be used on the property, information regarding label restrictions, and contact information for the county weed superintendent. Prior to treatment, the landowner must sign a waiver limiting IPC's liability. LMS will be responsible for contacting private property owners, obtaining the waiver of liability, and notifying Environmental Services as to which parcels can be treated and of any restrictions or limitations that have been agreed to with the property owner.

- Treat the weeds using company staff or contractors as applicators. The landowner will be provided a list of herbicides that may be used on the property, information regarding label restrictions, and contact information for the county weed superintendent. Prior to treatment, the landowner must sign a waiver limiting IPC's liability. LMS will be responsible for contacting private property owners, obtaining the waiver of liability, and notifying Environmental Services as to which parcels can be treated and of any restrictions or limitations that have been agreed to with the property owner.

4.1.2. Federal and State Lands

Federal Lands

IPC is responsible for complying with BLM ROW grants or USFS special-use permit (SUP) stipulations. If no requirements have been specified, then complaints or requests to treat areas will be addressed on a case-by-case basis with the federal agency. However, most grants and permits contain a condition or stipulation that typically reads similar to the following:

> The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer

and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).

IPC should strongly resist agreeing to grants or permits that include stipulations making the company responsible, regardless of cause, for weed control within the entire ROW. IPC's land-use rights are not exclusive and, therefore, the company should not assume responsibility for weeds resulting from the actions, or inaction, of others. IPC should also work to ensure the stipulation requires treatment of the land to pre-disturbance conditions and not the eradication of noxious weeds.

State Lands

Grants for ROW on State of Idaho lands include the following requirement:

> "It is understood and agreed that the Grantee shall take measures to control noxious weeds within the easement boundary in accordance with Title 22, Chapter 24, Idaho Code. The Grantee shall cooperate with any state or other agency authorized to undertake programs for control or eradication of noxious weeds. Failure to comply would be (is) justification for the Grantor to terminate the easement."

IPC will not actively survey existing lines that occur on state-managed lands. IPC will respond to complaints on a case-by-case basis.

When determining an appropriate response to complaints on federal or state lands, IPC will consider the degree to which company activities caused or contributed to the establishment or spread of noxious weeds. IPC staff or a contractor (hired and managed by IPC) will treat federal or state lands. Treatment options will need to consider herbicides approved for use on federal and state lands, necessary permits and approvals, additional reporting requirements, and alternatives to spraying (e.g., mechanical methods; participation in a Cooperative Weed Management Area (CWMA) project, etc.).

4.2. Transmission Line Construction Projects

For new construction, Project Management will coordinate noxious-weed control measures with Environmental Services and T&D Maintenance during the permitting and design phases of a project. Coordination activities should include the following:

- Identification of measures to reduce the possible spread and introduction of noxious weeds.
- Budgeting and scheduling of pre-construction surveys to document species and abundance of noxious weeds within the areas to be disturbed. The survey will also identify noxious weeds adjacent to the project area and identify land uses and practices that can contribute to the introduction, spread, and persistence of noxious weeds.
- Pre-construction treatment options, if appropriate (e.g., spraying large weed infestations prior to disturbance).

- Post-construction measures (e.g., reseeding and/or restoration of the site).
- For private property, identification of special conditions or restrictions in easements or as otherwise agreed to by IPC ROW agents or project staff.

Budgeting for noxious-weed survey, control, and mitigation occurring during the construction phase is the responsibility of Project Management. Adherence to agreed-upon weed-control efforts during construction is the responsibility of the project manager and construction inspector. Following the project being put in-service, budgeting for ongoing treatment and monitoring is the responsibility of T&D Maintenance.

4.2.1. Non-IPC Private Property

IPC should avoid including noxious-weed treatment conditions in individual easements. However, the company recognizes that it has a stewardship obligation to treat noxious weeds on private lands resulting from its activities. An increase in noxious weeds may affect an owner's farm or ranch commodity income, property value, decrease wildlife habitat, and could lead to landowner resentment toward IPC that could affect customer satisfaction and future land rights negotiations. If agreed to by the landowner, treatments should be for no more than 2 years. All agreements must be documented and accessible to all company departments involved in the project. Otherwise, the same guidelines for treatment, notification, and internal coordination used for existing lines on private property will be followed for new construction on private property.

4.2.2. Federal and State Lands

On several recent transmission line construction projects involving federal lands, IPC has been required to implement a long term (5–7 years) noxious-weed mitigation plan that includes annual treatment, monitoring, and reporting. This requirement is expected to become more common; the BLM has indicated that long-term weed control will be a requirement for the Gateway West and Boardman to Hemingway (B2H) 500-kilovolt (kV) projects.

Following construction, treatment of noxious weeds on federal and state lands is the responsibility of Environmental Services, in coordination with T&D Maintenance. Federal agencies may require a noxious-weed mitigation plan, as described above, as part of the construction permitting. IPC should argue that such agreements be for a term of no more than 5 years—preferably for 2 years—or be based on meeting specific performance standards tied to pre-project conditions.

LMS is responsible for reviewing new ROW grants and SUPs, in coordination with T&D Maintenance and Environmental, for appropriate stipulation language. In addition, LMS should negotiate with agencies to ensure they only require IPC to treat—to pre-disturbance conditions—noxious weeds that company activities may have caused or contributed to (e.g., ground-disturbing actions or weeds brought in on vehicles).

Environmental Services will either conduct the surveys and spraying or hire and oversee a contractor to do the work, and will coordinate all activities, including compliance reporting, with the appropriate federal agencies.

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Appendix A
Standard Operating Procedures (SOP) for the Safe Storage, Use, and Disposal of Herbicides

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IDAHO POWER®
An IDACORP Company

Standard Operating Procedures (SOP) for Safe Storage, Use, and Disposal of Herbicides

IPC Terrestrial Department

SOP Procedures Manual

August 2011

All Idaho Power Projects; Various Service Area Locations

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FOREWORD

This manual describes Idaho Power Company's (IPC) Standard Operating Procedures (SOP) for the safe and legal use, storage, and disposal of herbicides. Employees who participate in herbicide treatment of terrestrial plants are responsible for understanding and complying with the general contents of this manual.

While compliance with this manual will help ensure safe working procedures and conformance with pertinent laws and codes, the OSHA standards, state, and local rules govern in all cases. Both employers and employees are legally obligated to comply with OSHA safety and health standards. The Occupational Safety and Health Act of December 29, 1970, Public Law 91-596 (OSH Act of 1970), under "Duties of Employers and Employees," states the following:

> *Each employer under the ACT has the general duty to furnish each of his employees employment and places of employment free from recognized hazards causing, or likely to cause, death or serious physical harm; and the employer has the specific duty of complying with safety and health standards promulgated under the Act. (Section 5 (a))*
>
> *Each employee has the duty to comply with these safety and health standards, and all rules, regulations and orders issued pursuant to the Act, which are applicable to his own actions and conduct. (Section 5 (b))*

Supervisors and employees have the major responsibility to recognize and eliminate unsafe work practices ***before*** an accident or injury occurs. Unsafe work practices include, but are not limited to, careless or willful acts, horseplay or practical jokes, misuse of equipment, and failure to use proper lifting techniques. As IPC employees, your most important responsibility in your daily work is observing safe practices, both for your protection and that of your fellow workers.

TERMINOLOGY

Pesticides versus Herbicides

Pesticides are chemicals or other agents used to kill or otherwise control pests or to protect something from a pest.

Herbicides are a specific class of pesticide used to kill or inhibit plant growth. Herbicides are the only class of pesticides handled by the Terrestrial Department of IPC.

To keep terminology consistent with that of local, state, and federal pesticide laws, the term pesticide is used throughout this manual instead of the term herbicide. Employees must keep in mind, however, that ***this manual only covers the safe storage, use, and disposal of herbicides and is not intended as a guide for any other class of pesticides.***

1. PESTICIDE LICENSING

1.1. License Requirements

License and supervision requirements differ in Idaho and Oregon based on the type of pesticide used (general use vs. restricted use) and the type of application equipment used (hand-held vs. machine-powered). **General-use pesticides** are pesticides that can be purchased and used by the general public. They are considered to have a lower hazard or risk to the user or the environment than restricted-use pesticides. **Restricted-use pesticides** are pesticides that can be purchased only by certified pesticide applicators, and used only by certified pesticide applicators or persons directly under their supervision. They are not available for use by the general public because of their high toxicity and/or environmental hazards.

1.1.1. Idaho

Within Idaho, employees are not required to be licensed or supervised to apply general use pesticides when using hand-held or machine-powered equipment, as long as applications are made on IPC property or easements, and are made in a safe and legal manner.

Within Idaho, employees may apply restricted-use pesticides using hand-held or machine-powered equipment only if one of the following criteria is met:

- The employee holds a valid Idaho State Department of Agriculture (ISDA) **Professional Applicator's License**; or
- The employee is under the direct supervision of a licensed applicator (**direct supervision** is defined as having a certified applicator physically on the application site and within sight and normal speaking voice distance from the unlicensed applicator).

To qualify as a **Professional Applicator**, an employee must be eighteen (18) years or older, pass the required certification examinations, and show proof of minimum insurance for liability (see Section 1.2 Insurance Requirements). Certification examinations are administered by the ISDA. Professional certification categories required for company licensees include: Laws and Safety and Agricultural Herbicide. The ***Laws and Safety*** exam covers general knowledge of pesticides, their use and disposal, first aid, labeling and laws. The ***Agricultural Herbicide*** exam covers herbicide applications in agricultural fields, rights-of-way, forests, and rangelands.

1.1.2. Oregon

Within Oregon, employees are not required to be licensed or supervised to apply general use pesticides with hand-held equipment, as long as applications are made on IPC property or easements, and are made in a safe and legal manner. However, licenses ARE required for applications of general use pesticides made with machine-powered equipment in Oregon.

Within Oregon, employees may apply restricted-use pesticides using hand-held or machine-powered equipment ***only*** if the employee holds a valid Oregon Department of Agriculture (ODA) ***Public Pesticide Applicator License.***

Non-licensed employees are not allowed to apply restricted-use pesticides under any circumstances and are not allowed to apply general use pesticides using machine-powered equipment. The Oregon Pesticides Law does not provide for non licensed persons to apply pesticides under the supervision of licensed applicators.

To qualify as a ***Public Pesticide Applicator***, an employee must pass the required certification examinations. Certification examinations are administered by the ODA. Professional certification categories required for company licensees include: ***Laws and Safety*** and ***Regulatory Weed Control.*** Employees applying pesticides on the Daly Creek WMA and other agricultural properties owned by IPC in Oregon are also required to have the ***Agricultural Herbicide*** certification. The Laws and Safety exam covers general knowledge of pesticides, their use and disposal, first aid, labeling and laws. The Regulatory Weed Control exam covers the use of pesticides for the control of plants designated as noxious weeds. The Agricultural Herbicide certification covers use of pesticides in an agricultural environment.

1.2. Insurance Requirements

Applicator licenses are not valid in Idaho or Oregon without proof of financial responsibility. All licensees are required to provide proof of such. IPC's company insurance policy covers employees while on duty. Employees are **NOT** covered, **NOR** are their licenses valid during off-duty periods.

Company insurance coverage information is annually provided to the ISDA and the ODA. Information is also on file in the Property Insurance and Casualty Department at IPC corporate headquarters in Boise. The point of contact for questions regarding insurance issues is Tim Tucker, IPC Property Insurance and Casualty Administrator, 208-388-2287.

1.3. Recertification Requirements and Tracking

The goal of recertification programs is to provide training for applicators that will continually increase their level of competency. Both Idaho and Oregon offer a variety of recertification training opportunities. In Idaho, the recertification period is simultaneous with the two-year licensing period. In Oregon, the recertification period is five years, while the licensing period is one year.

1.3.1. Idaho

To maintain certification in Idaho, licensees must complete a specified amount of recertification training within the licensing period. Applicators may recertify by: 1) attending ISDA-approved pesticide recertification training courses and accumulating credits; or 2) by passing a

recertification test in the necessary categories. The requirement for recertification credits for professional categories is 15 credit hours during each two-year licensing/certification period.

Employees holding Idaho licenses will review their recertification status by September 30 of each year so that recertification credits can be maintained and /or received prior to license expiration. Employees are encouraged to maintain a list of the dates and locations of the recertification seminars they attend, in case their license is lost or destroyed during the licensing period.

1.3.2. Oregon

To maintain certification in Oregon, licensees must complete a specified amount of recertification training within the 5-year certification period. Applicators may recertify by: 1) accumulating the required number of credit hours of continuing education training approved by the ODA; or 2) by retaking and passing recertification tests in the necessary categories. Public applicators must obtain a total of 40 credit hours by December 31 of the last year of the certification period. Applicators cannot obtain more than 15 credit hours per calendar year.

Applicators licensed in Oregon will access the ODA Web site to obtain Pesticide Credit Hour Reports to review and maintain their own recertification status.

1.4. Reciprocity

1.4.1. Idaho

The Idaho Pesticides Law provides that the ISDA may issue a Professional Applicator or Private Applicator (Restricted Use [RU] only) license to a non-resident who holds a similar current license in another state. Idaho has reciprocal agreements with the following states:

Montana

Oregon

Utah

Washington

Wyoming

To become licensed in Idaho through a reciprocal agreement, an individual must:

- Be a non-resident of Idaho who resides in, and currently holds a pesticide license from, one of the aforementioned states;
- Provide ISDA with a photocopy of the current license, showing which categories are held;
- Complete an ISDA license application form;

- Provide proof of financial responsibility (if seeking a Professional Applicator license); and
- Pay the appropriate license fee.

Individuals who move to Idaho after having been issued a reciprocal license must take and pass the Idaho exams to maintain their license. Idaho residents who hold pesticide licenses in other states must pass the Idaho pesticide exams to license in Idaho.

1.4.2. Oregon

The Oregon Pesticides Law does not provide for reciprocal agreements with any states.

1.5. Licensee Responsibilities

Employees holding pesticide applicator licenses in Idaho or Oregon will present himself/herself in a professional manner when representing the company at cooperative projects, meetings, or other public gatherings. Employees will be on time to projects and meetings, will be properly attired when spraying pesticides, and will demonstrate knowledge of safe and proper application techniques.

Licensed employees must ensure compliance of non-licensed individuals under their direct supervision. Penalties for non-compliance by supervised individuals are ultimately the responsibility of the licensed supervisor.

1.5.1. Idaho

Employees holding Idaho Professional Applicator licenses must be knowledgeable of, and compliant with, the following laws:

- Idaho Statutes: Title 22–34: Pesticides and Chemigation (the process of injecting a chemical into irrigation water and applying it [the chemical] through the system to the crop or field)
- Idaho Administrative Procedures Act (IDAPA) 02.03.03: Idaho Department of Agriculture Rules Governing Pesticide and Chemigation Use and Application

1.5.2. Oregon

Employees holding Oregon Public Applicator licenses must be knowledgeable of, and compliant with, the following laws:

- Oregon Revised Statutes: Chapter 634: Pesticide Control
- Oregon Administrative Rules: 603-57: Pesticide Control

1.6. Required Competencies for Licensed Employees

Licensed employees will demonstrate competency in the following areas:

- Labels and labeling, including terminology, instructions, format, warnings, and symbols
- Safety factors and procedures, including protective clothing and equipment, first aid, toxicity, symptoms of poisoning, storage, handling, transportation, and disposal
- Laws, rules, and regulations governing pesticides
- Environmental considerations, including the effect of climate and physical or geographical factors on pesticides, and the effects of pesticides on the environment and the animals and plants living in it
- Mixing and loading, including interpretation of labels, safety precautions, compatibility of mixtures, and protection of the environment
- Methods of use or application, including types of equipment, calibration, application techniques, and prevention of drift and other types of pesticide migration
- Pests to be controlled, including identification, damage characteristics, biology, and habitat
- Types of pesticides, including formulations, mode of action, toxicity, persistence, and hazards of use

2. Application Reporting Requirements

Licensed employees are required by law to keep thorough records for applications made in both Idaho and Oregon. Licensees must complete both sides of the IPC Herbicide Application Record for each separate application. The form is designed to meet the reporting requirements for both Idaho and Oregon and can be obtained by Josh Pearson if needed. Licensed employees will completely fill out the form to ensure compliance with reporting laws in both states. Licensed Terrestrial applicators will report all applications using the most current data dictionary or field form to comply with State requirements and environmental monitoring standards.

2.1. Submittal of Reports

In addition to the IPC Herbicide Application Records, licensed employees will complete a BLM (Bureau of Land Management) Pesticide Application Report form whenever IPC applications are made on BLM lands. IPC Herbicide Application Records and BLM Pesticide Application Report forms can be submitted to Josh Pearson for quality control. Copies of Pesticide Application Reports are filed with the appropriate BLM office, if applicable.

All Mid-Snake and CJ Strike application records will be stored in a geodatabase and can be submitted to Josh Pearson for quality control needs. Daly creek applications will be administered by Gary Holmstead and are currently stored on site with paper forms complying with State requirements.

2.1.1. Idaho

Certified Professional Applicators must maintain records of all pesticide applications. These records must be retained for a period of three (3) years following the application of the pesticide. Items to be recorded are the:

- Name and address of the owner or operator of each property treated
- Specific crop, animal, or property treated
- Location of the specific crop, animal, or property treated: i.e., the address, general legal description (township, range, and section), or latitude/longitude
- Size or amount of specific crop, animal, or property treated
- Trade name or brand name of the pesticide applied
- Total amount of pesticide applied
- Dilution applied or rate of application
- Environmental Protection Agency (EPA) registration number of the pesticide applied
- Date of application
- Time of day when the pesticide is applied
- Approximate wind velocity
- Approximate wind direction
- Full name of the person recommending the pesticide application
- Full name of the professional applicator applying the pesticide
- License number of the professional applicator applying the pesticide

2.1.2. Oregon

Public Pesticide Applicators must maintain records of all pesticide applications. These records must be retained for a period of three (3) years following the application of the pesticide.

Items to be recorded are the:

- Full name, address, and phone number of the business, firm, or person who owns or controls the crop or property sprayed. Do not use initials, nicknames, or partial names.
- Address of the site, or a geographic description of the application site (such as circle number, map number, or township/section/range), and the size of the area treated (acres, square feet, linear feet, etc.).
- Month/day/year of application, and the beginning and ending time of application.
- Full name of the person or business that supplied the pesticide. Do not use initials, nicknames, or partial names.
- EPA registration number of each pesticide product applied or the manufacturer, product name, and formulation type of each product applied.
- Amount of each pesticide product applied per unit of measure (ounces, pounds, pints, quarts, etc.).
- Type and amount of carrier applied per unit of measure (acre, square feet, etc.) or, where a specific unit of measure is not applicable, the total amount applied to the site.
- Amount and type of other material applied (such as spreader/sticker, wetting agent, or drift-retardant).
- For each pesticide product applied, the specific crop or site of application.
- Summary information of equipment, device, or apparatus.

In addition to keeping thorough application records, Oregon Statutes require Public Pesticide Applicators to annually submit a report of all pesticides applied in the state through the Pesticide Use Reporting System (PURS) found at http://www.oregon.gov/ODA/PEST/purs_index.shtml. Currently, PURS is unavailable until 2013, due to State budget constraints. Licensed, Oregon applicators shall keep updated on the status of this requirement.

2.2. Terrestrial Department Pesticide Procurement

Only employees holding an applicator license in Idaho or Oregon may purchase pesticides or related chemicals for IPC's Terrestrial Department. Each area coordinator (Josh Pearson—C.J. Strike, Gary Holmstead—Daly Creek, and Kelly Wilde or Sarah Tyrer—Boise) will maintain an inventory of chemicals stored at their herbicide storage facility using Material Safety Data Sheets (MSDS) on the Excel spreadsheet stored at TerrSect\Botany\MSDS. Employees who need to obtain additional pesticides or related chemicals shall:

- If needed, purchase and store the chemical at an approved storage facility (Refer to Section 4.1) until used.

- Check the MSDS Excel spreadsheet in TerrSect\Botany\MSDS to ensure the MSDSs are posted at the storage location and posted to IPC's Dolphin system.
- If the MSDS is not posted at the storage facility or on Dolphin, contact Sarah Tyrer, who will assist you with getting the MSDSs posted.

All vendor prices shall remain ***confidential***. Employees will not share vendor pricing for chemicals or related items with other vendors or any party outside of IPC.

3. PESTICIDE STORAGE

3.1. Storage Requirements

Proper pesticide storage helps prolong chemical shelf life while protecting the health of people, animals, and the environment. Several conditions are essential for safe pesticide storage. Remember to consult the pesticide label for storage information.

3.1.1. Idaho

ISDA's laws and rules list minimum standards for pesticide storage. These standards are based on the hazard category of each pesticide. Idaho defines four categories of hazard:

1. **Category I**: Highly toxic pesticides, with a lethal dose (LD) of LD50 of ≤50, and which require the skull and crossbones insignia and the words "Danger Poison" on the label.
2. **Category II**: Moderately toxic pesticides, with an LD50 of 51–500.
3. **Category III**: Slightly toxic pesticides, with an LD50 of 501–5000.
4. **Category IV**: Non-toxic pesticides, with an LD50 of >5000.

All pesticides used by the IPC Terrestrial Department are in Category III (slightly toxic). The department does not currently use or store Categories I, II, or IV pesticides.

ISDA guidelines for pesticide storage are as follows:

- Pesticides will be stored in a secure location, out of the reach of children, pets, livestock, and irresponsible people.
- Pesticides will be stored in a ***locked and posted enclosure*** and will be located where potential damage or contamination to ground and surface water is unlikely.
- Pesticide storage areas will be well ventilated and pesticides will be kept cool, dry, and out of direct sunlight.

- Pesticides will be stored away from food, feed, potable water supplies, veterinary supplies, seeds and protective equipment, to prevent contamination from fumes, dusts, or spills, and reduce the likelihood of accidental human or animal exposure.

- Pesticides will be stored in their ***original containers*** with the ***original label attached*** to the container.

- Pesticide containers will be securely closed when not in use.

In Idaho, all pesticides managed by IPC's Terrestrial Department will be kept at either the Boise Bench warehouse on spill-proof pallets, or in a locked pesticide storage container on spill-proof pallets at the C.J. Strike Wildlife Habitat Management Area (WHMA) headquarters.

Herbicides are also stored at various IPC plant sites and associated parks. It is the responsibility of the individual site managers to ensure that herbicide storage locations comply with ISDA guidelines.

3.1.2. Oregon

ODA laws are similar to those of the ISDA. The main difference is that in Oregon, all regulated facilities must submit an annual chemical inventory to the Office of the State Fire Marshal ***if*** the inventory includes:

- Any chemical requiring a MSDS that is stored at the facility in quantities equal to, or greater than, 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for gasses; and/or

- Extremely hazardous chemicals stored in quantities of 500 pounds (or 55 gallons) or more, or in a quantity that exceeds the Threshold Planning Quantity (TPQ), whichever is less; and/or

- Any chemical labeled as poison that is stored in the facility in quantities equal to, or greater than, 5 gallons for liquids, 50 pounds for solids, and 20 cubic feet for gasses.

In Oregon, IPC's Terrestrial Department will store all pesticides on spill-proof pallets in a heated and locked facility at the Daly Creek WHMA. No extremely hazardous or poisonous chemicals will be stored at any of IPC's Terrestrial Department facilities.

Herbicides are also stored at various Oregon power plant sites and associated parks. It is the responsibility of the individual site managers to ensure that herbicide storage locations comply with ODA guidelines.

3.2. IPC Storage Facilities

To ensure that storage requirements are met in both Idaho and Oregon, storage facilities will meet **ALL** of the following criteria:

- The storage facility will remain locked at all times; no pesticide will be left outside, unsecured.
- Warning signs, containing contact information for the project coordinator for each location, will be posted on all entrances and will be visible from up to twenty-five (25) feet away. Warning signs shall read "Danger; Poison Storage Area; All Unauthorized Persons Keep Out".
- Pesticides will not be stored directly on the floor; all boxes, jugs, or other containers will be placed on spill pallets or in metal chemical storage cabinets. ***DO NOT STORE CHEMICALS DIRECTLY ON ANY WOODEN FLOORS OR SHELVES.***
- Pesticides will not be stacked more than 4 boxes/containers high.
- In the event Category I or II pesticides must be stored, they must ***NEVER*** be stacked more than 2 boxes/containers high; if possible, do not stack Category I or II pesticides at all.
- MSDSs for all stored pesticides will be readily available at each storage facility.
- All personnel with access to the storage facility will be notified that pesticides are being stored at the site and will be briefed on the location of all necessary MSDSs.

3.3. IPC Vehicle Storage

Once a pesticide is in an employee's possession, it is his/her responsibility to ensure that it is safely transported. The safest way to carry pesticides is in the back of a truck with all pesticide containers firmly secured to prevent damage. Employees must ***NEVER*** store chemicals in the passenger compartment of any vehicle.

When company vehicles are used to transport pesticides, the pesticides must be attended at all times. In the event that pesticides cannot be constantly attended (e.g., during overnight stays at hotels, while dining at a restaurant, or while paying for fuel), they shall be stored in such a manner that they can be locked to prevent unauthorized persons, livestock, or animals from gaining entry.

3.4. Storage Safety

Safety when handling pesticides cannot be overly stressed. Most injuries or poisonings that are related to pesticides are the result of carelessness or failure to follow simple safety procedures. The following are guidelines for safety when handling and storing any pesticide:

- Wear the appropriate protective clothing when handling pesticide containers.
- Label all items used when handling pesticides (measuring utensils, protective equipment, etc.) to prevent their use for other purposes.
- Keep clay, kitty litter, activated charcoal, sawdust, or a similar material available to soak up spills or leaks (see Chapter 7: Pesticide Spills).
- Store volatile pesticides separately to avoid possible cross-contamination of other pesticides, fertilizers, and/or seeds.
- Have water available to wash material off in case of accidental exposure.

4. Pesticide Application Safety

4.1. Pre-Application Safety

There are several safety items to consider before making a pesticide application.
Safety precautions should be taken ***before*** pesticide applications begin. It is each applicator's responsibility to learn and apply the necessary and desirable safety precautions.

4.1.1. Pesticide Labels

Before loading pesticides for a project, employees will ensure that all containers have clearly readable, original labels. Licensed employees will also obtain and carry copies of the label and corresponding MSDS for each chemical to be transported and used in the field.

Always remember that ***the label is the law!*** Employees must carefully follow all instructions and precautions printed on pesticide labels. Failure to do so constitutes a violation of federal law. Employees will read all label precautions and will review the following items ***prior*** to mixing or applying any pesticide:

- Active ingredient(s)
- Restricted-use vs. general-use pesticide
- Selectivity in plants
- Necessary personal protective equipment (PPE)

- Hazard category; hazard to humans; environmental hazards
- Practical treatment procedures for exposure
- Grazing restrictions
- Re-entry restrictions
- Directions for use, storage, and disposal

4.1.2. Equipment Check

Before using equipment, employees will check it thoroughly to be sure that everything is working properly. Employees will:

- Check hoses for loose connections and worn spots that could leak or burst;
- Clean the screens on all filters before adding or mixing pesticides; and
- Ensure that all lids are tightly closed so that no one will be splashed, and that spray material will not leak onto the ground.

Employees will also regularly check equipment calibration to ensure that the proper amounts of pesticides are being applied.

4.2. Safety During Applications

While applying pesticides, employees must follow many safety precautions. Each employee is responsible for protecting his/herself. In addition, licensed employees are required by law to prevent direct or indirect exposure of workers and other persons, and to protect domestic animals and the environment.

4.2.1. Personal Safety Precautions

Toxicity is a material's ability to cause injury. Everything can be toxic—even coffee, salt, and water. What differentiates a substance from being harmful are exposure and dose. ***Exposure*** is the amount and period of time a pesticide touches the skin; ***dose*** is the amount penetrating the body. Even moderately toxic chemicals can cause harm when exposure is high. Proper use of PPE greatly reduces exposure to pesticides. In turn, frequent washing of exposed skin significantly reduces the pesticide dose received by the worker.

Employees will wear PPE as specified on the label of the most toxic chemical in the pesticide formulation being used. Appendix A to this procedures report lists types of PPE that fulfill the requirements specified in various label statements. In addition to wearing PPE, employees are expected to use common sense when mixing or applying pesticides.

The safety tips below provide further guidance.

- Hands and forearms experience the greatest exposure when handling pesticides. Employees will wash their hands and forearms after applying pesticides and before handling food, drink, or smoking materials. This will minimize the received dose.

- Most pesticides do not penetrate skin easily. Employees will wash their hands after handling pesticides and are encouraged to shower at the end of each workday to remove any pesticides they may have been in contact with.

- Employees will not work in spray, drift, or run-off conditions unless properly protected.

- Arms and legs: An employee will wear a long-sleeved shirt and long pants or coveralls to protect his/her arms and legs from accidental exposure when mixing or applying pesticides. Most clothes are effective in protecting the skin by absorbing much of the pesticide.

- Hands: Employees will wear unlined, chemical-resistant gloves when prolonged or frequently repeated contact may occur. Gloves are particularly important when mixing concentrates, loading spraying equipment, rinsing and handling drums, and during hand applications of pesticides. Employees will keep a supply of gloves with them at all times and will replace old gloves as frequently as needed. Employees will not wear leather, cloth, or paper gloves. Employees will wash their gloves with soap and water before taking them off at the end of the workday.

- Feet: Employees will wear rubber or vinyl boots with socks. Tennis shoes or sandals are not allowed. Employees may wear leather shoes or boots as long as they are waterproofed with a good sealant. Leather absorbs the pesticide and is very difficult to clean thoroughly.

- Eyes: Employees will protect their eyes with safety glasses, goggles, or a face shield whenever mixing or applying pesticides.

- Head: Employees are encouraged to wear a hat or other head protection to further reduce the chance for exposure. Washable hats are recommended over hats made of leather, straw, felt, etc. IPC-approved helmets are required when making off-road applications using all-terrain vehicles (ATV) and utility terrain vehicles (UTV)

- Face: Employees will wash their faces thoroughly after using pesticides and before going on to any other activity.

- Mouth: Employees will ***NEVER*** blow out clogged hoses or nozzles with their mouth! Employees will use a nylon bristle brush for cleaning hoses, nozzles, screens, etc., and will be sure any tool used for this kind of job is never used for anything else.

- ***READ THE LABEL***: A pesticide label contains information that describes how to use the product safely and effectively. This information appears on all pesticide labels. It is

vital that employees become familiar with all the information detailed on each pesticide's label before mixing or applying it.

4.2.2. Formulations

To keep application formulations consistent, employees will follow IPC's Terrestrial Department's herbicide formulation guidelines found in Appendix B (Chemical Recommendations for IPC Weed Treatments) to these procedures. These guidelines, also available at TerrSect:\Botany\Herbicides\Chemicals\2008 Herbicide Recommendations, provides recommended formulations and application timings for priority weeds. The guideline handbook will be annually updated to include any new formulations as recommended by professionals, fellow employees, or other knowledgeable persons. It is important to note that the herbicide label is still the most important guiding information when considering any recommendations.

Recommendations in the formulation guidelines are based on experience, research trials, and professional consultation and should be ***followed as closely as possible***. Applying in excess of recommended rates is wasteful and may cause necrosis before herbicides are translocated. Applying below the recommended rate is also wasteful as it promotes resistance in some plant species and requires reapplication for control.

IMPORTANT: When treating weeds on BLM and USFS lands, employees will use only approved pesticides.

4.2.3. Mixing Guidelines and Precautions

The use of concentrated chemicals during the mixing process increases the likelihood for possible exposure. When mixing or loading chemicals, employees will wear all PPE specified on the label and will heed the following mixing guidelines and precautions:

- Only employees licensed to apply pesticides in the state of the current application will mix chemicals.
- ***Read the label*** for mixing instructions and order of addition of chemicals.
- Estimate job needs carefully. Mix only as much pesticide as needed for a particular application.
- ***ALWAYS*** add some water to the tank before adding pesticide.
- When opening pesticide containers, keep them below eye level to protect eyes from splashes.
- Stand with your head well above the tank when pouring pesticides into a mixing tank. Check the wind direction before pouring to avoid pesticide blowing away from the batch container while mixing.
- Replace caps and close all containers securely when finished pouring.

- Keep the fill hose above the water level in the spray tank ***at all times*** to prevent the pesticide from back siphoning into the water supply. If this becomes an issue, it may be advisable to install a back-flow device or air-break to prevent back siphoning.

- When cleaning or calibrating nozzles, wear gloves and eye protection. Do not use your mouth to clear a clogged nozzle!

- Do not rush through the mixing process; spills often happen when workers are in a hurry.

IMPORTANT: It is the mixer's responsibility to ***triple-rinse*** or ***power-rinse*** pesticide containers as they are emptied on the job site.

To triple-rinse:

- Allow the concentrate to drain from the empty pesticide container for 30 seconds.

- Fill approximately 20 percent of the container volume with water, replace the lid, and rotate the container so all the interior surfaces are rinsed.

- Dump the rinse water into the spray tank, allowing it to drain for at least 30 seconds. ***DO NOT DUMP RINSE WATER ON THE GROUND.***

- Repeat the procedure two more times.

- Puncture triple-rinsed containers and save them for deposit in the recycle bin at IPC's Terrestrial Department's warehouse in Boise (see Chapter 6: Pesticide and Container Disposal). Designate and dedicate an appropriate tool for puncturing. Do not use personal pocketknives, Leatherman-style tools, or tools used for any other purpose, to puncture pesticide containers.

- Do not replace the cap on the jug. This allows the container to thoroughly dry.

To power-rinse:

- Using a steel-probed pesticide container-rinsing tool, place empty containers over the spray tank filling hole, puncture the container with the steel probe, and rinse the container directly into the spray tank for at least 30 seconds. Gently rotate the container while rinsing to ensure that all interior surfaces are rinsed.

- Save empty, punctured containers for deposit in the recycle bin at IPC's Terrestrial Department's warehouse in Boise.

- Do not replace the cap on the jug.

4.2.4. Application Guidelines and Precautions

When applying pesticides, employees will:

- Wear the appropriate PPE as specified on the label.
- Continually check spray patterns to ensure that pesticides are not being applied to, or drifting onto, non-target species.
- Regularly check equipment to ensure that pesticides are not leaking and are being applied evenly at pressures that are appropriate for the given weather conditions.
- Regularly check weather conditions to include wind speed, wind direction, temperature, and precipitation.
- Direct spray solutions away from people, including themselves, and avoid overhead spraying.

To minimize drift/volatilization while applying pesticides, employees will:

- Always follow application directions and adhere to warnings stated on each specific pesticide label.
- Be aware of temperature limitations on some labels (such as Banvel and some 2,4-D formulations).
- Avoid treating areas near crops or other plants that may be affected when wind speeds average more than 5 mph or wind gusts are above 10 mph.
- Eliminate fine spray droplets (less than 100 microns in size) by selecting proper equipment and using it correctly.
- Use a buffer zone or time the application to effectively protect sensitive crops or plants.
- Consider the time of day. Apply pesticides during the early morning, evening, or night hours when air movement is typically still or slight, temperatures are coolest, and relative humidity is lower. ***If inversions are a potential in the spray area***, apply pesticides in the afternoon or evening and ***avoid spraying when the air is perfectly still and calm***.
- Use spray adjuvants, surfactants, or other additives to make sure that pesticides reach and stay on the intended target. Weather conditions can drastically affect results without the proper additives to assure success.
- Cease spraying when wind speeds reach 10 mph.

4.2.5. Safe Equipment Operation

When operating company ATVs equipped for pesticide spraying, employees will:

- Drive safely and at recommended speeds.
- Wear helmets at all times while operating ATVs.
- Wear helmets and a seat belt while operating a UTV off-road
- Treat company equipment with respect.
- Remain mindful of the extra weight the pesticide solution adds to the total load. Remember: a single gallon of water weighs approximately 8.3 pounds.
- Be familiar with, and stay within the limits of, the ATV (i.e., avoid steep terrain when loaded down with water).
- Ensure that hand-gun sprayers and hoses are safely secured before driving any distance.
- Turn off machinery before making any adjustments or repairs to it.
- Release the pressure once the tank is empty and close any outlet valves/nozzles.

4.3. Post-Application Safety and Clean-up

Mixing, loading, and application equipment must be cleaned after use. Employees will budget enough time and save enough water to ensure that this is accomplished before leaving the staging area.

4.3.1. Cleaning ATV Sprayers

Employees will take care to estimate job needs carefully and mix only as much pesticide as needed for a particular application. If possible, employees will avoid storing leftover spray. If pesticide remains after the application is complete, employees will try to find another area listed on the label on which to apply the unused product. If this is not feasible, leftovers will be labeled with a tag giving the date and the exact ingredients (chemical, surfactant, fertilizer, etc.). In the event a pump fails before the entire product is emptied from a tank, employees will transfer the product, in a safe manner, to a spray tank with a functioning pump or to the pesticide waste barrel located at an approved herbicide storage site. If this is not immediately possible, label the tank with a tag providing the name(s) of the exact ingredients, date of malfunction, and a note of the type of malfunction.

When the application is complete and the ATV tanks have been emptied, employees will:

- Fill the tanks with rinse water.
- Apply the rinsate to a site specified on the label, being sure to run rinse water through all hoses, guns, and nozzles in the process. It is acceptable to apply rinsate to the same site of the original application.
- Once rinsate has been emptied, fill the tanks approximately one-quarter full with water and secure the tank lids. Pump water through all lines, hoses, and nozzles to sufficiently remove any leftover rinsate.
- Thoroughly rinse the outside of all ATVs, tanks, hoses, and trailers before transporting. Be careful to ensure that no pesticide residue remains on the outside of any equipment. Pesticide residue left on the outside of equipment creates an exposure hazard to people who may come into contact with it. In addition, there is a danger that the pesticide residue may be washed off at an inappropriate site by rainfall.
- Thoroughly rinse and remove weed seeds and residual weed material from the undercarriage of ATVs to prevent transporting weed seeds off-site.

Employees will make every effort to clean spray equipment before leaving the field. If this is not possible, they may clean pesticide-contaminated equipment at gravel storage areas of the appropriate IPC stations (Boise Bench warehouse, C.J. Strike WHMA headquarters, C.J. Strike power plant, Daly Creek WHMA headquarters, Hagerman shop, etc.).

IMPORTANT: Employees may rinse off equipment but ***WILL NOT DISPOSE OF EXCESS HERBICIDES*** at the designated facilities.

4.3.2. Cleaning Backpack Sprayers

When the application is complete, fill the backpack sprayer with rinse water and apply the rinsate to a site specified on the label. Be sure to run rinse water through the hose and nozzle. Do not refill the backpack sprayer until needed for the next application.

4.3.3. Cleaning PPE

PPE should be cleaned and removed as soon as all equipment is clean and all pesticide-handling activities are complete. Pesticide residues that remain on PPE are likely to continue to move slowly through the PPE material, even if it is chemical-resistant. If unwashed PPE is worn again, the pesticide may already be next to your skin. To reduce the chance of exposure, employees will:

- Wash the outside of their gloves with detergent and water before removing them.
- Clean all reusable PPE items between uses.

- Keep contaminated boots, gloves, respirators, etc., away from children and pets, and out of streams, ponds, or other bodies of water.
- Bring a change of clothes into the field.
- Change into clean clothes as soon as possible after pesticide-handling activities are complete.
- Take a shower at the end of each day, being sure to scrub their fingernails and wash their body and scalp thoroughly with soap and water.

4.3.4. Cleaning Pesticide-Contaminated Clothing

Launder pesticide-contaminated clothing ***daily***, keeping it apart from the family laundry. Do not wear unwashed pesticide-contaminated clothing. Employees are encouraged to launder work clothes in the following manner:

- Rinse pesticide-contaminated clothing in a washing machine or by hand.
- Wash only a few items at a time so there will be plenty of agitation and water for dilution.
- Wash in a washing machine, using a heavy-duty liquid detergent and hot water for the wash cycle.
- Rinse twice using two entire rinse cycles and warm water.
- Use two entire machine cycles to wash items that are moderately to heavily contaminated.
- Run the washer through at least one entire cycle without clothing, using detergent and hot water, to clean the machine after each batch of pesticide-contaminated items, and prior to washing any other laundry.
- Hang items to dry if possible. It is best to let them hang for at least 24 hours in an area with plenty of fresh air. When items are exposed to clean air, remaining pesticide residues will move to the surface and evaporate. ***DO NOT*** hang items in enclosed living areas.

5. PESTICIDE AND CONTAINER DISPOSAL

It is the responsibility of the pesticide user to see that pesticide wastes, such as unused chemicals and empty pesticide containers, are disposed of properly. Improper disposal of pesticide wastes can create serious hazards for both humans and the environment. Empty pesticide containers are hazardous to curious children and animals. Improperly disposed of pesticides can result in groundwater contamination and plant or crop damage.

5.1. Pesticide Concentrates

In the event of a need to dispose of pesticide concentrates, employees will do one of the following:

- If the pesticide is unopened and in its original container, return it to the dealer or manufacturer, or offer it to another qualified applicator.
- If the pesticide waste is classified as non-hazardous, it may be disposed of through the ISDA Pesticide Disposal Program (PDP). In the event that contents of a spray tank cannot be applied or transferred to another spray tank, they may be transferred to the designated waste barrel at IPC's Terrestrial Department's warehouse in Boise. The contents of the barrel will be monitored and taken, as needed, to one of the PDP sites in the area on one of the regularly scheduled dates.
- If the pesticide waste is classified as hazardous, contact Kirk Clarich, IPC Hazardous Materials Administrator, at 208-388-2436 ,for assistance.

5.2. Spray Mixes and Rinse Water

Employees will take care to estimate job needs carefully and mix only as much pesticide as needed for a particular application. If too much is mixed, it is best to apply the product in the recommended manner to another site on the label. If possible, use the rinse water from your spray tank in a future spray mix. Be extra careful with pesticide-contaminated rinse water on sensitive plants. ***NEVER dispose of pesticide-contaminated rinse water in a manner that will contaminate public or private water sources or sewage treatment facilities***; this includes public car washes, which drain into public sewage-treatment systems, and storm drains such as the one at the Engineering Compound, which drains directly into the Boise River.

IMPORTANT: Certain pesticide wastes, notably wastes containing 2,4-D at concentrations of ≥10 ppm (parts per million) (very minute concentrations), are regulated as ***hazardous wastes***. Storage and disposal of hazardous waste is ***highly regulated***. Employees will make every effort to use up all pesticides, spray mixes, and rinse water to avoid generating any type of waste.

5.3. Empty Pesticide Containers

Empty pesticide containers will be triple-rinsed or power-rinsed and punctured as they are emptied in the field (see Chapter 4: Pesticide Application Safety). Containers will be saved and deposited in a locked storage cage at approved herbicide storage sites. Containers ***WILL NOT*** be placed in the cage ***UNTIL*** they are properly rinsed and punctured. Rinsed and punctured containers can be held and recycled through the ISDA Container Recycling Operation (CROP). CROP is a free program offered by the ISDA in which clean, empty plastic containers (pesticide or fertilizer) are chipped in a mobile, self-contained chipper. The current ISDA contact for the CROP program is Bryan Allen, 208-442-2816.

IMPORTANT: Employees will be sure to carefully rinse and puncture all empty pesticide containers. Pesticide containers that have not been properly rinsed may be regulated as hazardous waste depending on their previous contents. They may require disposal as a hazardous waste.

6. PESTICIDE SPILLS

As careful as people try to be, pesticide spills can—and do—occur. The spill may be minor, involving only a leaking container, or major if the contents of a fully loaded spray tank are suddenly released because of equipment malfunction. It is very important that all users of pesticides be familiar with the laws and guidelines governing chemical spills. Your failure to respond properly to such an emergency—no matter how minor the problem appears—could seriously endanger public health and environmental quality.

6.1. Spill Prevention

A key to preventing pesticide spills is to properly maintain all vehicles and application equipment. Leaks and drips from cracks or loose fittings in equipment are indications of potential trouble. An understanding of how spray equipment works, especially a pumping system, is often essential to controlling the flow of a product and minimizing equipment damage should a problem occur. ***Safe driving and other operating habits further reduce the likelihood of a spill.***

Knowing how to safely handle pesticide spills and leaks is as important as knowing how to correctly apply the material. Always have the label and MSDS for each pesticide being used or transported. Also carry the proper equipment for spill containment and clean up, including absorbent materials; neutralizers; a shovel; PPE; clean water, soap and disposable towels; and first-aid supplies.

All persons using or transporting pesticides and other hazardous chemicals have a responsibility to protect the public and the environment. Doing everything possible to avoid spills and adhering to a few basic guidelines when handling spills and leaks can go a long way toward meeting that responsibility.

6.2. Controlling Spills

Immediate action should be taken to control the flow of the material being spilled, regardless of the source. If a sprayer has tipped over, or if a 5-gallon can on a storage shelf has rusted through and is leaking, do everything possible to stop the leak or spill. Smaller containers can be put into larger containers to prevent further release of the chemical. Torn bags can be placed into larger plastic bags. ***Do not expose yourself unnecessarily to the leaking chemical. Wear the appropriate PPE when attempting to control the leak.***

6.3. Containing Spills

At the same time the leak is being controlled, contain the spilled material in as small an area as possible. Do everything possible to keep it from spreading or getting worse. Use a hand tool, such as a shovel or rake, to construct a dam of soil or sod if necessary. If the spilled material is flowing into a ditch or depression, the flow should be blocked on all sides to reduce further movement. ***Do not allow the spilled material to enter any body of water—including storm sewers—no matter how small the spill.***

6.4. Cleaning Up Spills

If you have not already done so, spread absorbent material over the contaminated area, sweep it up, and place it in a heavy-duty plastic bag. Keep adding the absorbent until the spilled liquid is soaked up. Absorbent materials are not used for dry spills. If possible, dry spills should be swept up for reuse. If dry materials have become wet, or contaminated with soil and other debris, sweep them up and place them in a heavy-duty plastic bag.

Although IPC's Terrestrial Department does not deal with large quantities of pesticides at any one time, there may be a time when spill assistance is required. Appendix C (Important Contacts for Pesticide Spill Assistance) to these procedures lists contact information for such assistance.

7. PESTICIDE EXPOSURE

7.1. Routes of Entry

Before injuries can occur, pesticides must enter the body through one of three routes of exposure:

1) ***dermal*** (absorption through the *skin or eyes*);

2) ***respiratory*** (inhalation through the *lungs*); or

3) ***oral*** (ingestion by *mouth*).

7.1.1. Dermal Absorption

Dermal absorption is the most common route of pesticide exposure for the applicator. Contact with the concentrated product during mixing and loading presents the greatest risk of exposure. The degree of absorption depends on the properties of the pesticide, its formulation, and the parts of the body exposed. The forearms and hands are the most likely sites of pesticide accumulation during normal pesticide applications. Hands left unwashed after pesticide use can contaminate other parts of the body. The following graphic gives examples of specific body regions and their relative susceptibility to pesticide absorption. Eyes are also extremely sensitive to pesticides. They are highly absorptive, and direct eye injury can occur when pesticides are accidentally splashed in the face. Rates of absorption in the human body depend on the pesticide formulation and the exposed areas of the body.

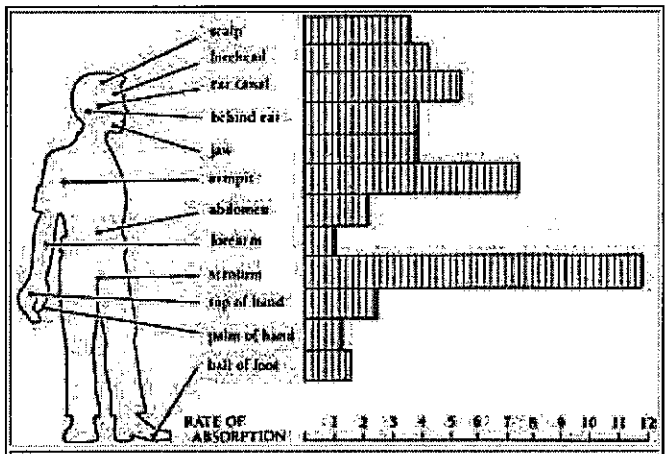

FIGURE 1. Relative susceptibility of specific body regions to pesticide absorption.

Source: The Safe and Effective Use of Pesticides. 1988. University of California, Publication 3324.

7.1.2. Respiratory Exposure

Respiratory exposure by inhalation occurs during the handling of powders, dusts, fine sprays, and gases (fumigants). The lungs provide a point of rapid entry into the bloodstream.

7.1.3. Oral Exposure

Oral exposure generally results from improper storage or handling. Keep pesticides in their original containers; ***NEVER*** transfer pesticides into bottles or food containers of any kind. This is extremely important in case of poisoning, because unmarked containers provide no instructions to medical personnel regarding pesticide class and treatment of the poisoning. Always keep pesticide containers tightly closed and out of the reach of children and animals.

7.2. Preventing Pesticide Exposure

Following are some suggestions for reducing levels of pesticide exposure and minimizing potential hazards:

- Select the safest formulation (usually granular or microencapsulated materials).
- Use a pesticide with a reduced concentration of active ingredient.
- Reduce the rate of application to the lowest effective level.
- Mix only enough pesticide to complete the assigned task.

- Select a method of application that minimizes personal contact.
- Purchase only enough pesticide to do the job.
- Wear all protective clothing stipulated on the label.
- Avoid direct contact with the pesticide when mixing and filling equipment.
- Use pesticides only in well-ventilated areas.
- Be cognizant of others around you during application. Consider their safety.
- Dispose of pesticide containers properly.
- Be attentive to re-entry intervals specified on the label.
- Always keep pesticides in their original, labeled pesticide containers.
- Avoid pesticide drift.
- Avoid conditions that might lead to ground water contamination.

7.3. Plan of Action for Acute Pesticide Poisonings

A pesticide user should establish a plan of action to follow in case of a pesticide-related accident. Advanced planning and preparation should be routine. Make sure all employees are familiar with appropriate emergency procedures.

7.3.1. Contact Medical Personnel

Step one in any poisoning emergency is to prevent further exposure and make sure the victim is breathing; then call emergency medical personnel. A list of regional poison control centers and emergency medical contacts appears in these procedures at Appendix D (Poison Control and Emergency Contact Information).

7.3.2. Maintain Vital Signs

Administer first aid while help is on the way. Maintenance of vital signs is imperative, and cardiopulmonary resuscitation techniques may be required. The cause of death of most pesticide poisoning victims is respiratory failure. Many victims will recover if the supply of oxygen to the body can be maintained. Only a doctor will have the medication and equipment necessary to properly treat a poisoning victim. Always provide attending medical personnel with a copy of the pesticide label and MSDS.

7.3.3. Eliminate Further Contamination

Ingested pesticides: If an individual swallows a pesticide, act immediately: Do not wait for symptoms to appear. The pesticide label will indicate whether or not vomiting should be induced; care should be taken to *verify* that vomiting is permissible. Never induce vomiting if the victim is unconscious or convulsive. In cases where vomiting *can* be induced safely, fast action can mean the difference between life and death for the poisoning victim.

Syrup of ipecac is useful for inducing vomiting; make sure the victim assumes a forward kneeling position or remains on his right side, if lying down, to prevent vomitus from aspirating into the lungs. Gastric lavage—performed by a physician—is another method for removing stomach contents. The latter must be performed as soon as possible—and no longer than two hours after—ingestion of the pesticide. After two hours, the pesticide will have passed into the intestine, thus requiring a different approach for effective removal of the poison. Physicians can administer absorptive charcoals to prevent the absorption of the pesticide in the intestine and promote its elimination in the feces.

It is important to remember to consult the pesticide label before proceeding with first aid. There are certain situations where inducing vomiting might only cause *additional* damage. Vomiting should not be induced if the pesticide formulation contains organic solvents or corrosives, such as strong acids and bases ,since these materials can cause serious, permanent damage to sensitive tissues of the esophagus or the lungs, if aspiration occurs.

7.4. Pesticides on the skin

Wash the pesticide off the victim as soon as possible to prevent continued exposure and injury.

- Remove clothing and drench the skin with water (shower, hose, pond, etc.).
- Cleanse skin and hair thoroughly with soap and water. (Do not abrade or injure the skin while washing).
- Dry the person and wrap him/her in a blanket.

7.5. Chemical Burns of the Skin

Taking immediate action is extremely important.

- Remove contaminated clothing.
- Wash skin with large quantities of cold, running water.
- Immediately cover the affected area loosely with a clean, soft cloth.
- Do not use ointments, greases, powders, or other drugs recommended as first-aid treatments for chemical burns.

7.6. Pesticides in the Eyes

It is very important to wash out the affected eye as quickly, but as gently, as possible.

- Hold eyelids open; wash eyes with a gentle stream of clean, running water at body temperature, if possible.
- Continue washing for 15 minutes or more.
- Do not use chemicals or drugs in wash water; they may increase the potential for injury.

7.7. Inhaled Pesticides

If the victim is in an enclosed area, wear an appropriate respirator when removing the person from the contaminated area.

- Immediately carry the victim to fresh air.
- Loosen all tight clothing.
- Apply artificial respiration if breathing has stopped or is irregular.
- Keep the victim as quiet as possible.
- If the victim is convulsing, watch breathing and protect the person from falling and striking his head. Pull the chin forward so that the tongue does not block the air passage.
- Prevent chilling. Wrap patient in blankets, but do not overheat.

8. UPDATES AND TRAINING

8.1. Annual Training

A training course will be held annually, prior to the spray season that will clearly outline the information contained in this procedures manual. All employees, whether licensed or supervised, who participate in IPC-related pesticide spraying activities should attend the training course. This procedures manual will be reviewed annually and updated as needed. Terrestrial department employees are required to take this training annually, and additionally be trained on the departments current data management and recordkeeping protocol as needed.

8.2. Tailgate Safety Meetings

Before starting a pesticide application, the organizer must brief the entire crew. At a minimum, the briefing will include a review of the:

- Job plan
- Work hazards
- Communication plan

AND review the following label information:

- Active ingredient(s)
- Restricted-use vs. general-use pesticide
- Selectivity in plants
- Necessary PPE
- Hazard category; hazard to humans; environmental hazards
- Practical treatment procedures for exposure
- Grazing restrictions
- Re-entry restrictions
- Directions for use, storage, and disposal

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Appendix A
Acceptable Types of Personal Protective Equipment

Label Statement	Acceptable Personal Protective Equipment
Long-sleeved shirt and long pants	long-sleeved shirt and long pants; or woven or non-woven coverall; or plastic, or other barrier-coated coverall; or rubber or plastic suit
Coverall worn over short-sleeved shirt and short pants	coverall worn over short-sleeved shirt and short pants; or coverall worn over long-sleeved shirt and long pants; or coverall worn over another coverall; or plastic, or other barrier-coated coverall; or rubber or plastic suit
Coverall worn over long-sleeved shirt and long pants	coverall worn over long-sleeved shirt and long pants; or coverall worn over another coverall; or plastic, or other barrier-coated coverall; or rubber or plastic suit
Chemical-resistant apron worn over coverall or over long-sleeved shirt and long pants	chemical-resistant apron worn over coverall or long-sleeved shirt and long pants; or plastic, or other barrier-coated coverall; or rubber or plastic suit
Chemical-resistant protective suit	plastic, or other barrier-coated coverall; or rubber or plastic suit
Waterproof gloves	any rubber or plastic gloves sturdy enough to remain intact throughout the task being performed
Chemical-resistant gloves	barrier-laminate gloves; or other gloves that glove selection charts or guidance documents indicate are chemical-resistant to the pesticide for the period of time required to perform the task
Chemical-resistant gloves, such as butyl or nitrile	butyl gloves; or nitrile gloves; or other gloves that glove selection charts or guidance documents indicate are chemical-resistant to the pesticide for the period of time required to perform the task
Shoes	leather, canvas, or fabric shoes; or chemical-resistant shoes; or chemical-resistant boots; or chemical-resistant shoe coverings (booties)
Chemical-resistant footwear	chemical-resistant shoes
Chemical-resistant boots	chemical-resistant boots; or chemical-resistant shoe coverings (booties)
Chemical-resistant hood or wide-brimmed hat	rubber or plastic-coated safari-style hat; or rubber or plastic-coated firefighter-style hat; or plastic, or other barrier-coated hood; or rubber or plastic hood; or full hood or helmet that is part of some respirators.
Helmet	IPC-approved helmet

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Appendix B
Chemical Recommendations for IPC Weed Treatments

Updated March 2008, by Sarah Tyrer, IPC
(Based on 2004 Chemical Recommendations by Marie Kerr, IPC)

WEED TREATMENT INDEX (alphabetical by common name):

bull thistle (*Cirsium vulgare*) ..... page 1
Canada thistle (*Cirsium arvense*) ..... pages 2–3
cheatgrass/downy brome (*Bromus tectorum*) ..... page 4
chicory (*Cichorium intybus*) ..... page 5
Dalmatian toadflax (*Linaria dalmatica*) ..... page 6
diffuse knapweed (*Centaurea diffusa*) ..... pages 7–8
field bindweed (*Convolvulus arvensis*) ..... page 9
houndstongue (*Cynoglossum officinale*) ..... page 10
jointed goatgrass (*Aegilops cylindrica*) ..... page 11
leafy spurge (*Euphorbia esula*) ..... page 12
medusahead rye (*Taeniatherum caput-medusae*) ..... page 4
musk thistle (*Carduus nutans*) ..... pages 13–14
perennial pepperweed (*Lepidium latifolium*) ..... page 15
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rush skeletonweed (*Chondrilla juncea*) ..... page 19
Russian knapweed (*Centaurea repens*) ..... page 19
Russian olive (*Elaeagnus angustifolia*) ..... page 20
Scotch thistle (*Onopordum acanthium*) ..... pages 13–14
spotted knapweed (*Centaurea maculosa*) ..... pages 7–8
teasel (*Dipsacus sylvestris*) ..... page 21
white top/hoary cress (*Cardaria draba*) ..... page 15
yellow toadflax (*Linaria vulgaris*) ..... page 6

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BULL THISTLE (*Cirsium vulgare*) CIVU
life cycle: biennial
reproduction: by seeds
commonly inhabits: pastures, roadsides, disturbed sites
noxious in: Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

½ pt/A Tordon (picloram) **+1qt/A 2,4-D** **+1qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	Rosette, bolting plants, early flowering stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift); may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical
2/3pt/A Transline (clopyralid) **+1qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; **expensive**
1oz/A Telar (chlorosulfuron) **+1qt/100 gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Powdery, dry soils & light, sandy soils should not be treated when rainfall is likely
	Comments:	Use 1pt Phase/100 gal for hand-held equipment
1oz/A Escort (metsulfuron) **+1qt/100gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Rosette stage
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal for hand-held equipment

IPC NOTES:

CANADA THISTLE (*Cirsium arvense*) CIAR
life cycle: perennial
reproduction: by seed and extensive root systems
commonly inhabits: ubiquitous
comments: dioecious (while most true thistles are monecious)
noxious in: Idaho & Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1qt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Late vegetative stage; PRE-bud
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	In the spring, pre-bud; or in the fall to regrowth
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical
1pt/A Transline (clopyralid) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Late vegetative stage; PRE-bud
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; **expensive**
3pt/A Redeem (triclopyr + clopyralid) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Late vegetative stage; PRE-bud
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; more expensive/A than Tordon

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

1.5oz/A Telar (chlorosulfuron) **+25oz/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Bud to bloom stage or to fall rosettes
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Powdery; dry soils & light, sandy soils should not be treated when rainfall is likely
	Comments:	Use of N1 surfactants with SUs is "old-school" thinking; Stafford recommends using Phase when using SUs (1 qt/100 gal. for broadcast; 1 qt/100 gal. for hand-held)

2qt/A Curtail (clopyralid + 2,4-D amine) +1qt/100gal Activator 90 (NI)	**Timing:**	Late vegetative stage; PRE-bud
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Some soil activity; grazing & water restrictions; see label
	Comments:	
2qt/A Rodeo (aquatic-use glyphosate) +2qt/100gal LI 700 (NI) +1 pt/A 2,4-D (optional)	**Timing:**	Actively growing, but past bud growth
	Habitats:	Wetland sites, non-cropland, rangeland
	Cautions:	Non-selective herbicide
	Comments:	OK to use near water; use 1.5% solution of Rodeo for hand-held equipment; Rodeo label has easy conversion chart for hand-held equipment

IPC NOTES:

CHEATGRASS/DOWNY BROME (*Bromus tectorum*) BRTE
life cycle: winter annual
reproduction: by seed
commonly inhabits: ubiquitous
comments:
noxious in: not noxious in ID or OR

or

MEDUSAHEAD RYE (*Taeniatherum caput-medusae*) TACA
life cycle: winter annual
reproduction: by seeds
commonly inhabits: ubiquitous
comments: Oregon thinks we can control this species ... right!
noxious in: Oregon (B list)

Chemicals Recommended by Dan Watts, BASF:

4–6oz/A Plateau (imazapic)	**Timing:**	PRE-emergent (fall, before germination)
+1qt/100gal MSO	**Habitats:**	Rangeland, pastures, non-cropland
	Cautions:	Non-selective herbicide; foliar and soil-activated
	Comments:	Pre-emergent use and use at lower rates will decrease injury to desired grasses/forbs
8–12oz/A Plateau (imazapic)	**Timing:**	POST-emergent (as early as possible after emergence)
+1qt/100gal MSO	**Habitats:**	Rangeland, pastures, non-cropland
	Cautions:	Non-selective herbicide; foliar and soil-activated
	Comments:	Research shows that at least 8 oz/A are needed after emergence to control cheatgrass

IPC NOTES:

CHICORY (*Cichorium intybus*) CIIN
life cycle: perennial
reproduction: by seed
commonly inhabits: roadsides, disturbed sites
comments: tasty in salads (before sprayed with picloram)
noxious in: Oregon (Not on ODA lists, but on Baker County's B list)

Chemicals Recommended by Mike Stafford at UAP:

3pt/A 2,4-D **+1 qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage is best
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	
	Comments:	
1qt/A Tordon (picloram) **+1oz/A 2,4-D** **+1 qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage is best
	Habitats:	Rangeland, pastures, nn-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	Before bud stage or early flowering
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical

DALMATION TOADFLAX (*Linaria dalmatica*) LIDA
life cycle: perennial
reproduction: by seed and roots
commonly inhabits: roadsides and rangeland
comments: deep root and waxy leaf make control difficult
noxious in: Idaho & Oregon (B list)

or

YELLOW TOADFLAX (*Linaria vulgaris*) LIVU
life cycle: perennial
reproduction: by seed and roots
commonly inhabits: rangelands, roadsides, waste places, and cultivated fields
comments: poisonous to livestock; aggressive invader
noxious in: Idaho & Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1qt/A Tordon (picloram) **+1.5oz/A Telar (chlorosulfuron)** **+1 qt/100gal Activator 90 (NI)**	**Timing:**	FALL IS BEST
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Stafford recommends using a NI surfactant rather than a silicone surfactant when mixing SUs with pyridines

Chemicals Recommended by Tom Lyons at Wilbur Ellis:

1qt/A Tordon (picloram) **+1.5oz Telar (chlorosulfuron)** **+1oz/gal Syl-Tac (NI/silicone)**	**Timing:**	Spring applications
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	For each 4-gallon BACKPACK sprayer, use 1 gram Telar, 3 oz Tordon and 2 oz Syl-Tac
1–2qt/A Tordon (picloram) **+0.5oz Telar (chlorosulfuron)** **+1oz/gal Syl-Tac (NI/silicone)**	**Timing:**	Fall applications
	Habitats:	Rangeland, pastues, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	For each 4-gallon BACKPACK sprayer, use 0.33 grams Telar, 3–6 oz Tordon, and 2 oz Syl-Tac

IPC NOTES:

DIFFUSE KNAPWEED (*Centaurea diffusa*) CEDI
life cycle: short-lived perennial
reproduction: by seed
commonly inhabits: roadsides, waste areas, and rangeland
noxious in: Idaho & Oregon (B list)

or

SPOTTED KNAPWEED (*Centaurea maculosa*) CEMA
life cycle: biennial or short-lived perennial
reproduction: by seeds (up to 25,000/plant; viable in soil for 8 years)
commonly inhabits: any disturbed soil
noxious in: Idaho & Oregon (B and T lists)

Chemicals Recommended by Mike Stafford at UAP:

1pt/A Tordon (picloram) **+1qt/A Amine 4 (2,4-D)** **+1qt/100gal Activator 90 (NI)**	**Timing:**	Spray rosette to pre-bloom in spring; if plants bloom, wait until fall to spray regrowth
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	When plants are actively growing, optimum time from rosette to the bolting or in the fall
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than Picloram but effective on similar species; NOT a restricted-use chemical
1qt/A Redeem (triclopyr + clopyralid) **+1qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage is best; add 1 qt/A 2,4-D once plants have bolted
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; more expensive/A than Tordon
1pt/A Transline (clopyralid) **+1qt/100gal Activator 90 (NI)**	**Timing:**	Rosette stage is best; add 1 qt/A 2,4-D once plants have bolted
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; **expensive**

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

3 qt/A Rodeo (aquatic-use glyphosate) **+2qt/100gal LI 700 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Actively growing plants, when most are in bud stage
	Habitats:	Wetland sites, non-cropland, rangeland
	Cautions:	Non-selective herbicide
	Comments:	OK to use near water; use 1.5% solution of Rodeo with hand-held equipment; Rodeo label has easy conversion chart for hand-held equipment

IPC NOTES:

FIELD BINDWEED (*Convolvulus arvensis*) COAR
life cycle: perennial
reproduction: by seed and creeping roots
commonly inhabits: cultivated fields, waste places, and lawns
noxious in: Idaho & Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1qt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)**	**Timing:**	6–12 inches of growth
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	Before bud stage or early flowering
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical
1qt/A Vanquish or Banvel (dicamba) **+1qt/100gal Activator 90 (NI)**	**Timing:**	6–12 inches of growth
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

3–4 qt/A Rodeo (aquatic-use glyphosate) **+2qt/100gal LI 700 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	At full bloom to early seed stage
	Habitats:	Wetland sites, non-cropland, rangeland
	Cautions:	Non-selective herbicide
	Comments:	OK to use near water; use 2% solution of Rodeo with hand-held equipment; Rodeo label has easy conversion chart for hand-held equipment
1qt/A Banvel (dicamba) + 2qt/A 2,4-D **+1qt/100gal Activator 90 (NI)**	**Timing:**	Spring to early summer to actively growing plants
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	Best control is achieved post-bloom; follow-up application should be made in spring to control seedlings

IPC NOTES:

HOUNDSTONGUE (*Cynoglossum officinale*) CYOF
life cycle: biennial
reproduction: seeds
commonly inhabits: pastures, roadsides, disturbed habitat
noxious in: Idaho (temporarily designated by ISDA; listing pending) and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1oz/A Telar (chlorosulfuron) **+1qt/100gal Phase (Silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Pre-bloom; as early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal for hand-held equipment
1oz/A Escort (metsulfuron) **+1qt/100gal Phase (Silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Bud to bloom; as early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal for hand-held equipment

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

1qt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	To actively growing plants
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species

IPC NOTES:

JOINTED GOATGRASS (*Aegilops cylindrica*) CYOF
life cycle: winter annual
reproduction: exclusively by seed
commonly inhabits: wheat fields, roadsides, waste areas, pastures
comments: interbreeds with wheat
noxious in: Idaho and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1oz/A Oust (sulfometuron) **+1qt/100gal Phase (Silicone)**	**Timing:**	Post-emergence to pre-bloom
	Habitats:	Road shoulders, rights-of-way, non-cropland
	Cautions:	Non-cropland only
	Comments:	Use 1pt/100 gal Phase for handgun; see IPC Notes below

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

1–2pt/A Roundup (glyphosate) **+1qt/A LI 700 (NI)**	**Timing:**	Post-emergence to pre-boot
	Habitats:	Non-cropland only
	Cautions:	Glyphosate is non-selective
	Comments:	This is a relatively low rate, if used early enough in the growing season, the 1pt/A rate may sting, but not permanently damage desirable perennial grasses

IPC NOTES:

LEAFY SPURGE (*Euphorbia esula*) EUES
life cycle: perennial
reproduction: by seed and vigorous roots
commonly inhabits: ubiquitous
comments: milky latex can cause irritation
noxious in: Idaho and Oregon (B and T lists)

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

2qt/A Tordon (picloram) **+1qt/100 gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Actively growing plants
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
1 pt/A Rodeo (aquatic-use glyphosate) **+2qt/100gal LI 700 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	At full bloom to early seed stage
	Habitats:	Wetland sites, non-cropland, rangeland
	Cautions:	Non-selective herbicide
	Comments:	OK to use near water; use 2% solution of Rodeo with hand-held equipment; Rodeo label has easy conversion chart for hand-held equipment

IPC NOTES:

MUSK THISTLE (*Carduus nutans*) CANU2
life cycle: bienniel
reproduction: by seeds
commonly inhabits: pastures, rangelands, roadsides, ditch banks, stream banks, waste areas
noxious in: Idaho and Oregon (B list)

or

SCOTCH THISTLE (*Onopordum acanthium*) ONAC
life cycle: biennial
reproduction: by seeds
commonly inhabits: pastures, rangelands, roadsides, ditch banks, stream banks, waste areas
noxious in: Idaho and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

½ pt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)** **+1qt/A Amine 4 (2,4-D)**	**Timing:**	Spring rosette stage; use 1pt Tordon/A after bolting
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
5oz/A Milestone (aminopyralid) **pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	Rosette and bolting plants or in fall to seedlings and +1 rosettes
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical
1pt/A Transline (clopyralid) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; **expensive**
1oz/A Telar (chlorosulfuron) **+1qt/100 gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Powdery, dry soils & light, sandy soils should not be treated when rainfall is likely
	Comments:	Use 1pt Phase/100 gal. for hand-held equipment
1oz/A Escort (metsulfuron) **+1qt/100 gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring rosette stage
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal. for hand-held equipment

1.5pt/A Redeem (triclopyr + clopyralid) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring rosette stage
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Soil activity; grazing & water restrictions; see label
	Comments:	Kinder to woody species than picloram; more expensive/A than Tordon or Telar

IPC NOTES:

PERENNIAL PEPPERWEED (*Lepidium latifolium*) LELA
life cycle: perennial
reproduction: seed and creeping roots
commonly inhabits: waste places, wet areas, ditches, roadsides, and cropland
noxious in: Idaho & Oregon (B list)

or

WHITE TOP/HOARY CRESS (*Cardaria draba*) CADR
life cycle: perennial
reproduction: root segments and seeds
commonly inhabits: alkaline and disturbed soils
noxious in: Idaho & Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

1oz/A Telar (chlorosulfuron) +1qt/100gal Phase (Silicone) +1pt/A 2,4-D (optional)	**Timing:**	Pre-bloom; as early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Many recommendations suggest spraying SUs between bud and bloom stages; Stafford suggests that a lot of people wait too late to spray this species and that earlier is better; use 1pt Phase/100 gal. for hand-held equipment
1oz/A Escort (metsulfuron) +1qt/100gal Phase (Silicone) +1pt/A 2,4-D (optional)	**Timing:**	Bud to bloom; as early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Many recommendations suggest spraying SUs between bud and bloom stages; Stafford suggests that a lot of people wait too late to spray this species and that earlier is better; use 1pt Phase/100 gal. for hand-held equipment

Other Chemicals Recommended by 2002 PNW Weed Management Handbook:

4 qt/A Amine 4 (2,4-D) +2qt/100gal Activator 90 (NI)	**Timing:**	Early growth stages
	Habitats:	Aquatic and riparian sites; non-cropland; rangeland
	Cautions:	This is a "hot" mixture; use caution around crops
	Comments:	OK to use near water; used for suppression

IPC NOTES:

POISON HEMLOCK (*Conium maculatum*) COMA4
life cycle: bienniel
reproduction: by seeds
commonly inhabits: poorly drained soils near ditch banks, stream banks, waste areas
noxious in: Idaho and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

3pt/A Weedmaster (dicamba + 2,4-D) **+1 qt/100 gal Activator 90 (NI)**	**Timing:**	Spring growth
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	OK near water
3pt/A Amine 4 (2,4-D) **+1 qt/100 gal Activator 90 (NI)**	**Timing:**	Spring growth
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	OK near water
1oz/A Telar (chlorosulfuron) **+1qt/100 gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring growth
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Powdery, dry soils & light, sandy soils should not be treated when rainfall is likely
	Comments:	Use 1pt Phase/100 gal. for hand-held equipment; OK near water
1oz/A Escort (metsulfuron) **+1qt/100 gal Phase (silicone)** **+1pt/A 2,4-D (optional)**	**Timing:**	Spring growth
	Habitats:	Rangeland, pastues, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal. for hand-held equipment; OK near water

IPC NOTES:

PUNCTUREVINE (*Tribulus terrestris*) TRTE
life cycle: annual
reproduction: by seeds
commonly inhabits: road sides, cultivated fields, pastures, waste areas
noxious in: Idaho and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

2oz/A Telar (chlorosulfuron) **(no surfactant for PRE-emergent)**	**Timing:**	PRE-emergent
	Habitats:	Non-cropland, rights-of-way, roadsides
	Cautions:	
	Comments:	Telar must be washed into the soil within 2–3 weeks when used as a pre-emergent; read label instructions carefully if you make this type of application
1qt/A Amine 4 (2,4-D) **+1qt/100 gal Activator 90 (NI)**	**Timing:**	POST-emergent; before fruit
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	
3pt/A Weedmaster (dicamba + 2,4-D) **+1qt/100 gal Activator 90 (NI)**	**Timing:**	POST-emergent, before fruit
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	
	Comments:	

IPC NOTES:

PURPLE LOOSESTRIFE (*Lythrum salicaria*) COMA4
life cycle: perennial
reproduction: by seeds and dense rhizomes
commonly inhabits: stream banks, shorelines, shallow ponds, ditches, canals
noxious in: Idaho and Oregon (B and T lists)

Chemicals Recommended by Mike Stafford at UAP:

1% solution Garlon 3A (triclopyr) **+1pt/A Amine 4 (2,4-D)** **+1qt/100gal Activator 90 (NI)**	**Timing:**	TIMING IS IMPORTANT; apply from bud to early flowering stage
	Habitats:	Non-cropland, rights-of-way, roadsides
	Cautions:	Soil activity; grazing restrictions; see label
	Comments:	BE SURE to carry the Garlon 3A supplemental label for "Wetland Sites in Production Forests and Industrial Non-Crop Areas" along with the main Garlon 3A label when spraying near water.

Other Chemicals Recommended by: 2002 PNW Weed Management Handbook:

2qt/A Rodeo (aquatic-use glyphosate) **+2qt/100gal LI 700 (NI)** **+1 pt/A 2,4-D (optional)**	**Timing:**	Actively growing plants at full to late flower
	Habitats:	Wetland sites, non-cropland, rangeland
	Cautions:	Non-selective herbicide
	Comments:	OK to use near water; use 1% solution of Rodeo for hand-held equipment; Rodeo label has easy conversion chart for hand-held equipment

IPC NOTES:

RUSH SKELETONWEED (*Chondrilla juncea*) CHJU
life cycle: perennial
reproduction: primarily by seed
commonly inhabits: roadsides, ditches, rangeland, grain fields, pastures
noxious in: Idaho and Oregon (B and lists)

or

RUSSIAN KNAPWEED (*Centaurea repens*) CERE2 [synonym: ***Acroptilon repens***]
life cycle: perennial
reproduction: by seeds and adventitious weeds
commonly inhabits: ubiquitous
noxious in: Idaho and Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

2qt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)**	**Timing:**	Fall treatments (BEST WHEN APPLIED IN FALL)
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	ONLY use the NI when rosettes are present
5oz/A Milestone (aminopyralid) **+1 pt/A 2,4-D** **+1 qt/100gal Phase (NI)**	**Timing:**	Bud stage, early flowering, or in fall to dormant plants
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Avoid drift as small amounts (even non-visible drift) may injure susceptible crops; do not apply more than 7 fl oz/A per growing season
	Comments:	Less soil activity than picloram but effective on similar species; NOT a restricted-use chemical
1qt/A Tordon (picloram) **+1qt/100gal Activator 90 (NI)** **+1pt/A 2,4-D (optional)**	**Timing:**	Actively growing plants (earlier is better)
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species

IPC NOTES: Mike Stafford suggests that fall treatments (after the growing season) are MUCH more effective. If you do treat in the fall, remember not to add 2,4-D.

RUSSIAN OLIVE (*Elaeagnus angustifolia*) ELAN
life cycle: perennial (tree)
reproduction: succors, seeds
commonly inhabits: pastures, meadows, waterways
noxious in: not noxious in Idaho or Oregon

Chemicals Recommended by Mike Stafford at UAP:

Pathfinder II or Garlon 3A (triclopyr) (diluted 50% v/v with water)	**Timing:**	To cut stumps, any time of year
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	
	Comments:	NO SURFACTANT NEEDED

IPC NOTES:

TEASEL (*Dipsacus sylvestris*) DISY
life cycle: biennial
reproduction: by seeds
commonly inhabits: irrigation canals, drainage ditches, moist sites
noxious in: Oregon (B list)

Chemicals Recommended by Mike Stafford at UAP:

½ pt/A Tordon (picloram) +1qt/100gal Activator 90 (NI)	**Timing:**	Rosette stage is best
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	Picloram = RESTRICTED-USE chemical; prolonged soil activity; grazing & water restrictions; see label
	Comments:	Hard on woody species
1qt/A Amine 4 (2,4-D) +1qt/100gal Activator 90 (NI)	**Timing:**	Rosette stage is best
	Habitats:	Rangeland, pastures, non-cropland
	Cautions:	
	Comments:	
1oz/A Telar (chlorosulfuron) +1qt/100gal Phase (Silicone) +1pt/A 2,4-D (optional)	**Timing:**	As early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal for hand-held equipment
1oz/A Escort (metsulfuron) +1qt/100gal Phase (Silicone) +1pt/A 2,4-D (optional)	**Timing:**	As early as possible
	Habitats:	Rangeland, pastures, non-cropland, rights-of-way
	Cautions:	Non-cropland only
	Comments:	Use 1pt Phase/100 gal. for hand-held equipment

IPC NOTES:

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Chemical Action/Symptomology Guide

(Selectivity, Action, Symptomology, Chemical Family, and Cautions for herbicides referenced on pgs 1–21).

2,4-D (Amine 4/Weedar 64)	selectivity: selective to annual and perennial broadleaf plants action: mimics natural plant hormones; accumulates principally at the growing points of the shoot and root symptomology: causes stem bending, twisting, swelling and elongation, leaf cupping and curling, abnormal leaf shape and venation; followed by chlorosis at growing points, growth inhibition, wilting and necrosis; death occurs in 3–5 weeks chemical family: phenoxy, phenoxyalkanoic acid or phenoxyacetic acid cautions: avoid drift to sensitive crops (especially pasture legumes)
clopyralid (Stinger/Transline)	selectivity: selective to annual and perennial broadleaf plants action: mimics natural plant hormones; accumulates at growing points symptomology: causes stem bending, twisting, swelling and elongation, leaf cupping and curling; followed by chlorosis at growing points, growth inhibition wilting and necrosis chemical family: pyridinecarboxylic acid or picolinic acid cautions: do not contaminate water for irrigation or domestic use
clopyralid + 2,4-D (Curtail)	selectivity: selective to annual and perennial broadleaf plants action: (see clopyralid and 2,4-D) symptomology: (see clopyralid and 2,4-D) chemical family: N/A (see clopyralid and 2,4-D) cautions: do not contaminate water for irrigation or domestic use; avoid drift to crops; several crops may be injured for up to 4 years after application of this product
chlorsulfuron (Telar/Glean)	selectivity: selective to annual and perennial broadleaf plants action: interferes with enzyme acetolacate synthase, resulting in rapid cessation of cell division and plant growth in roots and shoots; rapid foliar and root absorption; accumulates in meristematic areas symptomology: growth inhibited within a few hours after application with symptoms appearing in 1–2 weeks; meristematic areas gradually become chlorotic and necrotic, followed by a general foliar chlorosis and necrosis chemical family: sulfonylurea cautions: do not treat dry, powdery, light or sandy soils if there is a likelihood of rain after treatment
dicamba (Banvel/Vanquish)	selectivity: selective to annual and perennial broadleaf plants action: mimics natural plant hormones; accumulates at the growing points symptomology: causes stem bending, twisting, swelling and elongation, leaf cupping; followed by chlorosis at growing points, wilting and necrosis chemical family: benzoic acid cautions: soil residuals may last 12–18 months after application
dicamba + 2,4-D (Weedmaster)	selectivity: selective to annual and perennial broadleaf plants (see information for dicamba and 2,4-D)

glyphosate (Roundup/Rodeo)	selectivity: non-selective action: inhibits three amino acids and protein synthesis; accumulates in underground tissues, immature leaves and meristems symptomology: growth is inhibited soon after application followed by general foliar chlorosis and necrosis chemical family: none generally accepted cautions: avoid non-target species
imazapic (Plateau)	selectivity: non-selective action: need information symptomology: need information chemical family: imidazolinone cautions: need information
metsulfuron (Escort)	selectivity: selective to annual and perennial broadleaf plants action: inhibits acetolactate synthase (ALS), resulting in rapid cessation of cell division in roots and shoots; rapid foliar and root absorption; accumulates in meristematic areas symptomology: growth inhibited within a few hours after application with symptoms appearing in 1–2 weeks; meristematic areas gradually become chlorotic and necrotic, followed by a general foliar chlorosis and necrosis chemical family: sulfonylurea cautions: apply only to non-cropland, pasture and rangeland
picloram (Tordon) (restricted use)	selectivity: selective to woody and herbaceous broadleaf plants action: mimics natural plant hormones; highly translocated in roots and foliage symptomology: causes stem bending, twisting, swelling and elongation, leaf cupping and curling, abnormal leaf shape and venation; followed by chlorosis at growing points, wilting and necrosis; death occurs in 3–5 weeks chemical family: pyridinecarboxylic acid or picolinic acid cautions: RESTRICTED-USE CHEMICAL
sulfometuron (Oust)	selectivity: non-selective action: inhibits acetolactate synthase (ALS), resulting in rapid cessation of cell division; accumulates in meristems symptomology: growth is inhibited soon after application with injury appearing 2–3 weeks later; meristems gradually become chloritic followed by general foliar chlorosis and necrosis chemical family: sulfonylurea cautions: RESTRICTED-USE CHEMICAL; do not allow drift to crops
triclopyr (Garlon 3A/Pathfinder II)	selectivity: selective to woody and herbaceous broadleaf plants action: interferes with cell wall plasticity; disrupts nucleic acid metabolism symptomology: causes stem bending, twisting, swelling and elongation, leaf cupping and curling, abnormal leaf shape and venation; followed by chlorosis at growing points, wilting and necrosis; death occurs in 3–5 weeks chemical family: pyridinecarboxylic acid cautions:
triclopry + clopyralid (Redeem)	selectivity: selective to woody and herbaceous broadleaf plants (see information for triclopry and clopyralid)

References

Ahrens, W. H. (Editor). 1994. Herbicide Handbook: Seventh Edition. Weed Science Society of America, Champaign, IL. 352 p.

Callihan, R. H., and T. W. Miller. 1999. Idaho's Noxious Weeds. University of Idaho, Moscow, ID. 74 p.

Whitson, T. D. (Editor), L. C. Burrill, S. A. Dewey, D. Cudney, B.E. Nelson, R. D. Lee, R. Parker. 1999. Weeds of the West: 5th Edition. Pioneer of Jackson Hole, Jackson, WY. 630 p.

Williams, R. D., D. Ball, T. L. Miller, R. Parker, J. P. Yenish, T. W. Miller, D. W. Morishita, and P. J. S. Hutchinson (Compilers). 2002. Pacific Northwest Weed Management Handbook. Oregon State University, Corvallis OR. 420 p.

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Appendix C
Important Contacts for Pesticide Spill Assistance

HAZARDOUS MATERIALS			
National	Chemical Transportation Emergency Center (CHEMTREC)	800-424-9300 800-262-8200	http://www.chemtrec.org/Chemtrec/
	NPIC (Toxicological Information)	800-858-7378	http://npic.orst.edu/
Idaho	Bureau of Hazardous Materials		
	Emergency	800-632-8000	
	Director	208-334-3263	
	Department of Environmental Equality	208-373-0502	http://www.deq.state.id.us/
Oregon	Oregon Emergency Response System	800-452-0311	http://wellwater.orst.edu/
	Department of Environmental Equality	800-452-4011	http://www.deq.state.or.us/
STATE HIGHWAY DEPARTMENTS			
Idaho	Idaho Transportation Department	208-334-8000	http://itd.idaho.gov/
Oregon	Oregon Department of Transportation	888-275-6368	http://egov.oregon.gov/ODOT/
STATE AGRICULTURE DEPARTMENTS:			
Idaho	Idaho Department of Agriculture	208-332-8500	http://www.agri.state.id.us/
Oregon	ODA Pesticide Division	503-986-4635	http://oregon.gov/ODA/PEST/
IDAHO POWER COMPANY:			
Kirk Clarich	Hazardous Materials Admin	208-388-2436	KirkClarich@idahopower.com

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Appendix D
Poison Control and Emergency Contact Information

POISON CONTROL			
	Organization	**Phone**	**E-mail**
Western US	Rocky Mountain Poison & Drug Center	800-222-1222	http://www.rmpdc.org/
Idaho	Idaho Poison Control Center (St. Al's)	800-222-1222	http://www.sarmc.org/
Oregon	Oregon Poison Center	800-222-1222	http://www.ohsu.edu/poison/
IDAHO MEDICAL EMERGENCY CONTACTS			
American Falls	Harms Memorial Hospital	208-226-3200	http://www.harmsmemorial.org/index.htm
Blackfoot	Bingham Memorial Hospital	208-785-4100	http://www.binghammemorial.org/
Boise	St. Alphonsus	208-367-2121	http://www.sarmc.org/
Boise	St. Luke's	208-381-2222	http://www.slmc.org/
Burley	Cassia Regional Medical Center	208-678-4444	http://intermountainhealthcare.org/xp/public/cassia/
Caldwell	West Valley Medical Center	208-459-4641	http://www.westvalleymedctr.com/
Council	Council Community Hospital	208-235-4242	None
Emmett	Walter Knox Memorial Hospital	208-365-3561	http://www.wkmh.org/
Gooding	Gooding County Memorial	208-934-4433	http://www.goodinghospital.org/
Grangeville	Syringa Hospital	208-983-1700	http://www.syringahospital.org/
Idaho Falls	Eastern Idaho Regional Medical Center	208-529-6111	http://www.eirmc.org/RegInfo.asp
Ketchum	Wood River Medical Center	208-727-8800	http://www.stlukesonline.org/wood_river/
Lewiston	St. Joseph Regional Medical Center	208-743-2511	http://www.sjrmc.org/
McCall	McCall Memorial Hospital	208-634-2221	http://www.mccallhosp.org/
Mountain Home	Elmore Medical Center	208-587-8401	http://www.elmoremedicalcenter.org/
Nampa	Mercy Medical Center	208-463-5000	http://mercymedicalnampa.com/
Pocatello	Bannock Regional Medical Center	208-239-1000	
Salmon	Steele Memorial Hospital	208-756-4291	http://www.salmoncountry.net/steele/steele.html
Twin Falls	Magic Valley Regional Medical Center	208-737-2000	http://www.stlukesonline.org/magic_valley/
Weiser	Memorial Hospital	208-549-0370	http://www.weisermemorialhospital.org/
OREGON MEDICAL EMERGENCY CONTACTS			
Baker	St. Elizabeth	541-523-6461	http://www.stelizabethhealth.com/
Enterprise	Wallowa Memorial	541-426-3111	http://www.wchcd.org/index.html
John Day	Blue Mountain	541-575-1311	http://www.bluemountainhospital.org/
LaGrande	Grande Ronde	541-963-8421	None
Ontario	Holy Rosary Medical Center	541-881-7000	http://www.holyrosary-ontario.org/
Pendleton	St. Anthony's	541-276-5121	http://www.sahpendleton.org/
Halfway	Pine Eagle Clinic	541-742-5023	http://www.pinetel.com/~peclnic/
LIFE FLIGHT SERVICES			
Boise	Life Flight (St. Alphonsus)	800-521-2444	http://www.saintalphonsus.org/svc_lifeflight.html
Boise	Air St. Luke's	877-785-8537	http://www.stlukesonline.org/specialties_and_services/ASL/index.php
Boise	Life Flight (Twin Falls)	800-521-2444	
Pocatello	Bannock Life Flight	800-237-0911	http://www.portmed.org/lifeflight_membership.cfm

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APPENDIX X
LAND DESCRIPTION OF PROJECT COMPONENTS ON FEDERALLY MANAGED PUBLIC LANDS

This Appendix contains the legal description of federally managed lands crossed by the Gateway West Transmission Line Project in Wyoming and Idaho. The descriptions are separated by type of right-of-way grant requested. In addition to the temporary grants requested for workspaces that will not be needed after construction is complete, there are three long-term grants requested: (1) the transmission line ROW itself; (2) off-ROW access roads, whether new construction or existing roads managed by federal agencies crossing federally managed lands that are needed during construction, operation, and maintenance; and (3) off-ROW permanent facilities such as regeneration stations. The legal descriptions are provided based on best available information for each segment and for each element of the Project. Modifications to this Appendix will be filed as appropriate when routes are finalized and when all Project elements are definitively located. A final description will be filed with the "as-built" drawings at the conclusion of construction. Legal descriptions were prepared based on instructions found in "Specifications for Descriptions of Tracts of Land for use in Land Orders and Proclamations, USDI Bureau of Land Management Cadastral Survey, rev. 1979."

Appendix X

Land Description of Project Components on Federally Managed Public Lands

Gateway West Transmission Line Project

Prepared by:

PacifiCorp
1407 W North Temple
Salt Lake City, UT 84116

and

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702

August 15, 2013

1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies) are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts (MW) of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction of aboveground, single-circuit transmission lines involving towers, access roads, multipurpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

Segment D comprises approximately 488 miles of transmission line, two new substations, expansion at three substations and modification of three other substations beginning at the Windstar Substation in Wyoming and ending at the Populus Substation at Downey, Idaho.

Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

Appendix A, Figures A-1 shows the overall location of both Segments D and E.

This Appendix contains the legal description of federally managed lands crossed by Gateway West in Wyoming and Idaho. The descriptions are separated by type of right-of-way grant requested. In addition to the temporary grants requested for workspaces that will not be needed after construction is complete, there are three long-term grants requested: (1) the transmission line ROW itself; (2) off-ROW access roads, whether new construction or existing roads managed by federal agencies crossing federally managed lands that are needed during construction, operation, and maintenance; and (3) off-ROW permanent facilities such as regeneration stations.

The legal descriptions are provided based on best available information for each segment and for each element of the Project. Modifications to this Appendix will be filed as appropriate when routes are finalized and when all Project elements are definitively located. A final description will be filed with the "as-built" drawings at the conclusion of construction. Legal descriptions were prepared based on instructions found in "Specifications for Descriptions of Tracts of Land for use in Land Orders and Proclamations, USDI Bureau of Land Management Cadastral Survey, rev. 1979."

Bureau of Reclamation

Sixth Principal Meridian

Transmission Line ROW

	Segment
T. 20 N., R. 109 W., sec. 6, SE1/4SW1/4;	4
sec. 6, Lots 4, 5, 6;	4
T. 21 N., R. 109 W., sec. 30, SE1/4SW1/4, S1/2SE1/4;	4
sec. 30, Lot 4;	4
sec. 32, N1/2NE1/4;	4
T. 21 N., R. 110 W., sec. 26, N1/2S1/2, SE1/4SE1/4;	4

Off-ROW Access Roads

	Segment
T. 20 N., R. 109 W., sec. 18, E1/2NE1/4	4
sec. 20, SE1/4SE1/4	4
T. 21 N., R. 109 W., sec. 30, SE1/4SW1/4, S1/2SE1/4;	4
sec. 32, E1/2NE1/4	4
T. 21 N., R. 110 W., sec. 12, N1/2NE1/4, SW1/4NE1/4, E1/2NW1/4, N1/2SW1/4, SW1/4SW1/4;	4
sec. 14, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	4
sec. 22, N1/2NE1/4, SW1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;	4
sec. 24, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4;	4
sec. 26, NW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, N1/2S1/2, SE1/4SE1/4;	4

Permanent Off-ROW Facilities

	Segment
T. 20 N., R. 109 W., sec. 18, E1/2NE1/4;	4

Temporary Construction Sites

	Segment
T. 20 N., R. 109 W., sec. 6, Lot 4;	4
T. 21 N., R. 109 W., sec. 32, NE1/4NE1/4;	4

Bureau of Reclamation

Boise Meridian

Transmission Line ROW

	Segment
T. 1 N., R. 1 E., sec. 1, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	8
sec. 2, N1/2SE1/4;	8
T. 1 S., R. 4 E., sec. 13, NE1/4NW1/4;	8
T. 1 S., R. 5 E., sec. 21, NE1/4SE1/4;	8
T. 2 S., R. 6 E., sec. 23, SW1/4SW1/4;	8
sec. 26, N1/2NW1/4, SE1/4NW1/4;	8

Off-ROW Access Roads

	Segment
T. 1 N., R. 1 E., sec. 2, NW1/4SE1/4;	8
T. 1 S., R. 4 E., sec. 13, NE1/4NW1/4;	8
sec. 13, L 3	8
T. 1 S., R. 5 E., sec. 21, S1/2SW1/4, SE1/4;	8
T. 2 S., R. 6 E., sec. 23, W1/2SW1/4;	8
sec. 26, N1/2NW1/4;	8

Temporary Construction Sites

	Segment
T. 1 N., R. 1 E., sec. 2, NW1/4SE1/4;	8
T. 1 S., R. 3 W., sec. 13, NW1/4NW1/4;	9

USDA Forest Service – Medicine Bow Routt National forest
Sixth Principal Meridian

Transmission Line ROW

	Segment
T. 30 N., R. 78 W., sec. 13, W1/2NE1/4, NE1/4NW1/4, S1/2NW1/4, SW1/4;	1W
sec. 14, SE1/4SE1/4;	1W
sec. 23, NE1/4, E1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	1W
sec. 24, W1/2NW1/4;	1W

Off-ROW Access Roads

	Segment
T. 30 N., R. 78 W., sec. 13, W1/2NE1/4, E1/2W1/2, SW1/4NW1/4, SW1/4SW1/4;	1W
sec. 14, SE1/4SE1/4;	1W
sec. 23, NE1/4, E1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	1W
sec. 24, NW1/4NW1/4;	1W

Permanent Off-ROW Facilities

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

	Segment
T. 30 N., R. 78 W., sec. 23, SE1/4NE1/4;	1W

USDA Forest Service – Caribou Targhee National Forest

Boise Meridian

Transmission Line ROW	Segment
T. 11 S., R. 41 E., sec. 36, SW1/4SE1/4;	4
T. 12 S., R. 41 E., sec. 1, Unsurveyed Protracted Block 37	4
sec. 2, Unsurveyed Protracted Block 38	4
sec. 3, Unsurveyed Protracted Block 39	4
T. 12 S., R. 42 E., sec. 3, S1/2SW1/4;	4
sec. 4, NW1/4SW1/4, S1/2S1/2;	4
sec. 5, N1/2S1/2, SE1/4SE1/4;	4
sec. 6, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	4
sec. 6, Lots 5, 6;	4
sec. 10, N1/2N1/2;	4
sec. 11, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4;	4
sec. 12, S1/2N1/2, N1/2SE1/4;	4

Off-ROW Access Roads	Segment
T. 11 S., R. 41 E., sec. 25, S1/2SW1/4;	4
sec. 27, E1/2W1/2, SW1/4SE1/4;	4
sec. 34, N1/2NE1/4;	4
sec. 35, N1/2NE1/4, SW1/4NE1/4, W1/2NW1/4, SE1/4NW1/4, SE1/4SE1/4;	4
sec. 36, W1/2E1/2, E1/2W1/2, NW1/4NW1/4, SW1/4SW1/4, SE1/4SE1/4;	4
T. 11 S., R. 42 E., sec. 31, Unsurveyed Protracted Block 48	4
T. 12 S., R. 41 E., sec. 1, Unsurveyed Protracted Block 37	4
sec. 2, Unsurveyed Protracted Block 38	4
sec. 3, Unsurveyed Protracted Block 39	4
T. 12 S., R. 42 E., sec. 3, S1/2NE1/4, S1/2SW1/4, SE1/4;	4
sec. 4, NW1/4SW1/4, S1/2S1/2;	4
sec. 5, S1/2NW1/4, S1/2;	4
sec. 6, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4, SW1/4SE1/4;	4
sec. 6, Lots 1, 2, 3, 4, 5, 6;	4
sec. 8, W1/2NE1/4, SE1/4NE1/4, E1/2NW1/4;	4
sec. 9, NE1/4NW1/4, S1/2N1/2;	4
sec. 10, N1/2NE1/4, SW1/4NE1/4, NE1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	4
sec. 11, NE1/4, NW1/4NW1/4, N1/2S1/2;	4
sec. 12, SE1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, N1/2S1/2, SE1/4SW1/4;	4

Permanent Off-ROW Facilities

There are no Aliquots in this Field Office for this grant.

Off-ROW Access Roads

	Segment
T. 11 S., R. 41 E., sec. 36, SE1/4SW1/4, SW1/4SE1/4;	4
T. 12 S., R. 41 E., sec. 1, Unsurveyed Protracted Block 37	4
T. 12 S., R. 42 E., sec. 2, SW1/4NW1/4;	4
sec. 3, SE1/4NE1/4, NE1/4SE1/4;	4
sec. 6, NE1/4SW1/4;	4
sec. 6, Lots 5, 6;	4

Bruneau Field Office

Boise Meridian

Transmission Line ROW	**Segment**
T. 5 S., R. 1 E., sec. 32, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 33, S1/2SW1/4;	9
T. 6 S., R. 1 E., sec. 3, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 4, S1/2NE1/4;	9
sec. 4, Lots 2, 3, 4;	9
sec. 10, NE1/4NE1/4;	9
sec. 11, SW1/4NE1/4, NW1/4, N1/2SE1/4;	9
sec. 12, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	9
sec. 13, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4;	9
T. 6 S., R. 2 E., sec. 17, SW1/4SW1/4;	9
sec. 18, SE1/4NW1/4, NE1/4SW1/4, SE1/4;	9
sec. 18, Lot 2;	9
sec. 20, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SE1/4;	9
sec. 21, N1/2SW1/4, SE1/4SW1/4, S1/2SE1/4;	9
sec. 26, NW1/4SW1/4, S1/2SW1/4;	9
sec. 27, SW1/4NE, NW1/4NW1/4, S1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 28, N1/2NE1/4;	9
sec. 35, NE1/4, NE1/4NW1/4;	9
T. 6 S., R. 3 E., sec. 31, Lot 4;	9
T. 7 S., R. 2 E., sec. 1, Lots 1, 2;	9
T. 7 S., R. 3 E., sec. 5, S1/2SW1/4;	9
sec. 6, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 6, Lots 4, 5;	9
sec. 8, NE1/4, NE1/4NW1/4;	9
sec. 9, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 10, SW1/4SW1/4;	9
sec. 13, S1/2SW1/4;	9
sec. 14, SW1/4NW1/4, N1/2SW1/4, SE1/4;	9
sec. 15, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4;	9
sec. 24, N1/2N1/2, SE1/4NE1/4;	9
T. 7 S., R. 4 E., sec. 19, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 19, Lot 2;	9
sec. 20, S1/2SW1/4;	9
sec. 28, SW1/4, SW1/4SE1/4;	9

sec. 29, S1/2NE1/4, NE1/4SE1/4;	9
sec. 29, Lots 2, 3, 4;	9
sec. 33, N1/2NE1/4, SE1/4NE1/4;	9
sec. 34, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 35, S1/2S1/2;	9
T. 7 S., R. 5 E., sec. 31, SE1/4SW1/4, S1/2SE1/4;	9
sec. 31, Lot 4;	9
sec. 32, S1/2S1/2;	9
sec. 33, S1/2S1/2;	9
sec. 34, S1/2S1/2;	9
sec. 35, S1/2S1/2;	9
T. 7 S., R. 6 E., sec. 27, SE1/4SE1/4;	9
sec. 31, SE1/4SW1/4, S1/2SE1/4;	9
sec. 31, Lot 4;	9
sec. 32, S1/2S1/2;	9
sec. 33, SE1/4NE1/4, SW1/4, N1/2SE1/4;	9
sec. 34, N1/2NE1/4, E2NW1/4, SW1/4NW1/4;	9
T. 8 S., R. 4 E., sec. 1, Lots 1, 2, 3, 4;	9
sec. 2, Lots 1, 2, 3, 4;	9
sec. 3, Lot 1;	9
T. 8 S., R. 5 E., sec. 1, Lots 1, 2, 3, 4;	9
sec. 2, Lots 1, 2, 3, 4;	9
sec. 3, Lots 1, 2, 3, 4;	9
sec. 4, Lots 1, 2, 3, 4;	9
sec. 5, Lots 1, 2, 3, 4;	9
sec. 6, Lots 1, 2, 3, 4;	9
T. 8 S., R. 6 E., se. 4, Lot 4;	9
sec. 5, Lots 1, 2, 3, 4;	9
sec. 6, Lots 1, 2;	9

Off-ROW Access Roads	**Segment**
T. 5 S., R. 1 E., sec. 28, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 32, N1/2NE1/4, SW1/4NE1/4, NE1/4NW1/4, E1/2SE1/4;	9
sec. 33, SW1/4SW1/4;	9
T. 6 S., R. 1 E., sec. 2, SW1/4SW1/4;	9
sec. 3, S1/2NW1/4, N1/2SW1/4, SE1/4SE1/4;	9
sec. 4, Lots 3, 4;	9
sec. 10, NE1/4NE1/4;	9
sec. 11, NW1/4NW1/4;	9
T. 6 S., R. 2 E., sec. 20, NW1/4NW1/4;	9
T. 7 S., R. 3 E., sec. 1, SE1/4SW1/4;	9
sec. 5, W1/2SW1/4;	9

sec. 6, E1/2SE1/4;	9
sec. 9, SE1/4SE1/4;	9
sec. 10, SE1/4SE1/4;	9
sec. 11, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	9
sec. 12, N1/2NW1/4;	9
sec. 13, SW1/4SW1/4, S1/2SE1/4;	9
sec. 14, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 15, NE1/4, N1/2NW1/4, SE1/4NW1/4;	9
sec. 24, N1/2N1/2, SE1/4NE1/4;	9
T. 7 S., R. 4 E., sec. 19, E1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, NW1/4SE1/4, SE1/4SE1/4;	9
sec. 19, Lot 2;	9
sec. 20, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, SW1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 21, SW1/4SW1/4;	9
sec. 22, SE1/4SW1/4;	9
sec. 28, S1/2NE1/4, NW1/4SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 28, Lots 1, 2, 3, 4;	9
sec. 29, S1/2NE1/4, NE1/4SE1/4;	9
sec. 29, Lots 1, 2, 3;	9
sec. 33, N1/2NE1/4;	9
sec. 34, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
T. 7 S., R. 5 E., sec. 31, SW1/4SE1/4;	9
sec. 33, SW1/4SE1/4;	9
sec. 35, SE1/4SW1/4, S1/2SE1/4;	9
T. 7 S., R. 6 E., sec. 30, SE1/4NW1/4, E1/2SW1/4;	9
sec. 31, E1/2NW1/4, NE1/4SW1/4, SE1/4SE1/4;	9
sec. 31, Lots 3, 4;	9
sec. 33, NE1/4NE1/4;	9
sec. 34, N1/2NE1/4, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4;	9
T. 8 S., R. 4 E., sec. 3, Lot 1;	9
T. 8 S., R. 5 E., sec. 1, Lots 3, 4;	9
sec. 2, Lots 1, 3, 4;	9

Permanent Off-ROW Facilities	**Segment**
There are no Aliquots in this Field Office for this grant.	

Temporary Construction Sites	**Segment**
T. 5 S., R. 1 E., sec. 32, SE1/4SE1/4;	9
sec. 33, SW1/4SW1/4;	9
T. 6 S., R. 1 E., sec. 3, SW1/4;	9

T. 6 S., R. 2 E., sec. 20, N1/2NW1/4;	9
sec. 35, W1/2NE1/4;	9
T. 7 S., R. 3 E., sec. 11, W1/2SW1/4;	9
sec. 15, S1/2NE1/4;	9
T. 7 S., R. 4 E., sec. 19, NW1/4SE1/4;	9
sec. 29, E1/2SE1/4;	9
sec. 34, SE1/4SE1/4;	9
sec. 35, SW1/4SW1/4;	9
T. 7 S., R. 5 E., sec. 31, SW1/4SE1/4;	9
T. 7 S., R. 6 E., sec. 32, SE1/4SW1/4, SW1/4SE1/4;	9
T. 8 S., R. 4 E., sec. 2, Lot 4;	9
sec. 3, Lot 1;	9
T. 8 S., R. 5 E., sec. 1, Lots 1, 2;	9
T. 8 S., R. 6 E., sec. 4, Lot 4;	9
sec. 5, Lot 1;	9

Burley Field Office

Boise Meridian

Transmission Line ROW

	Segment
T. 8 S., R. 30 E., sec. 1, Lot 4;	5
sec. 11, N1/2NE1/4;	5
sec. 12, Lot 3;	5
T. 10 S., R. 26 E., sec. 15, S1/2SW1/4;	7
sec. 17, SW1/4SW1/4;	7
sec. 18, SE1/4SW1/4, S1/2SE1/4;	7
sec. 24, SW1/4NE1/4, S1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	7
T. 10 S., R. 27 E., sec. 19, NE1/4SW1/4, SE1/4;	7
sec. 19, Lot 3;	7
sec. 20, S1/2S1/2;	7
sec. 26, SW1/4NW1/4, N1/2SW1/4;	7
sec. 27, S1/2N1/2, NW1/4NW1/4;	7
sec. 28, N1/2N1/2, SE1/4NE1/4;	7
sec. 29, N1/2NE1/4;	7
T. 10 S., R. 28 E., sec. 28, N1/2NE1/4, SW1/4NE1/4;	7
T. 10 S., R. 29 E., sec. 9, S1/2SE1/4;	7
T. 11 S., R. 24 E., sec. 23, SE1/4NW1/4, NE1/4SW1/4;	7
sec. 27, NE1/4NE1/4;	7
sec. 34, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	7
T. 11 S., R. 25 E., sec. 6, SE1/4NE1/4;	7
T. 12 S., R. 19 E., sec. 1, SW1/4SW1/4, SE1/4SE1/4;	7
sec. 2, N1/2SW1/4, SE1/4SE1/4;	7
sec. 3, N1/2S1/2;	7
sec. 4, S1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	7
T. 12 S., R. 20 E., sec. 6, Lot 7;	7
sec. 7, N1/2NE1/4, NE1/4NW1/4;	7
sec. 7, Lot 1;	7
sec. 8, N1/2N1/2;	7
sec. 9, N1/2N1/2;	7
sec. 10, N1/2NW1/4;	7
T. 12 S., R. 21 E., sec. 9, S1/2NE1/4, NE1/4SE1/4;	7
T. 12 S., R. 24 E., sec. 4, Lots 2, 3;	7
T. 11 S., R. 13 E., sec. 24, SE1/4NE1/4, NE1/4SE1/4;	9
T. 11 S., R. 14 E., sec. 19, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 19, NE1/4SW1/4;	9
sec. 19, Lot 2;	9
sec. 28, SW1/4SW1/4;	9
sec. 29, SW1/4NE1/4, NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 30, NE1/4NE1/4;	9

Transmission Line ROW

	Segment
sec. 33, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 34, SW1/4SW1/4;	9
T. 11 S., R. 17 E., sec. 32, S1/2SE1/4;	9
sec. 33, SW1/4SW1/4;	9
T. 12 S., R. 14 E., sec. 1, S1/2S1/2;	9
sec. 2, NW1/4SW1/4, S1/2S1/2;	9
sec. 3, S1/2NE1/4, SE1/4NW1/4, N1/2SE1/4;	9
sec. 3, Lots 2, 3, 4;	9
T. 12 S., R. 15 E., sec. 1, S1/2S1/2;	9
sec. 2, N1/2SW1/4, SE1/4;	9
sec. 3, N1/2S1/2;	9
sec. 4, SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
sec. 5, S1/2;	9
sec. 6, SE1/4SW1/4, SE1/4;	9
sec. 6, Lot 7;	9
T. 12 S., R. 16 E., sec. 1, SW1/4NE1/4, S1/2NW1/4;	9
sec. 1, Lots 1, 2, 3;	9
sec. 2, SE1/4NE1/4, E1/2SW1/4, SW1/4SW1/4, N1/2SE1/4;	9
sec. 3, S1/2SW1/4, SE1/4SE1/4;	9
sec. 4, SE1/4SE1/4;	9
sec. 6, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 6, Lot 7;	9
sec. 7, N1/2NE1/4, NE1/4NW1/4;	9
sec. 7, Lot 1;	9
sec. 8, N1/2N1/2;	9
sec. 9, NE1/4NE1/4;	9
sec. 10, N1/2N1/2;	9
sec. 11, NW1/4NW1/4;	9
T. 12 S., R. 17 E., sec. 1, S1/2NW1/4, N1/2S1/2;	9
sec. 2, Lots 3, 4;	9
sec. 3, Lots 1, 2, 3;	9
sec. 4, Lots 1, 2, 3, 4;	9
sec. 5, Lot 1;	9
sec. 6, Lots 3, 4;	9
T. 12 S., R. 18 E., sec. 2, Lots 1, 2, 3, 4;	9
sec. 3, SE1/4NE1/4, S1/2NW1/4;	9
sec. 3, Lots 1, 2, 3;	9
sec. 4, S1/2N1/2;	9
sec. 5, SE1/4NE1/4;	9
sec. 6, SE1/4NE1/4, NE1/4SW1/4, N1/2SE1/4;	9

Transmission Line ROW

	Segment
T. 12 S., R. 19 E., sec. 5, SW1/4NE1/4, SE1/4NW1/4;	9
T. 12 S., R. 20 E., sec. 6, SE1/4SW1/4, SW1/4SE1/4;	9

Off-ROW Access Roads

	Segment
T. 8 S., R. 30 E., sec. 11, NE1/4NE1/4;	5
sec. 11, NW1/4NE1/4;	5
sec. 11, Lot 14;	5
sec. 12, Lot 3;	5
T. 10 S., R. 25 E., sec. 26, N1/2NW1/4, SW1/4SW1/4;	7
T. 10 S., R. 26 E., sec. 17, SW1/4SW1/4;	7
sec. 18, S1/2SE1/4;	7
sec. 23, N1/2NE1/4;	7
sec. 24, S1/2N21/4, NW1/4NW1/4;	7
T. 10 S., R. 27 E., sec. 19, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	7
sec. 19, Lots 2, 3;	7
sec. 26, W1/2SW1/4;	7
sec. 27, SW1/4NW1/4, W1/2SW1/4;	7
sec. 28, SE1/4NE1/4, E1/2SE1/4;	7
T. 10 S., R. 28 E., sec. 28, NE1/4NE1/4;	7
T. 10 S., R. 29 E., sec. 9, S1/2SE1/4;	7
sec. 13, SW1/4NW1/4;	7
sec. 14, SE1/4NE1/4, NE1/4SW1/4, N1/2SE1/4;	7
T. 11 S., R. 24 E., sec. 23, SE1/4NW1/4, NE1/4SW1/4;	7
sec. 34, E1/2NW1/4, NW1/4SW1/4;	7
T. 11 S., R. 25 E., sec. 5, Lot 2;	7
sec. 6, SE1/4NE1/4;	7
T. 12 S., R. 19 E., sec. 1, SW1/4SW1/4, E1/2SE1/4;	7
sec. 4, S1/2NW1/4, NE1/4SE1/4;	7
sec. 12, E1/2NE1/4;	7
T. 12 S., R. 20 E., sec. 6, SE1/4SW1/4;	7
sec. 6, Lot 7;	7
sec. 7, NW1/4NE1/4, E1/2NW1/4;	7
sec. 7, Lots 1, 2;	7
sec. 8, N1/2N1/2;	7
sec. 9, N1/2N1/2;	7
sec. 10, NW1/4NW1/4;	7
T. 12 S., R. 21 E., sec. 9, NE1/4, NE1/4SE1/4;	7
T. 11 S., R. 13 E., sec. 24, SE1/4NE1/4;	9
sec. 24, NE1/4SE1/4;	9
T. 11 S., R. 14 E., sec. 19, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4,	9

Off-ROW Access Roads

	Segment
S1/2SE1/4;	
sec. 19, Lot 2;	9
sec. 27, SE1/4SE1/4;	9
sec. 28, NW1/4SW1/4, S1/2SW1/4;	9
sec. 29, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SE1/4;	9
sec. 30, NE1/4NE1/4;	9
sec. 30, Lots 1, 2;	9
sec. 33, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, N1/2SE1/4;	9
sec. 34, NE1/4NE1/4, S1/2NE1/4, NW1/4SW1/4, S1/2SW1/4, W1/2SE1/4;	9
sec. 35, S1/2SE1/4;	9
T. 11 S., R. 17 E., sec. 31, SE1/4SW1/4;	9
sec. 32, SE1/4SE1/4;	9
sec. 33, S1/2S1/2;	9
T. 12 S., R. 14 E., sec. 1, SW1/4NE1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 1, Lots 3, 4;	9
sec. 2, SW1/4NE1/4, N1/2SW1/4, W1/2SE1/4;	9
sec. 2, Lots 1, 2;	9
sec. 3, S1/2NE1/4, NE1/4SE1/4;	9
sec. 3, Lot 3;	9
sec. 11, W1/2NE1/4;	9
T. 12 S., R. 15 E., sec. 1, SW1/4NE1/4, S1/2NW1/4, SE1/4SW1/4, SE1/4;	9
sec. 1, Lot 4;	9
sec. 2, SW1/4NE1/4, NW1/4SE1/4;	9
sec. 2, Lots 1, 2, 3, 4;	9
sec. 3, NE1/4SE1/4;	9
sec. 3, Lots 1, 2, 3, 4;	9
sec. 4, S1/2NE1/4, N1/2S1/2;	9
sec. 4, Lot 1;	9
sec. 5, N1/2S1/2;	9
sec. 6, NE1/4SW1/4, N1/2SE1/4;	9
sec. 6, Lot 6;	9
T. 12 S., R. 16 E., sec. 1, SW1/4NW1/4;	9
sec. 1, Lots 1, 2, 3, 4;	9
sec. 2, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	9
sec. 2, Lots 1, 3, 4;	9
sec. 3, S1/2SW1/4;	9
sec. 6, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 6, Lot 7;	9
sec. 7, NW1/4NE1/4;	9
sec. 8, NW1/4NE1/4, NE1/4NW1/4;	9

Off-ROW Access Roads

	Segment
T. 12 S., R. 17 E., sec. 1, SE1/4NE, SW1/4NW1/4, NW1/4SW1/4, NE1/4SE1/4;	9
sec. 1, Lots 1, 2, 3, 4;	9
sec. 2, NE1/4SE1/4;	9
sec. 2, Lots 3, 4;	9
sec. 3, Lots 1, 2, 3;	9
sec. 4, Lots 1, 2, 3, 4;	9
sec. 6, Lots 3, 4;	9
T. 12 S., R. 18 E., sec. 2, Lots 2, 3, 4;	9
sec. 3, S1/2N1/4W;	9
sec. 3, Lots 1, 2;	9
sec. 4, S1/2N1/2, N1/2SE1/4;	9
sec. 6, S1/2NE1/4, NE1/4SE1/4;	9
T. 12 S., R. 19 E., sec. 5, S1/2NE1/4, SE1/4NW1/4;	9

Permanent Off-ROW Facilities **Segment**

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

	Segment
T. 8 S., R. 30 E., sec. 11, N1/2NE1/4, NW1/4NW1/4;	5
T. 10 S., R. 26 E., sec. 18, SE1/4SW1/4, SW1/4SE1/4;	7
T. 10 S., R. 27 E., sec. 19, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	7
T. 10 S., R. 27 E., sec. 26, NE1/4SW1/4;	7
T. 10 S., R. 27 E., sec. 27, W1/2SW1/4;	7
T. 10 S., R. 27 E., sec. 28, SE1/4SE1/4;	7
T. 11 S., R. 24 E., sec. 27, NE1/4NE1/4;	7
T. 11 S., R. 24 E., sec. 34, E1/2NW1/4;	7
T. 12 S., R. 19 E., sec. 1, SW1/4SW1/4, NE1/4SE1/4;	7
T. 12 S., R. 19 E., sec. 2, N1/2SW1/4;	7
T. 12 S., R. 19 E., sec. 3, NW1/4SW1/4;	7
T. 12 S., R. 19 E., sec. 4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	7
T. 12 S., R. 20 E., sec. 8, NE1/4NE1/4;	7
T. 12 S., R. 20 E., sec. 10, NE1/4NW1/4;	7
T. 12 S., R. 24 E., sec. 4, Lots 2, 3;	7
T. 11 S., R. 13 E., sec. 24, SE1/4NE1/4, NE1/4SE1/4;	9
T. 11 S., R. 14 E., sec. 19, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	9
T. 11 S., R. 14 E., sec. 19, Lot 2;	9
T. 11 S., R. 14 E., sec. 33, NE1/4;	9
T. 11 S., R. 18 E., sec. 34, E1/2SW1/4;	9
T. 12 S., R. 14 E., sec. 1, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	9

Temporary Construction Sites

	Segment
T. 12 S., R. 14 E., sec. 2, SW1/4SW1/4;	9
T. 12 S., R. 15 E., sec. 2, NE1/4SW1/4, W1/2SE1/4;	9
T. 12 S., R. 15 E., sec. 4, NW1/4SW1/4;	9
T. 12 S., R. 15 E., sec. 5, NE1/4SE1/4;	9
T. 12 S., R. 16 E., sec. 2, SW1/4SW1/4, S1/2SE1/4;	9
T. 12 S., R. 16 E., sec. 3, SE1/4SE1/4;	9
T. 12 S., R. 16 E., sec. 8, N1/2NW1/4;	9
T. 12 S., R. 16 E., sec. 10, NE1/4NE1/4;	9
T. 12 S., R. 16 E., sec. 11, NW1/4NW1/4;	9
T. 12 S., R. 17 E., sec. 1, NE1/4SW1/4, NW1/4SE1/4;	9
T. 12 S., R. 17 E., sec. 2, SW1/4SW1/4;	9
T. 12 S., R. 17 E., sec. 11, NW1/4NW1/4;	9
T. 12 S., R. 18 E., sec. 6, N1/2SE1/4, SE1/4SE1/4;	9
T. 12 S., R. 19 E., sec. 5, SW1/4NE1/4, SE1/4NW1/4;	9

Casper Field Office

Sixth Principal Meridian

Transmission Line ROW

	Segment
T. 29 N., R. 78 W., sec. 10, NW1/4SE1/4, S1/2SE1/4;	1W
sec. 11, W1/2SW1/4;	1W
sec. 15, E1/2NW1/4, SW1/4, SW1/4SE1/4;	1W
sec. 15, Lots 1, 2, 3, 4, 6;	1W
sec. 21, SE1/4NE1/4, SE1/4;	1W
sec. 28, NE1/4, E1/2NW1/4, NE1/4SW1/4, S1/2SW1/4, W1/2SE1/4;	1W
sec. 32, NE1/4SE1/4, S1/2SE1/4;	1W
sec. 33, N1/2NW1/4, N1/2SW1/4, SW1/4SW1/4;	1W
T. 30 N., R. 77 W., sec. 7, NE1/4NW1/4;	1W
sec. 7, Lot 2;	1W
T. 30 N., R. 78 W., sec. 12, SE1/4;	1W
T. 31 N., R. 77 W., sec. 3, Lot 3;	1W
T. 32 N., R. 77 W., sec. 26, Lot 2;	1W

Off-ROW Access Roads

	Segment
T. 29 N., R. 78 W., sec. 7, S1/2SE1/4;	1W
sec. 8, SE1/4SE1/4;	1W
sec. 9, SW1/4SW1/4;	1W
sec. 10, W1/2SE1/4;	1W
sec. 11, W1/2SW1/4;	1W
sec. 15, NW1/4NW1/4, S1/2NW1/4, E1/2SW1/4, SW1/4SW1/4, SW1/4SE1/4;	1W
sec. 15, Lots 2, 3, 6;	1W
sec. 17, N1/2NE1/4, SE1/4NE1/4;	1W
sec. 21, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, SE1/4;	1W
sec. 28, NE1/4, NW1/4NW1/4, NE1/4SW1/4, S1/2SW1/4, W1/2SE1/4;	1W
sec. 29, NE1/4NE1/4, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;	1W
sec. 31, NE1/4NE1/4, SW1/4NE1/4, E1/2SW1/4	1W
sec. 31, Lot 4;	1W
sec. 32, NW1/4NW1/4, E1/2SE1/4;	1W
sec. 33, N1/2NW1/4, N1/2SW1/4, SW1/4SW1/4;	1W
T. 29 N., R. 79 W., sec. 14, SE1/4SW1/4, E1/2SE1/4, SW1/4SE1/4;	1W
T. 30 N., R. 77 W., sec. 7, NE1/4NW1/4;	1W
sec. 7, Lot 2;	1W
T. 30 N., R. 78 W., sec. 12, SE1/4;	1W
T. 31 N., R. 77 W., sec. 3, Lot 3;	1W

Off-ROW Access Roads

	Segment
T. 32 N., R. 77 W., sec. 26, Lots 1, 2;	1W

Permanent Off-ROW Facilities

	Segment
There are no Aliquots in this Field Office for this grant.	

Temporary Construction Facilities

	Segment
T. 29 N., R. 78 W., sec. 10, W1/2SE1/4;	1W
sec. 11, W1/2SW1/4;	1W
sec. 15, Lots 2, 3;	1W
T. 30 N., R. 78 W., sec. 12, S1/2SE1/4;	1W
sec. 23, SE1/4NE1/4;	1W
T. 31 N., R. 77 W., sec. 3, Lot 3;	1W

Four Rivers Field Office

Boise Meridian

Transmission Line ROW

	Segment
T. 1 N., R. 1 E., sec. 2, SE1/4SE1/4;	8
sec. 6, SW1/4SE1/4;	8
sec. 6, Lot 7;	8
sec. 7, NW1/4NE1/4;	8
sec. 8, N1/2NE1/4;	8
T. 1 N., R. 1 W., sec. 2, S1/2SW1/4, SW1/4SE1/4;	8
sec. 3, S1/2S1/2;	8
sec. 4, SE1/4SW1/4, S1/2SE1/4;	8
sec. 4, Lot 7;	8
sec. 9, N1/2NE1/4, NE1/4NW1/4;	8
sec. 9, Lot 1;	8
sec. 10, N1/2N1/2;	8
sec. 11, N1/2N1/2;	8
sec. 12, NW1/4NE1/4, N1/2NW1/4;	8
sec. 12, Lot 1;	8
sec. 20, W1/2W1/2;	8
sec. 29, W1/2NW1/4;	8
sec. 30, S1/2NE1/4, W1/2SE1/4;	8
sec. 31, NW1/4NE1/4;	8
T. 1 N., R. 2 E., sec. 10, S1/2SE1/4;	8
sec. 11, S1/2SW1/4;	8
sec. 13, S1/2NW1/4, N1/2SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
sec. 14, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4;	8
sec. 24, NE1/4NE1/4;	8
T. 1 N., R. 3 E., sec. 28, NW1/4SE1/4, S1/2SE1/4;	8
sec. 29, NE1/4NW1/4;	8
sec. 33, NE1/4NE1/4;	8
sec. 34, NW1/4NW1/4, S1/2N1/2;	8
T. 1 N., R. 4 E., sec. 31, SW1/4NE1/4, SE1/4NW1/4;	8
sec. 31, Lot 2;	8
sec. 32, SW1/4NE1/4, N1/2SE1/4, SE1/4SE1/4;	8
sec. 33, SW1/4SW1/4;	8
T. 1 S., R. 4 E., sec. 3, SW1/4SW1/4;	8
sec. 4, SW1/4NE1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	8
sec. 4, Lots 3, 4;	8
sec. 11, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	8
sec. 13, NW1/4NE1/4, NW1/4NW1/4;	8
sec. 13, Lot 1;	8
sec. 14, N1/2NE1/4;	8

Transmission Line ROW

	Segment
T. 1 S., R. 5 E., sec. 17, N1/2NW1/4, SE1/4NW1/4;	8
sec. 18, N1/2NE1/4, NE1/4NW1/4;	8
sec. 18, Lot 1;	8
sec. 26, SE1/4SW1/4;	8
sec. 35, NE1/4NW1/4;	8
T. 2 S., R. 6 E., sec. 6, SE1/4SW1/4, S1/2SE1/4;	8
sec. 7, NW1/4NE1/4;	8
sec. 8, NW1/4SE1/4, S1/2SE1/4;	8
sec. 15, SW1/4SW1/4;	8
sec. 22, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	8
sec. 25, SW1/4SW1/4;	8
sec. 26, SW1/4NE1/4, N1/2SE1/4, SE1/4SE1/4;	8
T. 2 S., R. 7 E., sec. 31, SE1/4SW1/4;	8
sec. 31, Lots 3, 4;	8
T. 3 S., R. 7 E., sec. 5, NW1/4SW1/4, S1/2SW1/4;	8
sec. 6, S1/2NE1/4, NE1/4SE1/4;	8
sec. 6, Lots 2, 3, 4;	8
sec. 8, NW1/4NE1/4, S1/2NE1/4.NE1/4NW1/4, NE1/4SE1/4;	8
sec. 9, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	8
sec. 15, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, S1/2SE1/4;	8
sec. 22, N1/2NE1/4, SE1/4NE1/4;	8
sec. 23, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
sec. 25, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, SE1/4;	8
sec. 26, NE1/4NE1/4;	8
T. 3 S., R. 8 E., sec. 30, Lot 4;	8
sec. 31, SW1/4NE1/4, E1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	8
sec. 31, Lot 1;	8
sec. 32, S1/2SW1/4;	8
T. 4 S., R. 8 E., sec. 5, S1/2NE1/4, SE1/4NW1/4, NE1/4SE1/4;	8
sec. 5, Lots 2, 3, 4;	8
T. 4 S., R. 9 E., sec. 19, S1/2NE1/4, SE1/4NW1/4, NE1/4SE1/4;	8
sec. 27, NW1/4SW1/4, S1/2SW1/4;	8
sec. 34, N1/2N1/2, SE1/4NE1/4;	8
sec. 35, S1/2NE1/4, NW1/4;	8
T. 4 S., R. 10 E., sec. 31, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	8
sec. 31, Lots 2, 3;	8
sec. 32, N1/2S1/2;	8
sec. 33, S1/2;	8
sec. 34, S1/2SW1/4;	8

Transmission Line ROW

	Segment
T. 3 S., R. 1 W., sec. 29, SW1/4SW1/4;	9
sec. 29, Lot 5;	9
sec. 32, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, W1/2SE1/4;	9
T. 3 S., R. 2 W., sec. 24, E1/2E1/2;	9
sec. 25, NE1/4NE1/4;	9
T. 6 S., R. 6 E., sec. 35, SE1/4SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
T. 6 S., R. 7 E., sec. 20, SE1/4SE1/4;	9
sec. 21, SE1/4NE1/4, E1/2SW1/4, SW1/4SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
sec. 22, NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 23, N1/2;	9
sec. 24, NW1/4;	9
sec. 28, NW1/4NW1/4;	9
sec. 29, N1/2NE1/4, SW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 30, SE1/4NE1/4, E1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
sec. 30, Lot 4;	9
sec. 31, Lot 1;	9
T. 7 S., R. 6 E., sec. 2, SE1/4NW1/4, E1/2SW1/4;	9
sec. 2, Lot 3;	9
sec. 11, E1/2W1/2, W1/2SE1/4;	9

Off-ROW Access Roads

	Segment
T. 1 N., R. 1 E., sec. 7, NW1/4NE1/4;	8
T. 1 N., R. 1 W., sec. 3, S1/2SW1/4, SW1/4SE1/4;	8
sec. 4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
sec. 4, Lot 7;	8
sec. 10, NE1/4NE1/4, NE1/4NW1/4;	8
sec. 11, N1/2N1/2;	8
sec. 12, NW1/4NE1/4, N1/2NW1/4;	8
sec. 12, Lot 1;	8
sec. 20, W1/2SW1/4;	8
sec. 29, NW1/4NW1/4;	8
sec. 30, SW1/4NE1/4, W1/2SE1/4;	8
sec. 31, NW1/4NE1/4;	8
T. 1 N., R. 2 E., sec. 10, NW1/4NE1/4, S1/2NE1/4, NE1/4SE1/4;	8
sec. 11, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	8
sec. 13, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
sec. 14, N1/2NE1/4, SE1/4NE1/4;	8
T. 1 N., R. 3 E., sec. 18, Lot 4;	8

Off-ROW Access Roads

	Segment
sec. 28, NW1/4SE1/4, S1/2SE1/4;	8
sec. 29, NE1/4NW1/4;	8
sec. 33, NE1/4NE1/4;	8
sec. 34, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	8
T. 1 N., R. 4 E., sec. 31, SW1/4NE1/4, SE1/4NW1/4;	8
sec. 31, Lot 2;	8
sec. 32, SE1/4SE1/4;	8
sec. 33, SW1/4SW1/4;	8
T. 1 S., R. 3 E., sec. 2, Lot 3;	8
T. 1 S., R. 4 E., sec. 3, SW1/4SW1/4;	8
sec. 11, SW1/4NW1/4, S1/2SE1/4;	8
sec. 12, SW1/4SE1/4;	8
sec. 12, Lots 3, 4;	8
sec. 13, NW1/4NE1/4, NW1/4, N1/2SW1/4, SE1/4SW1/4, W1/2SE1/4;	8
sec. 14, NE1/4NE1/4;	8
T. 1 S., R. 5 E., sec. 7, SE1/4NW1/4, E1/2SW1/4, NW1/4SE1/4;	8
sec. 7, Lot 2, 3;	8
sec. 17, N1/2NW1/4;	8
sec. 18, NE1/4NW1/4;	8
sec. 18, Lots 1, 2;	8
sec. 20, W1/2NE1/4;	8
sec. 28, N1/2NW1/4;	8
T. 2 S., R. 5 E., sec. 1, S1/2NW1/4;	8
sec. 1, Lot 1;	8
sec. 2, S1/2NE1/4;	8
sec. 2, Lot 2;	8
T. 2 S., R. 6 E., sec. 8, NW1/4SE1/4;	8
sec. 22, SW1/4NE1/4, NE1/4SW1/4, SE1/4;	8
sec. 23, SE1/4SE1/4;	8
sec. 25, SW1/4SW1/4;	8
sec. 27, NE1/4NE1/4;	8
T. 3 S., R. 7 E., sec. 15, S1/2SE1/4;	8
sec. 21, SE1/4NE1/4;	8
sec. 22, N1/2NE1/4, SW1/4NE1/4, S1/2NW1/4;	8
sec. 23, SE1/4SE1/4;	8
sec. 25, N1/2NW1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	8
sec. 26, NE1/4NE1/4;	8
T. 3 S., R. 8 E., sec. 31, Lot 4;	8
sec. 32, SW1/4SW1/4;	8

Off-ROW Access Roads

	Segment
T. 4 S., R. 8 E., sec. 5, Lot 4;	8
sec. 6, SW1/4NE1/4, SE1/4NW1/4;	8
sec. 6, Lots 1, 2, 3, 4;	8
sec. 15. E1/2NW1/4;	8
T. 4 S., R. 9 E., sec. 19, NW1/4NE1/4, S1/2NE1/4, E1/2NW1/4, NE1/4SE1/4;	8
sec. 26, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	8
sec. 27, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4;	8
sec. 35, N1/2NE1/4;	8
T. 4 S., R. 10 E.,sec. 28, NW1/4SW1/4;	8
sec. 29, E1/2SE1/4;	8
sec. 32, E1/2NE1/4, SW1/4NE1/4, NW1/4SE1/4;	8
sec. 33, NW1/4SW1/4;	8
sec. 34, SE1/4SW1/4;	8
T. 5 S., R. 10 E., sec. 2, SW1/4SW1/4;	8
sec. 3, NE1/4SE1/4;	8
sec. 3, Lot 2;	8
T. 2 S., R. 2 W., sec. 4, SE1/4SW1/4, W1/2SE1/4;	9
sec. 4, Lots 5, 8;	9
sec. 8, E1/2SE1/4;	9
sec. 9, N1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 21, S1/2SE1/4;	9
T. 3 S., R. 1 W., sec. 29, S1/2SW1/4, W1/2SE1/4;	9
sec. 29, Lots 5, 6;	9
sec. 30, SE1/4SE1/4;	9
sec. 30, Lot 9;	9
sec. 32, N1/2NW1/4;	9
T. 3 S., R. 2 W., sec. 24, E1/2SE1/4, SW1/4SE1/4;	9
sec. 25, NE1/4NE1/4;	9
T. 6 S., R. 6 E., sec. 34, S1/2SE1/4;	9
sec. 35, S1/2SW1/4, W1/2SE1/4;	9
T. 6 S., R. 7 E., sec. 15, SW1/4, SW1/4SE1/4;	9
sec. 20, SE1/4SE1/4;	9
sec. 21, E1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	9
sec. 22, N1/2NE1/4, W1/2NW1/4;	9
sec. 24, E1/2NW1/4;	9
sec. 29, NE1/4, S1/2NW1/4, W1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
sec. 30, SE1/4NE1/4, SE1/4SW1/4, E1/2SE1/4, SW1/4SE1/4;	9
sec. 30, Lot 4;	9
sec. 31, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9

Off-ROW Access Roads

	Segment
sec. 31, Lot 1;	9
sec. 32, W1/2E2, NW1/4SW1/4, S1/2SW1/4;	9
T. 7 S., R. 6 E., sec. 1, SW1/4NE1/4, S1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	9
sec. 1, Lot 2;	9
sec. 2, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	9
sec. 2, Lots 1, 2, 3;	9
sec. 3, SW1/4NW1/4, NW1/4SW1/4, S1/2SE1/4;	9
sec. 3, Lots 1, 2, 3, 4;	9
sec. 4, NE1/4SE1/4;	9

Permanent Off-ROW Facilities

	Segment
There are no Aliquots in this Field Office for this grant.	

Temporary Construction Sites

	Segment
T. 1 N., R. 1 W., sec. 4, Lot 7;	8
sec. 9, Lot 1;	8
sec. 11, SW1/4NE1/4;	8
sec. 20, NW1/4NW1/4;	8
sec. 29, W1/2NW1/4;	8
sec. 30, S1/2NE1/4, SW1/4SE1/4;	8
sec. 31, NW1/4NE1/4;	8
T. 1 N., R. 2 E., sec. 10, NE1/4SE1/4;	8
sec. 11, SW1/4SE1/4;	8
sec. 13, SE1/4SE1/4;	8
sec. 14, NW1/4NE1/4, S1/2NW1/4;	8
T. 1 N., R. 3 E., sec. 18, Lot 4;	8
sec. 28, SE1/4;	8
sec. 34, SE1/4NW1/4;	8
T. 1 N., R. 4 E., sec. 32, SW1/4NE1/4, NW1/4SE1/4;	8
T. 1 S., R. 4 E., sec. 3, SW1/4SW1/4;	8
sec. 4, SW1/4NE1/4;	8
sec. 5, SE1/4NW1/4, SW1/4NE1/4;	8
sec. 11, SW1/4NW1/4, SW1/4SE1/4;	8
sec. 14, NW1/4NE1/4;	8
T. 2 S., R. 5 E., sec. 1, SW1/4NW1/4;	8
sec. 1, Lot 4;	8
sec. 17, NW1/4NW1/4;	8
sec. 18, E1/2NW1/4;	8

Temporary Construction Sites

	Segment
sec. 18, Lots 1, 2;	8
sec. 35, W1/2NW1/4;	8
T. 2 S., R. 6 E., sec. 15, SW1/4SE1/4;	8
sec. 22, NW1/4NE1/4;	8
sec. 25, SE1/4NW1/4, NE1/4SW1/4;	8
T. 3 S., R. 7 E., sec. 5, Lots 3, 4;	8
sec. 14, NW1/4SW1/4;	8
sec. 15, NE1/4SE1/4;	8
sec. 25, S1/2NE1/4, N1/2SE1/4;	8
T. 4 S., R. 8 E., sec. 5, SE1/4NW1/4, SW1/4SW1/4;	8
sec. 5, Lots 2, 3;	8
T. 4 S., R. 9 E., sec. 19, E1/2NW1/4, SE1/4SE1/4;	8
sec. 33, NE1/4NE1/4;	8
sec. 34, NE1/4NW1/4;	8
T. 4 S., R. 10 E., sec. 28, S1/2SW1/4;	8
sec. 32, E1/2SE1/4;	8
sec. 33, N1/2NW1/4, W1/2SW1/4;	8
T. 3 S., R. 1 W., sec. 18, Lots 4, 8;	9
sec. 32, NW1/4NE1/4;	9
T. 3 S., R. 2 W., sec. 24, SE1/4SE1/4;	9
sec. 25, NE1/4NE1/4;	9
T. 6 S., R. 6 E., sec. 35, SE1/4SW1/4;	9
T. 6 S., R. 7 E., sec. 21, SE1/4NE1/4;	9
sec. 22, W1/2NE1/4, E1/2NW1/4, SW1/4NW1/4;	9
sec. 30, SE1/4SW1/4;	9
sec. 31, NE1/4NW1/4;	9
T. 7 S., R. 6 E., sec. 1, SW1/4NW1/4;	9
sec. 1, Lot 4;	9
sec. 2, SE1/4NE1/4;	9
sec. 2, Lot 1;	9

Jarbidge Field Office

Boise Meridian

Transmission Line ROW

	Segment
T. 6 S., R. 8 E., sec. 19, S1/2NE1/4;	9
sec. 20, N1/2;	9
sec. 21, S1/2N1/2;	9
sec. 22, S1/2N1/2;	9
sec. 23, S1/2NW1/4, N1/2S1/2;	9
sec. 24, S1/2NE1/4, N1/2S1/2;	9
T. 6 S., R. 9 E., sec. 19, S1/2NE1/4, SE1/4NW1/4;	9
sec. 19, Lots 2, 3;	9
sec. 20, NE1/4NE1/4, S1/2N1/2;	9
sec. 21, N1/2;	9
sec. 22, W1/2NE1/4, NW1/4;	9
sec. 23, N1/2NE1/4, SW1/4NE1/4;	9
sec. 24, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
T. 6 S., R. 10 E., sec. 19, Lot 4;	9
sec. 29, S1/2SW1/4;	9
sec. 30, SW1/4NE1/4, NE1/4NW1/4, N1/2SE1/4;	9
sec. 30, Lot 1;	9
sec. 32, NW1/4NE1/4, S1/2NE1/4, E1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 33, NW1/4SW1/4, S1/2SW1/4;	9
T. 7 S., R. 6 E., sec. 14, W1/2E1/2, E1/2W1/2;	9
sec. 23, W1/2NE1/4, E1/2NW1/4;	9
sec. 26, SE1/4SW1/4, W1/2SE1/4;	9
T. 7 S., R. 10 E., sec. 3, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 3, Lots 3, 4;	9
sec. 10, NE1/4NE1/4;	9
sec. 11, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, SE1/4;	9
sec. 12, SW1/4SW1/4;	9
sec. 13, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
T. 7 S., R. 11 E., sec. 18, SE1/4SW1/4;	9
sec. 18, Lot 4;	9
sec. 19, NW1/4NE1/4, S1/2NE1/4, E1/2NW1/4, NE1/4SE1/4;	9
sec. 19, Lot 1;	9
sec. 20, NW1/4SW1/4, S1/2SW1/4;	9
sec. 28, SW1/4, SW1/4SE1/4;	9
sec. 29, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
sec. 33, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4;	9

Transmission Line ROW

	Segment
sec. 34, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
T. 8 S., R. 11 E., sec. 2, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 3, SE1/4NE1/4;	9
sec. 3, Lots 1, 2;	9
sec. 11, N1/2NE1/4;	9
sec. 12, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 13, NE1/4NE1/4;	9
T. 8 S., R. 12 E., sec. 17, SW1/4SW1/4;	9
sec. 18, SW1/4NE1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 18, Lots 1, 2;	9
sec. 20, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 21, NW1/4SW1/4, S1/2SW1/4;	9
sec. 27, W1/2SW1/4;	9
sec. 28, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
sec. 34, W1/2W1/2;	9
T. 9 S., R. 12 E., sec. 3, SW1/4NW1/4, W1/2SW1/4;	9
sec. 3, Lot 4;	9
sec. 4, SE1/4NE1/4, E1/2SE1/4;	9
sec. 4, Lot 1;	9
sec. 9, E1/2E1/2;	9
sec. 10, W1/2W1/2;	9
sec. 15, W1/2W1/2;	9
sec. 21, E1/2SE1/4;	9
sec. 22, W1/2W1/2;	9
sec. 27, Lot 3;	9
sec. 28, Lots 1, 4, 5, 6, 7, 8;	9
sec. 33, W1/2E1/2, E1/2SW1/4;	9
T. 10 S., R. 12 E., sec. 4, SE1/4NW1/4, E1/2SW1/4, NW1/4SE1/4;	9
sec. 4, Lot 3;	9
sec. 9, NE1/4, NE1/4NW1/4;	9
sec. 10, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 10, Lots 3, 7, 8, 9;	9
sec. 13, NW1/4SW1/4, S1/2SW1/4;	9
sec. 14, SW1/4NE1/4, NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 15, NE1/4NE1/4;	9
sec. 24, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
T. 10 S., R. 13 E., sec. 19, SE1/4SW1/4;	9
sec. 19, Lots 2, 3, 4;	9

Transmission Line ROW

	Segment
sec. 30, E1/2W1/2, SW1/4SE1/4;	9
sec. 30, Lot 1;	9
sec. 31, N1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4;	9
sec. 32, SW1/4NW1/4, SW1/4;	9
T. 11 S., R. 13 E., sec. 5, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4;	9
sec. 5, Lot 3;	9
sec. 8, W1/2E1/2;	9
sec. 15, SW1/4SW1/4;	9
sec. 17, NW1/4NE1/4, S1/2NE1/4, NE1/4SE1/4;	9
sec. 21, NE1/4NE1/4;	9
sec. 22, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4;	9
sec. 23, S1/2NW1/4, N1/2S1/2, SE1/4SE1/4;	9
sec. 24, S1/2S1/2, NE1/4SE1/4;	9
T. 11 S., R. 14 E., sec. 19, NE1/4SW1/4;	9

Off-ROW Access Roads

	Segment
T. 6 S., R. 8 E., sec. 11, S1/2NE1/4, W1/2SE1/4;	9
sec. 12, S1/2N1/2, N1/2SW1/4, NE1/4SE1/4;	9
sec. 13, SW1/4SW1/4;	9
sec. 14, NW1/4NE1/4, S1/2NE1/4, E1/2SE1/4;	9
sec. 20, N1/2N1/2, SE1/4NE1/4;	9
sec. 21, NE1/4NE1/4;	9
sec. 22, N1/2NW1/4, SE1/4NW1/4;	9
sec. 23, N1/2SE1/4, SE1/4SE1/4;	9
sec. 24, SW1/4NE1/4, NW1/4, NE1/4SW1/4, SW1/4SW1/4, W1/2SE1/4;	9
sec. 25, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, E1/2SW1/4, N1/2SE1/4, SE1/4SE1/4;	9
T. 6 S., R. 9 E., sec. 7, NE1/4SW1/4, SE1/4;	9
sec. 7, Lot 3;	9
sec. 14, S1/2SW1/4, SW1/4SE1/4;	9
sec. 15, S1/2SE1/4;	9
sec. 17, N1/2N1/2;	9
sec. 18, NE1/4NE1/4;	9
sec. 19, W1/2NE1/4, SE1/4NW1/4;	9
sec. 21, N1/2N1/2;	9
sec. 22, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4;	9
sec. 23, W1/2NE1/4;	9
sec. 24, SW1/4NE1/4, N1/2SE1/4;	9
sec. 31, Lot 1;	9

Off-ROW Access Roads

	Segment
T. 6 S., R. 10 E., sec. 29, W1/2SW1/4;	9
sec. 30, S1/2NE1/4, NE1/4NW1/4, N1/2SE1/4;	9
sec. 30, Lot 1;	9
sec. 32, NE1/4SE1/4;	9
T. 7 S., R. 6 E., sec. 3, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 3, Lots 3, 4;	9
sec. 4, NE1/4SE1/4;	9
sec. 10, SE1/4SE1/4;	9
sec. 14, N1/2NW1/4, SE1/4NW1/4;	9
sec. 15, NE1/4NE1/4;	9
T. 7 S., R. 10 E., sec. 2, SW1/4SW1/4;	9
sec. 3, E1/2SW1/4, NE1/4SE1/4, S1/2SE1/4;	9
sec. 3, Lot 2;	9
sec. 10, NE1/4NE1/4, SW1/4NE1/4, E1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 11, NW1/4NW1/4, NE1/4SW1/4, S1/2S1/2, NW1/4SE1/4;	9
sec. 12, E1/2NE1/4, SW1/4NE1/4, SW1/4SW1/4, W1/2SE1/4;	9
sec. 13, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, SE1/4SW1/4, SE1/4;	9
sec. 14, N1/2NE1/4, NW1/4NW1/4, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 15, NE1/4NE1/4;	9
sec. 23, N1/2NE1/4, SE1/4NE1/4;	9
sec. 24, N1/2NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	9
T. 7 S., R. 11 E., sec. 7, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4;	9
sec. 7, Lot 1;	9
sec. 18, Lot 4;	9
sec. 19, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
sec. 20, SW1/4NW1/4, NW1/4SW1/4, S1/2SW1/4;	9
sec. 22, W1/2E1/2, SE1/4NW1/4, SE1/4SW1/4;	9
sec. 27, NE1/4NW1/4, W1/2W1/2;	9
sec. 28, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 29, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4;	9
sec. 33, N1/2NE1/4;	9
sec. 34, NW1/4NW1/4, S1/2NW1/4, E1/2SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 35, SW1/4SW1/4;	9
T. 8 S., R. 11 E., sec. 2, SW1/4NE1/4, SE1/4NW1/4, SW1/4, S1/2SE1/4;	9
sec. 2, Lots 2, 3, 4;	9
sec. 11, N1/2NE1/4;	9
sec. 12, NW1/4NW1/4, S1/2NW1/4, E1/2SW1/4, S1/2SE1/4;	9
sec. 13, NE1/4NE1/4;	9

Off-ROW Access Roads

	Segment
T. 8 S., R. 12 E., sec. 7, Lot 4;	9
sec. 13, NW1/4NW1/4;	9
sec. 14, N1/2NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 15, S1/2SW1/4;	9
sec. 17, SW1/4NW1/4, SW1/4;	9
sec. 18, NW1/4NE1/4, S1/2NE1/4, N1/2SE1/4, SE1/4SE1/4;	9
sec. 18, Lots 1, 2;	9
sec. 20, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, SE1/4;	9
sec. 21, E1/2NE1/4, SW1/4NE1/4, SW1/4, NW1/4SE1/4;	9
sec. 22, NW1/4NW1/4;	9
sec. 27, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	9
sec. 28, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, E1/2SE1/4;	9
sec. 33, E1/2NE1/4, SW1/4NE1/4, NE1/4SE1/4;	9
sec. 34, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, W1/2W1/2, NE1/4SE1/4;	9
sec. 35, S1/2NE1/4, N1/2SW1/4, NW1/4SE1/4;	9
T. 9 S., R. 12 E., sec. 2, S1/2SW1/4;	9
sec. 3, S1/2NW1/4, N1/2SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 3, Lot 4;	9
sec. 4, SE1/4SW1/4, E1/2SE1/4, SW1/4SE1/4;	9
sec. 9, N1/2NE1/4, NE1/4NW1/4;	9
sec. 10, SW1/4SW1/4, S1/2SE1/4;	9
sec. 11, NE1/4, NW1/4NW1/4, E1/2W1/2, SW1/4SW1/4, NW1/4SE1/4;	9
sec. 12, S1/2N1/2, NE1/4SE1/4;	9
sec. 15, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4;	9
sec. 22, W1/2NE1/4, N1/2NW1/4, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SE1/4;	9
sec. 27, Lots 3, 4, 8, 9;	9
sec. 28, Lot 4;	9
sec. 33, E1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 34, Lot 1;	9
T. 9 S., R. 13 E., sec. 7, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
sec. 7, Lots 2, 3;	9
sec. 8, SW1/4SW1/4;	9
sec. 17, NW1/4NW1/4;	9
sec. 18, NE1/4NE1/4;	9
T. 10 S., R. 12 E., sec. 3, SW1/4SW1/4;	9
sec. 3, Lots 4, 5, 6;	9
sec. 4, E1/2SW1/4, SW1/4SE1/4;	9

Off-ROW Access Roads

	Segment
sec. 9, N1/2NE1/4, SE1/4NE1/4;	9
sec. 10, NW1/4, N1/2SW1/4;	9
sec. 10, Lots 1, 2, 3, 4;	9
sec. 13, SW1/4NW1/4, S1/2SE1/4;	9
sec. 14, SE1/4NE1/4;	9
sec. 24, E1/2NE1/4, NE1/4SE1/4;	9
T. 10 S., R. 13 E., sec. 19, Lots 2, 3, 4;	9
sec. 30, E1/2NW1/4, NE1/4SW1/4, W1/2SE1/4;	9
sec. 30, Lot 1;	9
sec. 31, NW1/4NE1/4;	9
sec. 32, N1/2SW1/4, SE1/4SW1/4;	9
T. 11 S., R. 12 E., sec. 12, S1/2NE1/4, SE1/4NW1/4, NE1/4SE1/4;	9
T. 11 S., R. 13 E., sec. 7, E1/2SW1/4, SW1/4SE1/4;	9
sec. 7, Lot 3;	9
sec. 17, S1/2N1/2, NE1/4SE1/4;	9
sec. 18, N1/2NE1/4, SE1/4NE1/4;	9
sec. 22, NW1/4NE1/4, SE1/4NE1/4, N1/2NW1/4;	9
sec. 23, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 24, S1/2SE1/4;	9
sec. 24, NE1/4SE1/4;	9
sec. 25, NE1/4, S1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	9
sec. 26, N1/2NE1/4, SE1/4NE1/4;	9
T. 11 S., R. 14 E., sec. 19, Lot 4;	9

Permanent Off-ROW Facilities

	Segment
T. 10 S., R. 12 E., sec. 14, SE1/4NE1/4;	9

Temporary Construction Sites

	Segment
T. 6 S., R. 8 E., sec. 23, S1/2NW1/4, N1/2SW1/4;	9
sec. 24, W1/2NW1/4;	9
T. 6 S., R. 9 E., sec. 19, SE1/4NE1/4, NE1/4SE1/4;	9
sec. 20, SW1/4NW1/4, NW1/4SW1/4;	9
sec. 23, SW1/4NE1/4;	9
sec. 24, E1/2NW1/4;	9
T. 6 S., R. 10 E., sec. 33, S1/2SW1/4;	9
T. 7 S., R. 6 E., sec. 26, SE1/4SW1/4, W1/2SE1/4;	9
T. 7 S., R. 10 E., sec. 3, Lot 4;	9
sec. 4, Lot 1;	9
sec. 13, N1/2SE1/4;	9

Temporary Construction Sites

	Segment
T. 7 S., R. 11 E., sec. 33, NE1/4;	9
T. 8 S., R. 11 E., sec. 12, S1/2SE1/4;	9
T. 8 S., R. 12 E., sec. 27, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	9
sec. 34, NW1/4NE1/4, NE1/4NW1/4;	9
T. 9 S., R. 12 E., sec. 11, S1/2SW1/4;	9
sec. 14, NW1/4NW1/4;	9
sec. 21, SE1/4SE1/4;	9
sec. 22, SW1/4SW1/4;	9
sec. 27, Lot 3;	9
sec. 28, Lot 1;	9
sec. 33, E1/2SW1/4, W1/2SE1/4;	9
T. 10 S., R. 12 E., sec. 4, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 9, NW1/4NE1/4, NE1/4NW1/4;	9
sec. 10, NE1/4SE1/4;	9
sec. 10, Lot 6;	9
sec. 24, SE1/4NE1/4, NE1/4SE1/4;	9
T. 10 S., R. 13 E., sec. 19, Lots 2, 3;	9
sec. 30, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 32, SE1/4SW1/4, SW1/4SE1/4;	9
T. 11 S., R. 13 E., sec. 5, SE1/4SW1/4, SW1/4SE1/4;	9
sec. 5, Lots 2, 3;	9
sec. 8, NW1/4NE1/4, NE1/4NW1/4;	9
sec. 17, SW1/4NE1/4;	9
sec. 22, W1/2NE1/4;	9
sec. 24, S1/2SW1/4, E1/2SE1/4;	9
T. 11 S., R. 14 E., sec. 19, Lot 4;	9

Kemmerer Field Office

Sixth Principal Meridian

Transmission Line ROW

		Segment
T. 21 N., R. 111 W.,	sec. 20, N1/2N1/2, SE1/4NE1/4;	4
	sec. 22, S1/2NW1/4, N1/2S1/2;	4
	sec. 24, S1/2S1/2;	4
T. 21 N., R. 112 W.,	sec. 14, N1/2SW1/4, SE1/4SW1/4, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 16, S1/2N1/2;	4
	sec. 18, N1/2NE1/4, NE1/4NW1/4;	4
	sec. 18, Lot 5;	4
	sec. 24, N1/2N1/2;	4
T. 21 N., R. 113 W.,	sec. 6, Lot 7;	4
	sec. 8, S1/2NE1/4, NW1/4;	4
	sec. 10, SW1/4NW1/4, N1/2S1/2;	4
	sec. 12, S1/2SW1/4, SW1/4SE1/4;	4
	sec. 12, Lot 4;	4
T. 21 N., R. 114 W.,	sec. 2, N1/2S1/2, SE1/4SE1/4;	4
	sec. 3, SW1/4NE1/4, S1/2NW1/4;	4
	sec. 4, S1/2NE1/4;	4
	sec. 4, Lots 1, 2, 3, 4;	4
	sec. 5, Lots 1, 2;	4
	sec. 12, NE1/4NE1/4;	4
T. 22 N., R. 114 W.,	sec. 31, E1/2SW1/4, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 31, Lot 3;	4
	sec. 32, S1/2SW1/4, SW1/4SE1/4;	4
T. 22 N., R. 115 W.,	sec. 27, S1/2SW1/4;	4
	sec. 28, NW1/4SW1/4, S1/2S1/2;	4
	sec. 29, SW1/4NW1/4, N1/2S1/2, SE1/4SE1/4;	4
	sec. 30, S1/2NE1/4, SE1/4NW1/4, NE1/4SE1/4;	4
	sec. 34, N1/2N1/2, SE1/4NE1/4;	4
	sec. 35, SW1/4NE1/4, W1/2NW1/4, SE1/4NW1/4, N1/2SE1/4;	4
	sec. 36, Lot 39;	4
T. 22 N., R. 116 W.,	sec. 4, Lots 1, 4, 5;	4
	sec. 9, NE1/4, NE1/4NW1/4, NE1/4SE1/4;	4
	sec. 10, Lots 2, 3, 58L, 60L;	4
	sec. 14, Lots 1, 55L, 58L;	4
	sec. 15, Lot 58L;	4
	sec. 23, Lots 1, 55L;	4
	sec. 24, SE1/4SW1/4;	4
	sec. 24, Lots 3, 4, 55L;	4
	sec. 25, NE1/4NW1/4;	4

T. 23 N., R. 116 W.,	sec. 29, W1/2SW1/4, SE1/4SW1/4;	4
	sec. 30, W1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4;	4
	sec. 30, Lots 1, 2;	4
	sec. 32, W1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4, NE1/4SE1/4;	4
	sec. 33, SW1/4SW1/4;	4
	sec. 33, Lot 5;	4
T. 23 N., R. 117 W.,	sec. 7, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 7, Lots 10, 11, 12, 16;	4
	sec. 18, E1/2E1/2;	4
	sec. 19, NE1/4NE1/4;	4
	sec. 20, NE1/4, N1/2NW1/4;	4
	sec. 21, S1/2NW1/4;	4
	sec. 22, NE1/4SW1/4, NW1/4SE1/4;	4
	sec. 24, Lot 5;	4
	sec. 25, N1/2NE1/4, NE1/4NW1/4;	4
	sec. 25, Lot 1;	4
T. 23 N., R. 118 W.,	sec. 2, S1/2NW1/4;	4
	sec. 3, S1/2NW1/4;	4
	sec. 3, Lot 8;	4
	sec. 12, NE1/4NE1/4;	4
T. 24 N., R. 118 W.,	sec. 29, SW1/4SW1/4;	4
	sec. 30, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 30, Lot 7;	4
	sec. 30, SW1/4NW1/4;	4
	sec. 31, NE1/4NE1/4;	4
	sec. 32, S1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4;	4
	sec. 33, W1/2SW1/4;	4
T. 24 N., R. 119 W.,	sec. 10, Lot 1;	4
	sec. 15, SW1/4NE1/4, E1/2NW1/4, N1/2SE1/4;	4
	sec. 15, Lot 1;	4
	sec. 24, S1/2SW1/4;	4
	sec. 25, NW1/4NE1/4, NE1/4NW1/4;	4
	sec. 25, Lots 2, 5;	4
	sec. 25, Lot Z;	4
T. 25 N., R. 119 W.,	sec. 30, SE1/4SE1/4;	4
	sec. 30, Lot 25;	4
	sec. 31, SE1/4NE1/4;	4
	sec. 32, SW1/4NW1/4, NW1/4SW1/4;	4
	sec. 32, Lot 18;	4
	sec. 32, NE1/4SW1/4;	4
	sec. 32, SE1/4SW1/4;	4

	sec. 32, SW1/4SE1/4;	4
T. 25 N., R. 120 W.,	sec. 24, Lots 6, 7, 8;	4

Off-ROW Access Roads

		Segment
T. 20 N., R. 112 W.,	sec. 4, SE1/4SE1/4;	4
	sec. 8, SE1/4SE1/4;	4
T. 21 N., R. 111 W.,	sec. 18, E1/2SW1/4, SW1/4SE1/4;	4
	sec. 18, Lot 7;	4
	sec. 20, NW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, SW1/4SW1/4;	4
	sec. 26, N1/2NW1/4, SE1/4NW1/4, N1/2SW1/4;	4
	sec. 28, NW1/4NE1/4, S1/2N1/2, NW1/4SW1/4;	4
	sec. 30, E1/2NE1/4, N1/2SE1/4, SW1/4SE1/4;	4
T. 21 N., R. 112 W.,	sec. 14, NW1/4SW1/4, S1/2SE1/4;	4
	sec. 16, NE1/4, SE1/4NW1/4, S1/2S1/2, NE1/4SE1/4;	4
	sec. 18, SW1/4NE1/4, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	4
	sec. 20, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, W1/2SE1/4;	4
	sec. 22, W1/2NW1/4, SW1/4, N1/2SE1/4;	4
	sec. 24, N1/2N1/2;	4
	sec. 28, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, NW1/4SE1/4;	4
T. 21 N., R. 113 W.,	sec. 2, S1/2N1/2, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	4
	sec. 2, Lot 1;	4
	sec. 4, SE1/4SE1/4;	4
	sec. 6, SE1/4NW1/4, NE1/4SW1/4;	4
	sec. 6, Lots 5, 6, 7;	4
	sec. 10, N1/2NE1/4, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, N1/2SW1/4, NW1/4SE1/4;	4
	sec. 10, Lot 1;	4
	sec. 12, W1/2W1/2;	4
	sec. 14, SE1/4NE1/4, S1/2S1/2, NE1/4SE1/4;	4
	sec. 16, Lot 2;	4
	sec. 18, NE1/4NE1/4;	4
	sec. 22, NW1/4NE1/4;	4
T. 21 N., R. 114 W.,	sec. 2, NE1/4SW1/4, S1/2SW1/4, SE1/4;	4
	sec. 3, SW1/4NE1/4;	4
	sec. 4, Lot 4;	4
	sec. 5, Lot 1;	4
T. 22 N., R. 115 W.,	sec. 20, NE1/4SW1/4;	4
	sec. 21, S1/2SE1/4;	4
	sec. 23, NE1/4NW1/4, W1/2W1/2;	4

	sec. 26, W1/2W1/2, NE1/4SW1/4, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 27, W1/2SW1/4;	4
	sec. 28, N1/2NE1/4, SE1/4NE1/4, S1/2NW1/4, SW1/4, NE1/4SE1/4;	4
	sec. 29, W1/2NE1/4, SE1/4NE1/4, N1/2NW1/4, SW1/4NW1/4, N1/2SW1/4;	4
	sec. 30, S1/2NE1/4, SE1/4NW1/4;	4
	sec. 34, NE1/4NE1/4, NE1/4NW1/4;	4
	sec. 35, NE1/4NE1/4, SW1/4NE1/4, W1/2NW1/4, NW1/4SE1/4;	4
	sec. 36, Lot 39;	4
T. 22 N., R. 116 W.,	sec. 3, Lot 5;	4
	sec. 4, W1/2NW1/4;	4
	sec. 4, Lots 1, 2, 4, 5;	4
	sec. 5, NE1/4NE1/4;	4
	sec. 9, NE1/4, NE1/4NW1/4, NE1/4SE1/4;	4
	sec. 9, Lot 1;	4
	sec. 10, Lots 1, 3, 4, 58L, 60L, 61L;	4
	sec. 14, Lots 1,58L;	4
	sec. 15, Lot 58L;	4
	sec. 23, Lots 2, 55L;	4
	sec. 24, SE1/4SW1/4;	4
	sec. 24, Lots 3, 55L;	4
	sec. 28, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SE1/4;	4
	sec. 29, N1/2N1/2;	4
	sec. 30, S1/2NE1/4;	4
	sec. 30, Lots 6, 54L;	4
T. 22 N., R. 117 W.,	sec. 3, S1/2NW1/4, NE1/4SW1/4, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 3, Lot 8;	4
	sec. 4, Lots 5, 6;	4
	sec. 10, NE1/4NE1/4, E1/2SE1/4;	4
	sec. 11, W1/2NW1/4, NW1/4SW1/4;	4
	sec. 14, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, S1/2SE1/4;	4
	sec. 15, N1/2NE1/4, SE1/4NE1/4;	4
	sec. 23, NE1/4NE1/4;	4
	sec. 24, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 25, NE1/4NE1/4;	4
T. 23 N., R. 116 W.,	sec. 29, W1/2SW1/4;	4
	sec. 30, S1/2NE1/4, SE1/4SE1/4;	4
	sec. 31, N1/2NE1/4;	4

	sec. 31, Lot 1;	4
	sec. 32, W1/2NE1/4, SE1/4NE1/4, NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	4
	sec. 33, SW1/4SW1/4;	4
T. 23 N., R. 117 W.,	sec. 5, SW1/4NE1/4, SE1/4NW1/4;	4
	sec. 5, Lots 6, 7, 8;	4
	sec. 6, Lots 8, 9;	4
	sec. 18, NE1/4NE1/4, S1/2SE1/4;	4
	sec. 18, Lots 14, 15, 16;	4
	sec. 19, NE1/4NE1/4;	4
	sec. 21, S1/2NW1/4;	4
	sec. 22, NE1/4SW1/4, NW1/4SE1/4;	4
	sec. 25, N1/2NE1/4;	4
	sec. 25, Lot 1;	4
	sec. 30, Lot 14;	4
	sec. 31, N1/2SE1/4;	4
	sec. 31, Lots 6, 7, 9, 10, 11;	4
	sec. 32, NW1/4SW1/4, W1/2SE1/4, SE1/4SE1/4;	4
	sec. 33, S1/2SW1/4, SW1/4SE1/4;	4
	sec. 36, Lots 3, 4;	4
T. 23 N., R. 118 W.,	sec. 2, SW1/4NW1/4, W1/2SW1/4;	4
	sec. 2, Lots 7, 8;	4
	sec. 3, S1/2NW1/4;	4
	sec. 3, Lot 8;	4
	sec. 5, Lots 6, 7, 8;	4
	sec. 6, SE1/4NE1/4;	4
	sec. 6, Lots 8, 9, 10, 15;	4
	sec. 6, NW1/4NW1/4;	4
	sec. 11, W1/2NW1/4, NW1/4SW1/4;	4
	sec. 12, N1/2NE1/4;	4
	sec. 13, SE1/4SW1/4, S1/2SE1/4;	4
	sec. 14, NW1/4NW1/4;	4
	sec. 15, E1/2E1/2;	4
	sec. 22, NE1/4NE1/4;	4
	sec. 23, NE1/4NE1/4, S1/2N1/2, NW1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 24, N1/2NW1/4;	4
	sec. 25, SW1/4SW1/4;	4
	sec. 26, E1/2E1/2;	4
T. 23 N., R. 119 W.,	sec. 1, Lots 21, 22;	4
	sec. 1, Tracts 118D, 119A, 119B	4
T. 24 N., R. 117 W.,	sec. 27, SW1/4NW1/4;	4
	sec. 27, Lots 2, 3;	4

	sec. 28, N1/2N1/2, SE1/4NE1/4, SW1/4NW1/4, W1/2SW1/4;	4
	sec. 29, S1/2SW1/4, SW1/4SE1/4;	4
	sec. 30, S1/2SE1/4;	4
	sec. 30, Lots 10, 13, 14, 17;	4
	sec. 31, Lots 12, 13, 14;	4
	sec. 32, N1/2NE1/4, NE1/4NW1/4, N1/2SE1/4, SW1/4SE1/4;	4
	sec. 33, NW1/4NW1/4;	4
	sec. 35, Lot 7;	4
T. 24 N., R. 118 W.,	sec. 4, NW1/4SW1/4, S1/2S1/2;	4
	sec. 4, Lots 8, 9, 16;	4
	sec. 5, Lots 5, 12;	4
	sec. 9, NE1/4NE1/4;	4
	sec. 10, SW1/4NE1/4, NW1/4NW1/4, S1/2NW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 11, S1/2SW1/4, SE1/4;	4
	sec. 12, S1/2SW1/4, SW1/4SE1/4;	4
	sec. 13, W1/2NE1/4, SE1/4NE1/4, E1/2SE1/4;	4
	sec. 15, W1/2E1/2;	4
	sec. 22, NW1/4NE1/4, S1/2NE1/4, SE1/4;	4
	sec. 24, E1/2E1/2, SW1/4NE1/4, NW1/4SE1/4;	4
	sec. 27, SW1/4SE1/4;	4
	sec. 29, SW1/4SW1/4;	4
	sec. 30, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 30, Lot 7;	4
	sec. 30, Tracts 111A, 111B	4
	sec. 31, SE1/4SW1/4, S1/2SE1/4;	4
	sec. 32, S1/2NE1/4, N1/2NW1/4, S1/2SW1/4, SE1/4;	4
	sec. 33, W1/2SW1/4;	4
	sec. 34, W1/2NE1/4, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	4
	sec. 35, SW1/4SE1/4;	4
T. 24 N., R. 119 W.,	sec. 3, SE1/4SW1/4;	4
	sec. 3, Lots 36, 38, 45;	4
	sec. 7, Lots 37, 39;	4
	sec. 10, E1/2W1/2, SW1/4SE1/4;	4
	sec. 15, W1/2NE1/4, NW1/4SE1/4;	4
	sec. 22, Lot 2;	4
	sec. 24, SW1/4SW1/4;	4
	sec. 25, NW1/4NE1/4, W1/2NW1/4;	4
	sec. 25, Lots 2, 27, Z;	4
	sec. 25, Tracts 111L	4
	sec. 26, SE1/4NE1/4;	4

	sec. 26, Lot 14;	4
	sec. 26, Tracts 116B, 116C;	4
	sec. 35, Lots 25, 27;	4
	sec. 35, Tracts 116C, 116D;	4
	sec. 36, Lots 22, 27;	4
	sec. 36, Tracts 118A, 118B;	4
T. 24 N., R. 120 W.,	sec. 1, Tracts 41B;	4
	sec. 2, Lots 24, 25;	4
	sec. 3, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	4
	sec. 3, Lots 13, 14;	4
	sec. 4, Lot 8;	4
T. 25 N., R. 118 W.,	sec. 35, S1/2SW1/4;	4
T. 25 N., R. 119 W.,	sec. 6, Lot 25;	4
	sec. 29, Tracts 52L;	4
	sec. 32, SW1/4NW1/4, NW1/4SW1/4;	4
	sec. 32, Lots 8, 9, 15;	4
	sec. 32, Tracts 50L, 51L;	4
T. 25 N., R. 120 W.,	sec. 24, Lots 6, 7;	4
	sec. 25, Lots 5, 6, 7, 8, 11, 14;	4

Permanent Off-ROW Facilities

		Segment
T. 22 N., R. 116 W.,	sec. 24, SE1/4SW1/4;	4
	sec. 24, Lot 3;	4

Temporary Construction Sites

		Segment
T. 21 N., R. 111 W.,	sec. 20, NW1/4NW1/4;	4
T. 21 N., R. 112 W.,	sec. 24, N1/2NW1/4;	4
T. 22 N., R. 116 W.,	sec. 4, Lot 4;	4
	sec. 9, NE1/4NW1/4;	4
T. 23 N., R. 116 W.,	sec. 30, W1/2NE1/4, SE1/4NE1/4;	4
T. 23 N., R. 117 W.,	sec. 17, NW1/4NW1/4;	4
	sec. 18, NE1/4NE1/4;	4
	sec. 19, N1/2NE1/4;	4
	sec. 22, NE1/4SW1/4;	4
T. 23 N., R. 118 W.,	sec. 12, NE1/4NE1/4;	4
T. 24 N., R. 119 W.,	sec. 10, Lot 1;	4
T. 25 N., R. 119 W.,	sec. 30, Lot 25;	4
T. 25 N., R. 120 W.,	sec. 24, Lots 6, 7;	4

Owyhee Field Office

Boise Meridian

Transmission Line ROW

		Segment
T. 1 S., R. 3 W.,	sec. 11, SW1/4SE1/4;	8
	sec. 11, SW1/4SW1/4;	9
	sec. 14, NW1/4SW1/4, SW1/4SW1/4;	9
	sec. 23, S1/2NW1/4, E1/2SW1/4, W1/2SE1/4;	9
	sec. 23, Lots 3, 4;	9
	sec. 25, NW1/4SW1/4, S1/2SW1/4;	9
	sec. 26, NE1/4, NE1/4SE1/4;	9
T. 2 S., R. 2 W.,	sec. 6, Lots 4, 5, 6, 7;	9
	sec. 7, E1/2W1/2;	9
	sec. 7, Lots 1, 2;	9
	sec. 18, E1/2NW1/4, NE1/4SW1/4, W1/2SE1/4;	9
	sec. 19, N1/2NE1/4, SE1/4NE1/4;	9
	sec. 20, SW1/4NW1/4, SW1/4;	9
	sec. 28, SW1/4SW1/4;	9
	sec. 29, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
	sec. 33, NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	9
T. 2 S., R. 3 W.,	sec. 1, Lot 1;	9
T. 2 S., R. 5 E.,	sec. 1, Lots 1, 2;	9
T. 3 S., R. 2 W.,	sec. 2, S1/2SW1/4;	9
	sec. 3, SW1/4NE1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
	sec. 3, Lots 3, 4;	9
	sec. 4, Lot 1;	9
	sec. 11, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
	sec. 12, SW1/4NW1/4, SW1/4;	9
	sec. 13, W1/2NE1/4, NE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
T. 4 S., R. 1 W.,	sec. 4, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
	sec. 5, SE1/4NE1/4;	9
	sec. 5, Lots 1, 2;	9
	sec. 9, NE1/4, NE1/4SE1/4;	9
	sec. 10, NW1/4SW1/4, S1/2SW1/4;	9
	sec. 15, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, SE1/4;	9
	sec. 22, NE1/4, S1/2SE1/4;	9
	sec. 27, E1/2;	9
	sec. 34, E1/2SE1/4;	9
T. 5 S., R. 1 E.,	sec. 18, Lot 4;	9
	sec. 19, SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4;	9

Transmission Line ROW

		Segment
	sec. 19, Lots 1, 2;	9
	sec. 29, SW1/4NW1/4, NW1/4SW1/4, S1/2SW1/4;	9
	sec. 30, N1/2NE1/4, SE1/4NE1/4;	9
	sec. 32, NW1/4NE1/4, NE1/4NW1/4;	9
T. 5 S., R. 1 W.,	sec. 2, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	9
	sec. 3, SE1/4NE1/4;	9
	sec. 3, Lot 1;	9
	sec. 11, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
	sec. 12, NW1/4SW1/4, S1/2SW1/4;	9
	sec. 13, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
	sec. 24, NE1/4NE1/4;	9

Off-ROW Access Roads

		Segment
T. 1 S., R. 3 W.,	sec. 11, SW1/4SW1/4;	9
	sec. 14, NW1/4SW1/4;	9
	sec. 23, E1/2SW1/4, SW1/4SE1/4;	9
	sec. 25, SW1/4SW1/4;	9
	sec. 26, NW1/4NE1/4, S1/2NE1/4, E1/2SE1/4;	9
	sec. 35, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4, NE1/4SE1/4;	9
T. 2 S., R. 2 W.,	sec. 6, Lots 4, 5, 6, 7;	9
	sec. 7, SE1/4NW1/4, E1/2SW1/4;	9
	sec. 7, Lots 1, 2;	9
	sec. 17, NE1/4NE1/4, W1/2E1/2, SW1/4;	9
	sec. 18, W1/2E1/2, E1/2NW1/4, NE1/4SW1/4, NE1/4SE1/4;	9
	sec. 20, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, SE1/4SW1/4;	9
	sec. 21, E1/2NW1/4, SW1/4NW1/4, SW1/4;	9
	sec. 27, SW1/4;	9
	sec. 28, NE1/4NE1/4, NW1/4SW1/4, S1/2S1/2;	9
	sec. 29, SW1/4NE1/4, E1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
	sec. 32, E1/2NE1/4, SW1/4NE1/4, N1/2SE1/4, SW1/4SE1/4;	9
	sec. 33, N1/2NE1/4, NW1/4NW1/4;	9
	sec. 34, SE1/4NW1/4, E1/2SW1/4;	9
T. 2 S., R. 3 W.,	sec. 1, SE1/4NE1/4, NE1/4SE1/4;	9
	sec. 1, Lot 1;	9
T. 3 S., R. 1 W.,	sec. 18, Lots 3, 7;	9
T. 3 S., R. 2 W.,	sec. 3, SW1/4NE1/4, NW1/4SE1/4;	9

Off-ROW Access Roads

		Segment
	sec. 3, Lots 3, 4;	9
	sec. 4, Lot 1;	9
	sec. 11, SE1/4NE1/4, NE1/4SE1/4;	9
	sec. 12, NW1/4SW1/4, N1/2SE1/4, SW1/4SE1/4;	9
	sec. 13, W1/2NE1/4, E1/2NW1/4, N1/2SE1/4, SE1/4SE1/4;	9
T. 4 S., R. 1 W.,	sec. 4, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4;	9
	sec. 4, Lots 3, 4;	9
	sec. 5, SE1/4NE1/4;	9
	sec. 9, N1/2NE1/4, SE1/4NE1/4;	9
	sec. 10, NW1/4, N1/2SW1/4, E1/2SE1/4, SW1/4SE1/4;	9
	sec. 15, NW1/4NE1/4, SE1/4NE1/4, E1/2SE1/4;	9
	sec. 22, NW1/4NE1/4, SE1/4SE1/4;	9
	sec. 23, S1/2SW1/4;	9
	sec. 26, NW1/4NW1/4;	9
	sec. 27, N1/2NE1/4, SW1/4NE1/4, NW1/4SE1/4;	9
T. 5 S., R. 1 E.,	sec. 6, Lot 4;	9
	sec. 18, Lots 4;	9
	sec. 19, E1/2SW1/4, S1/2SE1/4;	9
	sec. 19, Lots 1, 2, 3, 4;	9
	sec. 20, SE1/4NE1/4, S1/2SW1/4, SW1/4SE1/4;	9
	sec. 29, W1/2NE1/4, NW1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;	9
	sec. 30, NW1/4NE1/4, SE1/4NE1/4, NE1/4NW1/4;	9
	sec. 30, Lots 1, 2, 3;	9
	sec. 32, NW1/4NE1/4, NE1/4NW1/4;	9
T. 5 S., R. 1 W.,	sec. 1, E1/2SW1/4, SW1/4SW1/4;	9
	sec. 2, SE1/4SE1/4;	9
	sec. 11, N1/2NE1/4;	9
	sec. 12, SE1/4NW1/4, W1/2SW1/4, NE1/4SW1/4;	9
	sec. 13, SE1/4SE1/4;	9
	sec. 24, NE1/4SE1/4;	9
	sec. 25, E1/2NE1/4, NE1/4SE1/4;	9

Permanent Off-ROW Facilities

Segment

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

		Segment
T. 1 S., R. 3 W.,	sec. 11, SE1/4SW1/4, SW1/4SE1/4;	9
	sec. 14, SW1/4NE1/4;	9

	sec. 23, SW1/4NE1/4, SE1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	9
T. 2 S., R. 2 W.,	sec. 6, E1/2SW1/4, W1/2SE1/4;	9
	sec. 6, Lots 4, 5;	9
	sec. 18, NE1/4SW1/4, NW1/4SE1/4;	9
	sec. 21, SE1/4NW1/4;	9
	sec. 33, W1/2SE1/4;	9
T. 2 S., R. 3 W.,	sec. 1, Lot 1;	9
T. 3 S., R. 2 W.,	sec. 3, E1/2SE1/4;	9
	sec. 12, N1/2SW1/4, SW1/4SW1/4;	9
	sec. 13, SE1/4SE1/4;	9
T. 4 S., R. 1 W.,	sec. 4, SW1/4NW1/4;	9
	sec. 4, Lot 4;	9
	sec. 5, SE1/4NE1/4;	9
	sec. 5, Lot 1;	9
	sec. 15, N1/2NE1/4, SE1/4NE1/4;	9
	sec. 27, S1/2NE1/4;	9
	sec. 34, SE1/4SE1/4;	9
T. 5 S., R. 1 E.,	sec. 19, Lot 1;	9
T. 5 S., R. 1 W.,	sec. 3, Lots 1, 2;	9
	sec. 24, NE1/4NE1/4;	9

Pocatello Field Office

Boise Meridian

Transmission Line ROW

		Segment
T. 12 S., R. 37 E.,	sec. 2, SW1/4SE1/4;	4
	sec. 11, NE1/4NE1/4;	4
	sec. 12, NW1/4NW1/4;	4
T. 12 S., R. 38 E.,	sec. 13, Lot 4;	4
T. 12 S., R. 40 E.,	sec. 17, SW1/4NW1/4, NW1/4SW1/4;	4
	sec. 18, E1/2SE1/4, SW1/4SE1/4;	4
	sec. 19, Lot 1;	4
T. 12 S., R. 41 E.,	sec. 5, S1/2NE1/4, SE1/4NW1/4;	4
T. 12 S., R. 43 E.,	sec. 7, Lot 3;	4
	sec. 18, E1/2NW1/4;	4
T. 13 S., R. 45 E.,	sec. 27, W1/2NW1/4, NW1/4SW1/4, SE1/4SW1/4;	4
	sec. 28, NE1/4NE1/4;	4
	sec. 34, SW1/4NE1/4, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	4
T. 14 S., R. 45 E.,	sec. 12, Lots 2, 3, 4;	4
	sec. 13, Lots 1, 4, 5;	4
T. 14 S., R. 46 E.,	sec. 18, E1/2SW1/4, SW1/4SE1/4;	4
	sec. 18, Lots 3, 4;	4
	sec. 20, SW1/4NW1/4, SW1/4SW1/4;	4
	sec. 28, N1/2SW1/4;	4
T. 15 S., R. 46 E.,	sec. 2, Lot 4;	4
T. 8 S., R. 31 E.,	sec. 34, SW1/4SW1/4;	5
T. 9 S., R. 31 E.,	sec. 3, NE1/4SW1/4;	5
	sec. 3, Lot 4;	5
	sec. 35, NW1/4NE1/4;	5
	sec. 14, SW1/4NW1/4, E1/2SW1/4;	5
	sec. 23, SW1/4SW1/4;	5
	sec. 26, NE1/4SW1/4;	5
T. 10 S., R. 31 E.,	sec. 12, NW1/4NE1/4;	5
T. 10 S., R. 35 E.,	sec. 25, S1/2;	5
	sec. 26, SE1/4;	5
	sec. 27, SW1/4SW1/4;	5
	sec. 28, W1/2SW1/4;	5
	sec. 29, SE1/4SE1/4;	5
	sec. 32, E1/2NE1/4, E1/2SW1/4;	5
	sec. 33, NW1/4NW1/4;	5
T. 11 S., R. 34 E.,	sec. 27, E1/2E1/2, SW1/4SE1/4;	5
	sec. 34, N1/2NE1/4, NE1/4NW1/4;	5
T. 11 S., R. 35 E.,	sec. 5, Lot 4;	5

Transmission Line ROW

		Segment
T. 11 S., R. 36 E.,	sec. 11, E1/2SE1/4;	5
	sec. 12, NW1/4SW1/4, S1/2SW1/4;	5
	sec. 13, NW1/4NE1/4, NE1/4NW1/4;	5
T. 11 S., R. 37 E.,	sec. 19, N1/2SE1/4, SE1/4SE1/4;	5
T. 12 S., R. 31 E.,	sec. 13, SE1/4SE1/4;	5
	sec. 24, E1/2NE1/4;	5
T. 12 S., R. 32 E.,	sec. 19, E1/2SW1/4, SE1/4;	5
	sec. 19, Lots 2, 3;	5
	sec. 20, N1/2SW1/4, NW1/4SE1/4;	5
	sec. 21, NE1/4SW1/4, N1/2SE1/4;	5
	sec. 24, N1/2S1/2;	5
T. 12 S., R. 34 E.,	sec. 4, SW1/4NW1/4;	5
	sec. 5, SE1/4SW1/4;	5
	sec. 7, SE1/4NE1/4, E1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	5
	sec. 7, Lot 4;	5
	sec. 8, N1/2NW1/4, SW1/4NW1/4;	5
	sec. 18, Lot 1;	5
T. 10 S., R. 29 E.,	sec. 12, Lots 3, 4;	7
T. 10 S., R. 30 E.,	sec. 28, SE1/4NW1/4;	7
T. 11 S., R. 34 E.,	sec. 26, SW1/4NW1/4, W1/2SW1/4;	7
	sec. 34, NE1/4NE1/4;	7
	sec. 35, NW1/4NW1/4;	7
T. 11 S., R. 36 E.,	sec. 11, SE1/4SE1/4;	7
	sec. 13, NW1/4;	7
	sec. 14, NE1/4NE1/4;	7
T. 12 S., R. 31 E.,	sec. 24, SW1/4NW1/4, SW1/4, S1/2SE1/4;	7
T. 12 S., R. 32 E.,	sec. 30, Lot 1;	7
	sec. 19, Lot 4;	7
	sec. 19, SE1/4SW1/4, S1/2SE1/4;	7
	sec. 21, SE1/4SW1/4, S1/2SE1/4;	7
	sec. 24, S1/2S1/2;	7
	sec. 28, N1/2N1/2;	7
	sec. 30, N1/2NE1/4, NE1/4NW1/4;	7
T. 12 S., R. 33 E.,	sec. 13, NE1/4SE1/4;	7
T. 12 S., R. 34 E.,	sec. 7, NE1/4SE1/4, S1/2SE1/4;	7
	sec. 8, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	7
	sec. 18, NW1/4NE1/4, E1/2NW1/4;	7
	sec. 18, Lot 2;	7

Off-ROW Access Roads

		Segment
T. 11 S., R. 41 E.,	sec. 22, SE1/4SW1/4;	4
	sec. 22, Lots 3, 4;	4
T. 12 S., R. 37 E.,	sec. 2, SW1/4SE1/4;	4
T. 12 S., R. 38 E.,	sec. 13, Lot 4;	4
T. 12 S., R. 40 E.,	sec. 17, NW1/4SW1/4;	4
	sec. 18, SE1/4SW1/4, E1/2SE1/4, SW1/4SE1/4;	4
	sec. 18, Lot 4;	4
	sec. 19, Lot 1;	4
	sec. 28, N1/2NW1/4, SE1/4NW1/4;	4
T. 12 S., R. 42 E.,	sec. 13, NE1/4NW1/4;	4
	sec. 24, NW1/4NW1/4;	4
T. 12 S., R. 43 E.,	sec. 7, Lot 3;	4
	sec. 18, E1/2NW1/4;	4
T. 13 S., R. 45 E.,	sec. 22, SW1/4SW1/4;	4
	sec. 27, W1/2NW1/4, NW1/4SW1/4, SE1/4SW1/4;	4
	sec. 28, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4;	4
	sec. 33, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4;	4
	sec. 34, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4;	4
T. 14 S., R. 45 E.,	sec. 12, Lot 4;	4
	sec. 13, Lots 1, 4	4
T. 14 S., R. 46 E.,	sec. 18, SW1/4NE1/4, E1/2W1/2, W1/2SE1/4;	4
	sec. 18, Lot 3;	4
	sec. 19, SE1/4SE1/4;	4
	sec. 20, SW1/4NW1/4, SW1/4SW1/4;	4
	sec. 28, NW1/4SW1/4;	4
	sec. 32, NE1/4NE1/4;	4
T. 15 S., R. 46 E.,	sec. 2, Lot 4;	4
	sec. 3, SE1/4SE1/4;	4
	sec. 10, E1/2NE1/4;	4
	sec. 11, Lots 3, 4;	4
	sec. 15, NE1/4NE1/4, SW1/4SW1/4;	4
	sec. 20, N1/2SE1/4;	4
	sec. 21, SW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SE1/4;	4
	sec. 22, W1/2NW1/4, NW1/4SW1/4;	4
	sec. 26, Lot 3;	4
	sec. 27, NW1/4NE1/4, SE1/4NE1/4, W1/2NW1/4;	4
	sec. 28, NE1/4NE1/4;	4
T. 8 S., R. 31 E.,	sec. 34, S1/2SW1/4;	5
T. 9 S., R. 31 E.,	sec. 3, NE1/4SW1/4, NW1/4SE1/4;	5
	sec. 3, Lots 3, 4;	5

Off-ROW Access Roads

		Segment
	sec. 14, E1/2SW1/4;	5
	sec. 23, SW1/4SW1/4;	5
	sec. 35, NW1/4NE1/4;	5
T. 10 S., R. 35 E.,	sec. 25, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	5
	sec. 26, N1/2SE1/4, SW1/4SE1/4;	5
	sec. 28, W1/2SW1/4;	5
	sec. 32, E1/2NE1/4, E1/2SW1/4;	5
	sec. 33, NW1/4NW1/4;	5
T. 11 S., R. 34 E.,	sec. 26, SW1/4NW1/4;	5
	sec. 27, NE1/4, NE1/4NW1/4, E1/2SE1/4, SW1/4SE1/4;	5
	sec. 34, NW1/4NE1/4, NE1/4NW1/4;	5
T. 11 S., R. 36 E.,	sec. 11, E1/2SE1/4;	5
	sec. 12, S1/2SW1/4, SW1/4SE1/4;	5
	sec. 13, N1/2NE1/4, NE1/4NW1/4, SE1/4NW1/4;	5
T. 12 S., R. 31 E.,	sec. 13, SE1/4SE1/4;	5
	sec. 24, E1/2NE1/4;	5
T. 12 S., R. 32 E.,	sec. 19, E1/2SW1/4, N1/2SE1/4, SE1/4SE1/4;	5
	sec. 19, Lot 3;	5
	sec. 20, N1/2SW1/4, NW1/4SE1/4;	5
	sec. 21, SW1/4NW1/4, E1/2SW1/4, SE1/4;	5
	sec. 24, SE1/4NW1/4, S1/2;	5
T. 12 S., R. 34 E.,	sec. 5, SE1/4NE1/4, SE1/4SW1/4;	5
	sec. 5, Lot 1;	5
	sec. 7, S1/2NE1/4, E1/2SW1/4, SE1/4;	5
	sec. 7, Lot 4;	5
	sec. 8, SW1/4NE1/4, NW1/4, N1/2SW1/4, SW1/4SW1/4;	5
	sec. 18, Lot 1;	5
T. 10 S., R. 29 E.,	sec. 12, Lots 3, 4;	7
T. 10 S., R. 30 E.,	sec. 7, Lot 4;	7
	sec. 20, SE1/4SE1/4;	7
T. 11 S., R. 34 E.,	sec. 26, SW1/4NW1/4, W1/2SW1/4;	7
	sec. 34, NE1/4NE1/4, NE1/4NW1/4;	7
	sec. 35, NW1/4NW1/4;	7
T. 11 S., R. 36 E.,	sec. 11, E1/2SE1/4;	7
	sec. 13, NW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4;	7
	sec. 14, NE1/4NE1/4;	7
T. 12 S., R. 31 E.,	sec. 24, NW1/4NW1/4, S1/2NW1/4, SW1/4, S1/2SE1/4;	7
T. 12 S., R. 32 E.,	sec. 19, SE1/4SW1/4, S1/2SE1/4;	7
	sec. 19, Lot 4;	7
	sec. 21, SW1/4NW1/4, E1/2SW1/4, SE1/4;	7
	sec. 24, SE1/4NW1/4, S1/2;	7

Off-ROW Access Roads

		Segment
	sec. 25, NW1/4NW1/4;	7
	sec. 28, N1/2NW1/4;	7
	sec. 30, NW1/4NE1/4, NE1/4NW1/4;	7
	sec. 30, Lot 1;	7
T. 12 S., R. 33 E.,	sec. 13, NE1/4SE1/4;	7
T. 12 S., R. 34 E.,	sec. 7, S1/2NE1/4, SE1/4;	7
	sec. 8, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4;	7
	sec. 17, W1/2W1/2, SE1/4SW1/4;	7
	sec. 18, N1/2NE1/4;	7
	sec. 18, Lots 2, 3;	7
	sec. 20, N1/2NE1/4, NE1/4NW1/4;	7
	sec. 21, W1/2NW1/4;	7

Permanent Off-ROW Facilities

		Segment

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

		Segment
T. 12 S., R. 43 E.,	sec. 18, E1/2NW1/4;	4
T. 13 S., R. 45 E.,	sec. 34, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	4
T. 14 S., R. 45 E.,	sec. 13, Lots 1, 3, 4;	4
T. 9 S., R. 31 E.,	sec. 14, E1/2SW1/4;	5
T. 10 S., R. 35 E.,	sec. 28, W1/2SW1/4;	5
	sec. 33, NE1/4NW1/4;	5
T. 11 S., R. 34 E.,	sec. 27, S1/2SE1/4;	5
	sec. 34, N1/2NE1/4;	5
T. 11 S., R. 36 E.,	sec. 13, NW1/4NE1/4;	5
T. 12 S., R. 31 E.,	sec. 24, SE1/4NE1/4;	5
T. 12 S., R. 32 E.,	sec. 19, E1/2SW1/4;	5
	sec. 19, Lots 2, 3;	5
	sec. 24, NE1/4SE1/4;	5
T. 11 S., R. 34 E.,	sec. 34, NE1/4NE1/4;	7
	sec. 35, NW1/4NW1/4;	7
T. 11 S., R. 36 E.,	sec. 13, SE1/4NW1/4;	7
T. 12 S., R. 31 E.,	sec. 24, SE1/4SW1/4;	7
	sec. 25, NE1/4NW1/4;	7
T. 12 S., R. 32 E.,	sec. 19, SE1/4SW1/4;	7
	sec. 19, Lot 4;	7
	sec. 24, SE1/4SE1/4;	7
	sec. 28, N1/2NW1/4;	7

Rawlins Field Office

Sixth Principal Meridian

Transmission Line ROW

		Segment
T. 24 N., R. 80 W.,	sec. 2, S1/2NE1/4, SE1/4SW1/4, SE1/4;	1W
	sec. 2, Lot 1;	1W
	sec. 10, E1/2SE1/4;	1W
	sec. 14, W1/2NW1/4;	1W
	sec. 22, E1/2E1/2, NW1/4NE1/4, E1/2NW1/4, SW1/4;	1W
	sec. 26, W1/2NW1/4, E1/2SW1/4, SW1/4SE1/4;	1W
T. 25 N., R. 79 W.,	sec. 2, SW1/4NE1/4, S1/2NW1/4, SW1/4;	1W
	sec. 2, Lots 1, 2, 3;	1W
	sec. 10, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4, E1/2SE1/4, SW1/4SE1/4;	1W
T. 26 N., R. 78 W.,	sec. 6, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4;	1W
	sec. 6, Lots 2, 3, 4, 5, 6;	1W
	sec. 7, E1/2NW1/4, NE1/4SW1/4;	1W
	sec. 7, Lots 3, 4;	1W
	sec. 19, Lot 1;	1W
T. 26 N., R. 79 W.,	sec. 1, E1/2SE1/4, SW1/4SE1/4;	1W
	sec. 12, W1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SW1/4SW1/4;	1W
	sec. 13, W1/2NW1/4, NW1/4SW1/4, SE1/4SE1/4;	1W
	sec. 14, SE1/4NE1/4, E1/2SE1/4;	1W
	sec. 23, NE1/4NE1/4, E1/2SE1/4;	1W
	sec. 24, E1/2NE1/4, S1/2SE1/4;	1W
	sec. 25, N1/2NE1/4, SW1/4NE1/4, NW1/4SE1/4;	1W
	sec. 35, SE1/4SW1/4, SE1/4;	1W
T. 27 N., R. 78 W.,	sec. 6, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4, W1/2SE1/4;	1W
	sec. 6, Lots 2, 3, 4, 5, 6, 7;	1W
	sec. 7, NW1/4NE1/4, SW1/4SE1/4;	1W
	sec. 7, Lots 1, 2, 4;	1W
	sec. 18, W1/2E1/2, SE1/4NW1/4, E1/2SW1/4;	1W
	sec. 18, Lots 1, 2, 3, 4;	1W
	sec. 19, W1/2E1/2, E1/2W1/2;	1W
	sec. 19, Lots 1, 2, 3, 4;	1W
	sec. 30, W1/2E1/2, E1/2W1/2;	1W
	sec. 30, Lots 1, 2, 3, 4;	1W
	sec. 31, W1/2E1/2, E1/2W1/2;	1W
	sec. 31, Lots 1, 2, 3, 4;	1W
T. 28 N., R. 78 W.,	sec. 5, SW1/4, W1/2SE1/4;	1W
	sec. 5, Lots 5, 6, 7, 10, 11, 12;	1W
	sec. 7, E1/2NE1/4, SE1/4;	1W

Transmission Line ROW

		Segment
	sec. 8, NW1/4, W1/2SW1/4;	1W
	sec. 18, NE1/4, E1/2SW1/4, W1/2SE1/4;	1W
	sec. 18, Lots 4, 5, 6;	1W
	sec. 19, E1/2SW1/4;	1W
	sec. 19, Lots 1, 2, 3, 4, 5, 6;	1W
	sec. 30, E1/2NW1/4, NE1/4SW1/4;	1W
	sec. 30, Lots 1, 2, 7, 8, 9;	1W
	sec. 31, Lots 7, 8, 9, 10, 15, 16, 17, 18;	1W
T. 19 N., R. 92 W.,	sec. 4, S1/2NW1/4;	2
	sec. 4, Lots 1, 2, 3;	2
	sec. 6, SE1/4SW1/4, S1/2SE1/4;	2
T. 19 N., R. 93 W.,	sec. 10, S1/2S1/2;	2
	sec. 12, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	2
	sec. 16, NW1/4NW1/4;	2
	sec. 18, S1/2NE1/4, NE1/4SW1/4, NW1/4SE1/4;	2
	sec. 18, Lots 3, 4;	2
T. 19 N., R. 94 W.,	sec. 24, N1/2NW1/4;	2
T. 20 N., R. 88 W.,	sec. 2, Lots 1, 2, 3, 4;	2
	sec. 4, Lots 1, 2, 3, 4;	2
	sec. 6, N1/2SE1/4;	2
	sec. 6, Lots 1, 2;	2
T. 20 N., R. 89 W.,	sec. 2, S1/2SE1/4;	2
	sec. 8, S1/2SW1/4, SE1/4;	2
	sec. 10, NE1/4, S1/2NW1/4;	2
	sec. 18, N1/2NE1/4;	2
	sec. 18, Lot 1;	2
T. 20 N., R. 90 W.,	sec. 14, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, NW1/4SE1/4;	2
	sec. 20, N1/2NE1/4, SW1/4NE1/4, S1/2NW1/4;	2
T. 20 N., R. 91 W.,	sec. 24, S1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	2
	sec. 26, N1/2N1/2;	2
	sec. 28, SE1/4NE1/4, N1/2S1/2, SW1/4SW1/4;	2
	sec. 30, SE1/4SE1/4;	2
	sec. 32, NW1/4NW1/4;	2
T. 20 N., R. 92 W.,	sec. 34, S1/2S1/2;	2
T. 21 N., R. 83 W.,	sec. 4, SW1/4NW1/4, NW1/4SW1/4;	2
	sec. 4, Lots 3, 4;	2
	sec. 8, NW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, W1/2SW1/4;	2
T. 21 N., R. 84 W.,	sec. 24, SE1/4SE1/4;	2
	sec. 25, N1/2NE1/4, SW1/4NE1/4;	2

Transmission Line ROW

		Segment
	sec. 26, SE1/4NE1/4, E1/2SW1/4, SW1/4SE1/4;	2
	sec. 32, NW1/4NE1/4, N1/2NW1/4;	2
	sec. 32, Lots 1, 5;	2
T. 21 N., R. 85 W.,	sec. 32, SW1/4NE1/4, W1/2NW1/4, SE1/4NW1/4, NW1/4SE1/4;	2
	sec. 32, Lots 3, 7;	2
	sec. 34, N1/2S1/2;	2
	sec. 36, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4;	2
T. 21 N., R. 86 W.,	sec. 32, S1/2N1/2;	2
	sec. 34, S1/2N1/2;	2
T. 21 N., R. 87 W.,	sec. 32, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	2
	sec. 34, S1/2N1/2;	2
T. 21 N., R. 88 W.,	sec. 36, SE1/4SE1/4;	2
T. 22 N., R. 82 W.,	sec. 2, SW1/4NW1/4;	2
	sec. 2, Lots 3, 4;	2
	sec. 4, SE1/4SE1/4;	2
	sec. 8, E1/2SE1/4, SW1/4SE1/4;	2
	sec. 10, NW1/4NW1/4;	2
	sec. 18, SE1/4NE1/4, E1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	2
	sec. 18, Lot 4;	2
T. 22 N., R. 83 W.,	sec. 24, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	2
	sec. 26, N1/2NE1/4, E1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4;	2
	sec. 34, N1/2NW1/4, SW1/4NW1/4;	2
T. 23 N., R. 81 W.,	sec. 4, SW1/4NW1/4, NW1/4SW1/4;	2
	sec. 4, Lots 3, 4;	2
	sec. 8, W1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	2
	sec. 18, E1/2NE1/4, SW1/4NE1/4, SE1/4SW1/4, W1/2SE1/4;	2
T. 23 N., R. 82 W.,	sec. 24, E1/2SE1/4, SW1/4SE1/4;	2
	sec. 26, SE1/4SE1/4;	2
	sec. 36, NW1/4NW1/4;	2
T. 24 N., R. 80 W.,	sec. 32, S1/2S1/2;	2
T. 24 N., R. 81 W.,	sec. 34, S1/2S1/2;	2
T. 19 N., R. 94 W.,	sec. 10, SW1/4SE1/4;	3
	sec. 14, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	3
	sec. 18, S1/2NE1/4, SE1/4NW1/4;	3
	sec. 18, Lots 2, 3;	3

Transmission Line ROW

		Segment
T. 19 N., R. 95 W.,	sec. 14, S1/2SW1/4, SE1/4;	3
	sec. 16, S1/2SE1/4;	3
	sec. 20, N1/2N1/2;	3
T. 19 N., R. 96 W.,	sec. 20, SW1/4, N1/2SE1/4, SW1/4SW1/4;	3
	sec. 22, N1/2S1/2;	3
	sec. 24, S1/2N1/2;	3
T. 19 N., R. 97 W.,	sec. 2, SW1/4NW1/4, W1/2SW1/4, SE1/4SW1/4;	3
	sec. 4, S1/2N1/2;	3
	sec. 14, N1/2NE1/4, SE1/4NE1/4, NE1/4SE1/4;	3
	sec. 24, N1/2NW1/4, SE1/4NW1/4, NE1/4SW1/4;	3
	sec. 24, Lots 3, 4;	3

Off-ROW Access Roads

		Segment
T. 24 N., R. 80 W.,	sec. 2, SE1/4NE1/4, SE1/4NW1/4, SW1/4, NW1/4SE1/4, S1/2SE1/4;	1W
	sec. 2, Lots 1, 2, 3, 4;	1W
	sec. 10, NE1/4, SE1/4NW1/4, N1/2SW1/4, E1/2SE1/4;	1W
	sec. 14, W1/2NW1/4;	1W
	sec. 22, N1/2NE1/4, SE1/4NE1/4, E1/2NW1/4, SW1/4, E1/2SE1/4;	1W
	sec. 26, W1/2NW1/4, E1/2SW1/4, W1/2SE1/4;	1W
	sec. 28, S1/2SW1/4;	1W
T. 25 N., R. 79 W.,	sec. 2, SW1/4NE1/4, S1/2NW1/4, SW1/4;	1W
	sec. 2, Lots 1, 2, 3;	1W
	sec. 4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	1W
	sec. 4, Lot 4;	1W
	sec. 6, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4;	1W
	sec. 6, Lots 1, 2, 6, 7;	1W
	sec. 10, NE1/4, E1/2W1/2, NW1/4NW1/4, N1/2SE1/4, SW1/4SE1/4;	1W
T. 25 N., R. 80 W.,	sec. 12, E1/2NE1/4, N1/2SE1/4, SW1/4SE1/4;	1W
T. 26 N., R. 78 W.,	sec. 6, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4;	1W
	sec. 6, Lots 2, 3, 7;	1W
	sec. 7, E1/2W1/2;	1W
	sec. 7, Lots 1, 3, 4;	1W
T. 26 N., R. 79 W.,	sec. 1, E1/2SE1/4;	1W
	sec. 12, W1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, SW1/4SW1/4,;	1W
	sec. 13, SW1/4NW1/4, N1/2S1/2;	1W
	sec. 14, E1/2SE1/4;	1W
	sec. 18, SE1/4SE1/4;	1W

Off-ROW Access Roads

		Segment
	sec. 19, E1/2E1/2;	1W
	sec. 23, NE1/4NE1/4, E1/2SE1/4;	1W
	sec. 24, S1/2SE1/4;	1W
	sec. 25, NW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4;	1W
	sec. 30, E1/2E1/2;	1W
	sec. 31, E1/2SE1/4;	1W
	sec. 32, S1/2NE1/4, E1/2NW1/4, E1/2SE1/4;	1W
	sec. 33, NW1/4NW1/4, W1/2SW1/4;	1W
	sec. 35, SE1/4;	1W
T. 27 N., R. 78 W.,	sec. 6, SW1/4NE1/4, SE1/4NW1/4, SE1/4SW1/4, NW1/4SE1/4;	1W
	sec. 6, Lots 2, 3, 4, 5;	1W
	sec. 7, NW1/4NE1/4, E1/2NW1/4, E1/2SW1/4, SW1/4SE1/4;	1W
	sec. 7, Lots 1, 2, 4;	1W
	sec. 18, SW1/4NE1/4, E1/2NW1/4, SE1/4SW1/4, W1/2SE1/4;	1W
	sec. 19, W1/2E1/2, E1/2W1/2;	1W
	sec. 19, Lot 2;	1W
	sec. 30, W1/2E1/2, E1/2SW1/4;	1W
	sec. 30, Lot 4;	1W
	sec. 31, W1/2E1/2, SE1/4NW1/4, E1/2SW1/4;	1W
T. 28 N., R. 78 W.,	sec. 5, SW1/4, W1/2SE1/4;	1W
	sec. 5, Lots 5, 9, 10, 11, 12;	1W
	sec. 6, Lot 4;	1W
	sec. 7, NE1/4NE1/4, E1/2SE1/4, SW1/4SE1/4;	1W
	sec. 8, NW1/4, W1/2SW1/4;	1W
	sec. 18, E1/2NE1/4, SW1/4NE1/4, SE1/4SW1/4, W1/2SE1/4;	1W
	sec. 18, Lots 2, 3, 4, 6;	1W
	sec. 19, E1/2SW1/4;	1W
	sec. 19, Lots 1, 2, 3, 4, 5, 6;	1W
	sec. 30, E1/2NW1/4, NE1/4SW1/4;	1W
	sec. 30, Lots 1, 2, 7, 8;	1W
	sec. 31, Lots 7, 8, 9, 10, 14, 15, 16, 18, 19;	1W
T. 28 N., R. 79 W.,	sec. 1, S1/2NE1/4;	1W
	sec. 1, Lots 1, 6;	1W
	sec. 2, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4;	1W
	sec. 2, Lot 6;	1W
	sec. 3, E1/2SE1/4;	1W
	sec. 10, E1/2E1/2;	1W
	sec. 15, E1/2NE1/4, N1/2SE1/4, SW1/4SE1/4;	1W
	sec. 22, NW1/4NE1/4, S1/2NE1/4;	1W

Off-ROW Access Roads

		Segment
	sec. 25, W1/2E1/2, SE1/4SE1/4;	1W
T. 19 N., R. 92 W.,	sec. 2, S1/2NW1/4;	2
	sec. 2, Lots 2, 3;	2
	sec. 4, SW1/4NW1/4;	2
	sec. 4, Lots 1, 2, 3, 4;	2
	sec. 6, NE1/4SE1/4, S1/2SE1/4;	2
	sec. 8, NW1/4NW1/4, S1/2SW1/4;	2
	sec. 16, N1/2NW1/4;	2
T. 19 N., R. 93 W.,	sec. 2, SW1/4, NW1/4SE1/4, S1/2SE1/4;	2
	sec. 4, NE1/4SW1/4, S1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	2
	sec. 6, E1/2SW1/4, S1/2SE1/4;	2
	sec. 6, Lots 5, 6;	2
	sec. 8, N1/2NW1/4, NW1/4SW1/4, E1/2SW1/4;	2
	sec. 10, NE1/4NE1/4, E1/2SE1/4;	2
	sec. 12, NE1/4NE1/4, S1/2NE1/4, E1/2W1/2, NW1/4NW1/4, N1/2SE1/4;	2
	sec. 16, E1/2NW1/4, N1/2SW1/4, W1/2SE1/4, SE1/4SE1/4;	2
	sec. 18, W1/2NE1/4, E1/2NW1/4, NE1/4SW1/4;	2
	sec. 18, Lots 1, 3;	2
T. 20 N., R. 88 W.,	sec. 2, Lots 3, 4;	2
	sec. 4, Lots 1, 3, 4;	2
	sec. 6, SE1/4;	2
	sec. 6, Lots 1, 2;	2
	sec. 8, NW1/4NW1/4;	2
T. 20 N., R. 89 W.,	sec. 2, S1/2SE1/4;	2
	sec. 8, S1/2SW1/4, SE1/4;	2
	sec. 10, N1/2N1/2, SW1/4NW1/4;	2
	sec. 14, W1/2W1/2, SE1/4SW1/4;	2
	sec. 16, NE1/4NE1/4;	2
	sec. 18, E1/2NE1/4, SW1/4NE1/4, NW1/4SE1/4;	2
	sec. 18, Lots 3, 4;	2
	sec. 22, NE1/4NE1/4;	2
	sec. 30, W1/2NE1/4, N1/2SE1/4, SE1/4SE1/4;	2
	sec. 32, NW1/4NW1/4, S1/2NW1/4, NE1/4SW1/4, NW1/4SE1/4;	2
T. 20 N., R. 90 W.,	sec. 2, W1/2SW1/4;	2
	sec. 2, Lots 7, 8;	2
	sec. 8, NW1/4NW1/4;	2
	sec. 10, NE1/4NE1/4, S1/2NE1/4, W1/2SE1/4;	2
	sec. 18, Lots 2, 3, 4;	2
	sec. 20, S1/2NW1/4;	2

Off-ROW Access Roads

		Segment
T. 20 N., R. 91 W.,	sec. 12, SE1/4SE1/4;	2
	sec. 24, NW1/4NW1/4, SW1/4SW1/4, NE1/4SE1/4;	2
	sec. 26, NE1/4NW1/4;	2
	sec. 28, NW1/4SW1/4;	2
	sec. 30, NE1/4NW1/4, SE1/4SE1/4;	2
	sec. 30, Lots 1, 2;	2
T. 20 N., R. 92 W.,	sec. 22, SE1/4SE1/4;	2
	sec. 24, E1/2NE1/4, SW1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;	2
	sec. 26, N1/2N1/2;	2
	sec. 34, SE1/4NE1/4, S1/2S1/2, NE1/4SE1/4;	2
T. 21 N., R. 83 W.,	sec. 4, SW1/4NW1/4, W1/2SW1/4, SE1/4SW1/4;	2
	sec. 4, Lots 3, 4;	2
	sec. 8, SW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, N1/2S1/2, SW1/4SW1/4, SE1/4SE1/4;	2
	sec. 30, NW1/4NE1/4, NE1/4NW1/4;	2
T. 21 N., R. 84 W.,	sec. 24, SE1/4SE1/4;	2
	sec. 25, N1/2NE1/4;	2
	sec. 26, SE1/4NE1/4, NW1/4SW1/4, SE1/4SW1/4, S1/2SE1/4;	2
	sec. 30, SE1/4SW1/4;	2
	sec. 32, NW1/4NE1/4, NW1/4NW1/4;	2
	sec. 32, Lot 5;	2
	sec. 34, NW1/4NW1/4;	2
T. 21 N., R. 85 W.,	sec. 32, SW1/4NE1/4, W1/2NW1/4, SE1/4NW1/4, NW1/4SE1/4;	2
	sec. 32, Lot 3;	2
	sec. 36, NE1/4NE1/4, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4;	2
T. 21 N., R. 86 W.,	sec. 32, S1/2N1/2;	2
	sec. 34, SW1/4NE1/4, S1/2NW1/4;	2
T. 21 N., R. 87 W.,	sec. 30, NE1/4NW1/4;	2
	sec. 30, Lots 2, 3;	2
	sec. 32, SW1/4NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	2
	sec. 34, N1/2NE1/4, SE1/4NE1/4, NW1/4, N1/2SW1/4;	2
T. 21 N., R. 88 W.,	sec. 18, SE1/4SE1/4;	2
	sec. 20, W1/2NW1/4;	2
	sec. 30, E1/2NW1/4;	2
	sec. 30, Lots 1, 2, 3;	2
	sec. 34, S1/2SW1/4, SW1/4SE1/4;	2
	sec. 36, NW1/4NE1/4, W1/2W1/2, SE1/4NW1/4, SE1/4SW1/4, S1/2SE1/4;	2

Off-ROW Access Roads

		Segment
T. 21 N., R. 89 W.,	sec. 32, NW1/4NW1/4;	2
	sec. 36, N1/2NE1/4, SW1/4NE1/4, NE1/4SW1/4, S1/2SW1/4, NW1/4SE1/4;	2
T. 22 N., R. 82 W.,	sec. 2, SW1/4NW1/4;	2
	sec. 2, Lots 2, 3, 4;	2
	sec. 4, E1/2SE1/4, SW1/4SE1/4;	2
	sec. 8, S1/2;	2
	sec. 10, SW1/4SW1/4;	2
	sec. 14, SW1/4SW1/4;	2
	sec. 18, NE1/4NE1/4, S1/2NE1/4, SE1/4SW1/4, SE1/4;	2
	sec. 18, Lot 4;	2
	sec. 20, N1/2N1/2;	2
	sec. 30, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	2
	sec. 30, Lot 2;	2
	sec. 32, NE1/4NW1/4;	2
T. 22 N., R. 83 W.,	sec. 24, NE1/4, SE1/4NW1/4, N1/2SW1/4, SW1/4SW1/4;	2
	sec. 26, N1/2NE1/4, E1/2NW1/4, SW1/4NW1/4;	2
T. 23 N., R. 80 W.,	sec. 4, S1/2NW1/4, W1/2SW1/4;	2
	sec. 6, SE1/4NE1/4, N1/2SE1/4, SW1/4SE1/4;	2
	sec. 8, W1/2E1/2, SW1/4NW1/4, N1/2SW1/4;	2
	sec. 10, N1/2NE1/4;	2
	sec. 12, NW1/4NW1/4;	2
	sec. 22, NW1/4SW1/4, S1/2SW1/4;	2
	sec. 26, SW1/4SW1/4;	2
	sec. 34, E1/2SE1/4;	2
T. 23 N., R. 81 W.,	sec. 2, SW1/4NE1/4, N1/2SE1/4, SE1/4SE1/4;	2
	sec. 2, Lot 2;	2
	sec. 4, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4, N1/2S1/2;	2
	sec. 4, Lots 1, 2, 3, 4;	2
	sec. 8, W1/2E1/2, SE1/4NE1/4, SW1/4;	2
	sec. 12, N1/2NE1/4;	2
	sec. 18, E1/2NE1/4, SW1/4NE1/4, SE1/4SW1/4, SE1/4;	2
	sec. 20, S1/2S1/2;	2
	sec. 30, NE1/4NW1/4;	2
	sec. 30, Lots 1, 2, 3, 4;	2
T. 23 N., R. 82 W.,	sec. 24, S1/2SE1/4;	2
	sec. 36, NE1/4, E1/2NW1/4, N1/2SW1/4;	2
T. 24 N., R. 80 W.,	sec. 28, S1/2SW1/4;	2
	sec. 32, SW1/4NW1/4, SW1/4, E1/2SE1/4, SW1/4SE1/4;	2
T. 24 N., R. 81 W.,	sec. 34, S1/2NE1/4, SE1/4NW1/4, SE1/4SW1/4, SE1/4;	2

Off-ROW Access Roads

		Segment
T. 19 N., R. 94 W.,	sec. 2, Lot 4;	3
	sec. 10, NW1/4NE1/4, E1/2NW1/4, SW1/4NW1/4, W1/2SW1/4, SE1/4SE1/4;	3
	sec. 14, S1/2NE1/4, , N1/2SW1/4, NW1/4SE1/4;	3
	sec. 18, S1/2NE1/4, E1/2NW1/4;	3
	sec. 18, Lot 1;	3
T. 19 N., R. 95 W.,	sec. 4, SW1/4SW1/4;	3
	sec. 10, S1/2N1/2;	3
	sec. 12, SW1/4SW1/4;	3
	sec. 16, W1/2NW1/4;	3
	sec. 20, N1/2NE1/4, NW1/4;	3
T. 19 N., R. 96 W.,	sec. 18, NE1/4, SE1/4NW1/4, NE1/4SW1/4, S1/2SE1/4;	3
	sec. 18, Lots 3, 4;	3
	sec. 20, NE1/4NW1/4, W1/2W1/2;	3
	sec. 22, NE1/4SW1/4, SE1/4;	3
	sec. 24, SE1/4NE1/4, SE1/4NW1/4, N1/2S1/2;	3
	sec. 28, N1/2N1/2;	3
	sec. 30, E1/2NE1/4;	3
T. 19 N., R. 97 W.,	sec. 2, SW1/4NW1/4, W1/2SW1/4, SE1/4SW1/4;	3
	sec. 4, SW1/4NE1/4;	3
	sec. 10, E1/2NE1/4;	3
	sec. 14, NE1/4, N1/2NW1/4, SE1/4NW1/4;	3
	sec. 24, NE1/4NW1/4;	3
	sec. 24, Lots 2, 3, 4;	3

Permanent Off-ROW Facilities

		Segment
T. 28 N., R. 78 W.,	sec. 31, Lots 16, 17, 18;	1W(a), 1W(c)
T. 19 N., R. 92 W.,	sec. 6, S1/2NE1/4, SE1/4NW1/4;	2
	sec. 6, Lots 1, 5;	2
T. 19 N., R. 93 W.,	sec. 2, SE1/4SE1/4;	2
	sec. 12, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, NW1/4SE1/4;	2
T. 20 N., R. 92 W.,	sec. 32, SE1/4SE1/4;	2
	sec. 34, SE1/4NE1/4, N1/2S1/2, SE1/4SW1/4, SW1/4SE1/4;	2

Temporary Construction Sites

		Segment
T. 24 N., R. 80 W.,	sec. 22, NE1/4NW1/4, SW1/4SW1/4;	1W
	sec. 26, E1/2SW1/4, W1/2SE1/4;	1W
	sec. 34, NE1/4NE1/4;	1W

Temporary Construction Sites

		Segment
T. 26 N., R. 78 W.,	sec. 6, Lots 2, 3;	1W
	sec. 30, SW1/4SE1/4;	1W
T. 26 N., R. 79 W.,	sec. 35, N1/2SE1/4, SW1/4SE1/4;	1W
T. 27 N., R. 78 W.,	sec. 6, Lot 3;	1W
	sec. 31, SE1/4SW1/4;	1W
T. 28 N., R. 78 W.,	sec. 19, Lot 4;	1W
	sec. 31, Lots 15, 18;	1W
T. 28 N., R. 79 W.,	sec. 24, SE1/4SE1/4;	1W
T. 19 N., R. 93 W.,	sec. 12, SE1/4SW1/4;	2
T. 21 N., R. 84 W.,	sec. 24, SE1/4SE1/4;	2
	sec. 25, NE1/4NE1/4;	2
	sec. 26, SW1/4SE1/4;	2
T. 21 N., R. 85 W.,	sec. 32, Lots 3, 7;	2
T. 21 N., R. 87 W.,	sec. 32, SE1/4NW1/4, SW1/4SW1/4;	2
	sec. 34, SE1/4NW1/4;	2
T. 21 N., R. 88 W.,	sec. 34, SW1/4SW1/4;	2
T. 22 N., R. 83 W.,	sec. 26, W1/2NE1/4, E1/2NW1/4;	2
	sec. 34, NW1/4NW1/4;	2
T. 24 N., R. 80 W.,	sec. 28, SW1/4SW1/4;	2
T. 19 N., R. 94 W.,	sec. 2, Lot 4;	3
	sec. 10, S1/2SE1/4;	3
	sec. 18, SW1/4NE1/4;	3
T. 19 N., R. 97 W.,	sec. 2, SW1/4NW1/4;	3
	sec. 24, Lot 4;	3

Rock Springs Field Office

Sixth Principal Meridian

Transmission Line ROW

		Segment
T. 19 N., R. 97 W.,	sec. 6, S1/2N1/2, N1/2SW1/4;	3
T. 19 N., R. 98 W.,	sec. 2, S1/2NE1/4, SE1/4NW1/4, N1/2S1/2;	3
	sec. 4, N1/2S1/2;	3
	sec. 6, NE1/4SW1/4, N1/2SE1/4;	3
	sec. 6, Lot 13;	3
T. 19 N., R. 99 W.,	sec. 2, N1/2S1/2;	3
	sec. 4, N1/2S1/2;	3
	sec. 6, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	3
	sec. 6, Lots 12, 13;	3
T. 19 N., R. 100 W.,	sec. 2, S1/2N1/2;	3
	sec. 4, S1/2NE1/4;	3
	sec. 4, Lots 6, 7, 8;	3
T. 20 N., R. 100 W.,	sec. 30, E1/2W1/2;	3
	sec. 32, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, W1/2SE1/4, SE1/4SE1/4;	3
T. 20 N., R. 101 W.,	sec. 2, N1/2SW1/4, SE1/4SW1/4;	3
	sec. 2, Lot 4;	3
	sec. 4, N1/2SE1/4;	3
	sec. 4, Lot 2;	3
	sec. 12, W1/2SW1/4, SE1/4SW1/4;	3
	sec. 24, N1/2NE1/4, SE1/4NE1/4;	3
T. 21 N., R. 101 W.,	sec. 36, S1/2SW1/4, NE1/4SE1/4, SW1/4SE1/4;	3
T. 20 N., R. 101 W.,	sec. 8, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4;	4
	sec. 10, S1/2S1/2;	4
	sec. 14, NE1/4NE1/4;	4
T. 20 N., R. 102 W.,	sec. 8, N1/2S1/2;	4
	sec. 10, N1/2S1/2;	4
	sec. 12, S1/2N1/2, N1/2SW1/4;	4
T. 20 N., R. 103 W.,	sec. 8, S1/2N1/2;	4
	sec. 10, S1/2N1/2;	4
	sec. 12, SW1/4NE1/4, S1/2NW1/4, N1/2S1/2;	4
T. 20 N., R. 104 W.,	sec. 10, N1/2;	4
	sec. 12, S1/2N1/2;	4
T. 20 N., R. 105 W.,	sec. 4, S1/2SW1/4;	4
	sec. 6, SE1/4SW1/4, S1/2SE1/4;	4
	sec. 6, Lot 12;	4
	sec. 8, N1/2N1/2;	4
	sec. 10, N1/2N1/2;	4
	sec. 12, Lots 1, 2, 3, 4;	4

Transmission Line ROW

		Segment
T. 20 N., R. 106 W.,	sec. 2, S1/2S1/2;	4
	sec. 4, S1/2;	4
	sec. 6, NE1/4SW1/4, N1/2SE1/4;	4
	sec. 6, Lot 11;	4
T. 20 N., R. 109 W.,	sec. 2, Lots 5, 6, 7, 8, 9, 10;	4
	sec. 10, N1/2NE1/4, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4, SW1/4SW1/4;	4
T. 21 N., R. 106 W.,	sec. 32, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	4
T. 21 N., R. 107 W.,	sec. 26, S1/2S1/2;	4
	sec. 28, N1/2S1/2;	4
	sec. 30, S1/2NE1/4, SE1/4NW1/4;	4
	sec. 30, Lots 6, 7;	4
	sec. 36, N1/2N1/2, SE1/4NE1/4;	4
T. 21 N., R. 108 W.,	sec. 26, N1/2S1/2, SW1/4SW1/4;	4
	sec. 32, S1/2SE1/4;	4
	sec. 34, NW1/4NE1/4, N1/2NW1/4, SW1/4NW1/4;	4
T. 21 N., R. 110 W.,	sec. 28, S1/2N1/2, N1/2SE1/4;	4
	sec. 30, N1/2NE1/4, NE1/4NW1/4;	4
	sec. 30, Lot 1;	4

Off-ROW Access Roads

		Segment
T. 19 N., R. 98 W.,	sec. 4, S1/2N1/2, N1/2SE1/4, SW1/4SE1/4;	3
	sec. 6, S1/2NE1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	3
	sec. 6, 9, 10, 11, 12, 13, 14;	3
	sec. 8, S1/2N1/2;	3
	sec. 10, NW1/4NE1/4, S1/2N1/2, NE1/4SW1/4, N1/2SE1/4;	3
	sec. 12, SE1/4NE1/4, SW1/4NW1/4, N1/2SE1/4, N1/2SE1/4;	3
T. 19 N., R. 99 W.,	sec. 2, SE1/4NE1/4, E1/2SE1/4;	3
	sec. 2, Lots 5, 6, 8;	3
	sec. 4, S1/2N1/2, N1/2S1/2;	3
	sec. 6, SE1/4NW1/4, NE1/4SW1/4, N1/2SE1/4;	3
	sec. 6, Lots 12, 13;	3
	sec. 12, N1/2N1/2;	3
T. 19 N., R. 100 W.,	sec. 2, SE1/4NE1/4, SW1/4NW1/4;	3
	sec. 2, Lot 8;	3
	sec. 4, S1/2N1/2, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	3
	sec. 4, Lots 5, 6, 7, 8;	3

Off-ROW Access Roads

		Segment
T. 20 N., R. 100 W.,	sec. 18, SE1/4SW1/4;	3
	sec. 18, Lot 8;	3
	sec. 30, E1/2SW1/4, W1/2SE1/4, SE1/4SE1/4;	3
	sec. 32, NW1/4SW1/4, S1/2S1/2;	3
	sec. 34, N1/2SW1/4, SW1/4SW1/4, W1/2SE1/4;	3
T. 20 N., R. 101 W.,	sec. 2, NW1/4SW1/4, SE1/4SW1/4;	3
	sec. 2, Lot 4;	3
	sec. 4, SE1/4;	3
	sec. 4, Lots 1, 2;	3
	sec. 12, SW1/4;	3
	sec. 14, SE1/4NE1/4;	3
	sec. 24, SE1/4NE1/4;	3
	sec. 36, NE1/4NE1/4;	3
T. 21 N., R. 101 W.,	sec. 36, S1/2SW1/4, E1/2SE1/4;	3
T. 19 N., R. 105 W.,	sec. 2, NE1/4SW1/4;	4
T. 20 N., R. 101 W.,	sec. 8, N1/2SW1/4, SE1/4SW1/4;	4
	sec. 10, S1/2NE1/4, NE1/4SW1/4, S1/2SW1/4, SE1/4;	4
T. 20 N., R. 102 W.,	sec. 2, S1/2S1/2;	4
	sec. 4, N1/2S1/2, SE1/4SE1/4;	4
	sec. 6, NE1/4SW1/4, N1/2SE1/4;	4
	sec. 6, Lots 1, 2, 3, 4;	4
	sec. 8, SW1/4NW1/4, NW1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	4
	sec. 10, S1/2NW1/4, SW1/4, N1/2SE1/4, SE1/4SE1/4;	4
	sec. 12, W1/2NE1/4, SE1/4NE1/4, E1/2NW1/4, N1/2S1/2;	4
	sec. 14, W1/2NE1/4, E1/2W1/2, NW1/4NW1/4;	4
	sec. 22, NE1/4NE1/4, S1/2S1/2;	4
	sec. 28, N1/2NE1/4;	4
	sec. 32, E1/2NE1/4;	4
T. 20 N., R. 103 W.,	sec. 2, NW1/4SW1/4;	4
	sec. 2, Lots 3, 4;	4
	sec. 4, S1/2S1/2, NE1/4SE1/4;	4
	sec. 6, E1/2SW1/4, S1/2SE1/4;	4
	sec. 6, Lots 4, 5, 6;	4
	sec. 8, W1/2NW1/4;	4
	sec. 10, NW1/4NW1/4, S1/2N1/2;	4
	sec. 12, S1/2NE1/4, SE1/4NW1/4, N1/2SW1/4, NE1/4SE1/4;	4
T. 20 N., R. 104 W.,	sec. 2, NE1/4SE1/4, S1/2SE1/4;	4
	sec. 2, Lot 5;	4
	sec. 10, N1/2N1/2;	4

Off-ROW Access Roads

		Segment
	sec. 12, E1/2E1/2;	4
	sec. 14, E1/2W1/2;	4
	sec. 24, NW1/4NW1/4;	4
T. 20 N., R. 105 W.,	sec. 6, SE1/4SW1/4;	4
	sec. 6, Lots 12, 15, 16;	4
	sec. 8, E1/2NE1/4, NE1/4SE1/4;	4
	sec. 10, NW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4;	4
	sec. 12, Lots 1, 2, 3, 4, 6, 7, 8, 11, 13, 14;	4
	sec. 14, E1/2SE1/4;	4
T. 20 N., R. 106 W.,	sec. 2, S1/2SW1/4, N1/2SE1/4, SW1/4SE1/4;	4
	sec. 4, N1/2S1/2;	4
	sec. 6, NE1/4SW1/4, N1/2SE1/4;	4
	sec. 6, Lots 9, 10;	4
	sec. 12, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4;	4
T. 20 N., R. 109 W.,	sec. 2, Lots 5, 6, 7, 8;	4
	sec. 10, NW1/4NE1/4, NW1/4NW1/4, NE1/4SW1/4;	4
T. 21 N., R. 102 W.,	sec. 32, SW1/4NW1/4, N1/2SW1/4, NW1/4SE1/4, S1/2SE1/4;	4
	sec. 32, Lots 2, 3, 4;	4
T. 21 N., R. 103 W.,	sec. 32, N1/2SE1/4, SW1/4SE1/4;	4
T. 21 N., R. 106 W.,	sec. 30, Lot 4;	4
	sec. 32, NW1/4SW1/4, SE1/4SW1/4, SE1/4SE1/4;	4
	sec. 34, SW1/4SW1/4;	4
T. 21 N., R. 107 W.,	sec. 26, S1/2S1/2;	4
	sec. 28, N1/2S1/2;	4
	sec. 30, SE1/4NE1/4, SE1/4NW1/4;	4
	sec. 30, Lot 6;	4
	sec. 36, N1/2N1/2, SE1/4NE1/4, E1/2SE1/4;	4
T. 21 N., R. 108 W.,	sec. 26, NE1/4SW1/4;	4
	sec. 32, SE1/4SE1/4;	4
	sec. 34, W1/2NW1/4;	4
T. 21 N., R. 110 W.,	sec. 28, E1/2NE1/4, SW1/4NE1/4, SW1/4NW1/4;	4
	sec. 30, NE1/4NE1/4;	4
	sec. 30, Lot 1;	4

Permanent Off-ROW Facilities

Segment

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

		Segment
T. 21 N., R. 101 W.,	sec. 36, NE1/4SE1/4, SW1/4SW1/4;	3
T. 20 N., R. 101 W.,	sec. 4, NE1/4SW1/4, N1/2SE1/4, SW1/4SE1/4;	3
T. 20 N., R. 102 W.,	sec. 8, SE1/4SE1/4;	4
	sec. 28, SE1/4NW1/4;	4
T. 20 N., R. 109 W.,	sec. 2, Lot 7;	4
	sec. 10, NW1/4NE1/4;	4

Shoshone Field Office

Boise Meridian

Transmission Line ROW

		Segment
T. 4 S., R. 10 E.,	sec. 35, S1/2S1/2;	8
T. 4 S., R. 11 E.,	sec. 31, Lots 4, 5, 6, 7;	8
	sec. 32, Lots 1, 2, 3, 4;	8
T. 5 S., R. 11 E.,	sec. 1, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, S1/2SE1/4;	8
	sec. 2, S1/2NE1/4;	8
	sec. 2, Lots 1, 2, 3, 4;	8
	sec. 3, Lots 1, 2, 3, 4;	8
	sec. 4, Lots 1, 2, 3, 4;	8
	sec. 5, Lots 1, 2, 3, 4;	8
	sec. 6, Lot 1;	8
T. 5 S., R. 12 E.,	sec. 7, E1/2SW1/4;	8
	sec. 7, Lots 2, 3, 4;	8
	sec. 17, S1/2SW1/4;	8
	sec. 18, NW1/4NE1/4, S1/2NE1/4, NE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	8
	sec. 20, NE1/4, N1/2NW1/4;	8
	sec. 23, S1/2NE1/4, SE1/4NW1/4;	8
	sec. 24, S1/2N1/2;	8
T. 5 S., R. 13 E.,	sec. 19, SE1/4NW1/4, NE1/4SE1/4;	8
	sec. 19, Lot 2;	8
	sec. 28, NW1/4SW1/4, S1/2SW1/4;	8
	sec. 29, E1/2SE1/4;	8
	sec. 33, NW1/4NE1/4, S1/2NE1/4, N1/2NW1/4, NE1/4SE1/4;	8
	sec. 34, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	8
T. 6 S., R. 13 E.,	sec. 2, SW1/4NW1/4, N1/2SW1/4;	8
	sec. 3, SE1/4NE1/4;	8
	sec. 3, Lots 1, 2, 3;	8
T. 6 S., R. 15 E.,	sec. 26, SW1/4SW1/4;	8
	sec. 27, S1/2S1/2;	8
	sec. 28, N1/2SW1/4, SE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
	sec. 29, N1/2S1/2;	8
	sec. 34, NE1/4NE1/4;	8
	sec. 35, N1/2N1/2;	8
T. 6 S., R. 16 E.,	sec. 31, S1/2NE1/4, SE1/4NW1/4, N1/2SE1/4;	8
	sec. 31, Lot 2;	8
	sec. 32, N1/2S1/2, SE1/4SE1/4;	8
	sec. 33, NW1/4SW1/4, S1/2S1/2;	8

Transmission Line ROW

		Segment
	sec. 34, S1/2SW1/4, SW1/4SE1/4;	8
T. 7 S., R. 16 E.,	sec. 1, NE1/4SE1/4;	8
	sec. 1, Lots 1, 2, 3, 4;	8
	sec. 2, Lots 1, 2, 3;	8
T. 7 S., R. 17 E.,	sec. 6, NW1/4SE1/4;	8
	sec. 6, Lots 3, 4;	8
	sec. 10, N1/2NE1/4, NE1/4NW1/4;	8
	sec. 11, N1/2NW1/4;	8
	sec. 12, S1/2NE1/4, N1/2SE1/4;	10
T. 7 S., R. 18 E.,	sec. 7, E1/2SW1/4, SW1/4SE1/4;	10
	sec. 7, Lots 2, 3;	10
	sec. 17, W1/2SW1/4;	10
	sec. 18, NW1/4NE1/4;	10
	sec. 20, SW1/4NE1/4, E1/2NW1/4, SE1/4;	10
	sec. 28, NW1/4NW1/4, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, SW1/4SE1/4;	10
	sec. 29, NE1/4NE1/4;	10
	sec. 33, NE1/4;	10
	sec. 34, NW1/4SW1/4, S1/2SW1/4;	10
T. 8 S., R. 18 E.,	sec. 2, W1/2SW1/4;	10
	sec. 3, SW1/4NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4;	10
	sec. 3, Lot 4;	10
	sec. 11, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, SE1/4SE1/4;	10
	sec. 12, SW1/4SW1/4;	10
	sec. 13, SW1/4NE1/4, N1/2NW1/4, SE1/4NW1/4, SE1/4;	10
	sec. 24, NE1/4NE1/4;	10
T. 8 S., R. 19 E.,	sec. 18, Lot 4;	10
	sec. 19, Lots 1, 2, 3, 4;	10
	sec. 30, E1/2W1/2;	10
	sec. 30, Lots 1, 2, 3, 4;	10
	sec. 31, NE1/4NW1/4;	10
T. 9 S., R. 18 E.,	sec. 12, E1/2SE1/4;	10
	sec. 13, E1/2NE1/4, NE1/4SE1/4;	10
T. 9 S., R. 19 E.,	sec. 6, E1/2SW1/4, NW1/4SE1/4;	10
	sec. 6, Lot 7;	10
	sec. 7, Lots 1, 2, 3, 4;	10
	sec. 17, S1/2SW1/4;	10
	sec. 18, E1/2SW1/4, NW1/4SE1/4, S1/2SE1/4;	10
	sec. 18, Lots 1, 2, 3;	10
	sec. 20, N1/2N1/2, SE1/4NE1/4;	10

Transmission Line ROW

		Segment
	sec. 21, W1/2NW1/4, NW1/4SW1/4;	10

Off-ROW Access Roads

		Segment
T. 4 S., R. 10 E.,	sec. 35, S1/2S1/2;	8
T. 4 S., R. 11 E.,	sec. 31, Lots 6, 7;	8
	sec. 32, SE1/4NE1/4, N1/2SE1/4;	8
	sec. 32, Lot 2;	8
	sec. 33, SW1/4NW1/4, NW1/4SW1/4, S1/2SW1/4, SW1/4SE1/4;	8
T. 5 S., R. 11 E.,	sec. 1, S1/2NW1/4, N1/2SW1/4;	8
	sec. 1, Lot 4;	8
	sec. 2, SW1/4NE1/4;	8
	sec. 2, Lots 1, 2, 3, 4;	8
	sec. 3, SW1/4NW1/4;	8
	sec. 3, Lots 1, 2, 3, 4;	8
	sec. 4, S1/2N1/2;	8
	sec. 4, Lots 1, 2, 3, 4;	8
	sec. 5, S1/2N1/2, N1/2SE1/4, SW1/4SE1/4;	8
	sec. 5, Lots 1, 2, 3, 4;	8
	sec. 6, Lot 1;	8
	sec. 8, NW1/4NE1/4, NE1/4NW1/4;	8
T. 5 S., R. 12 E.,	sec. 7, SE1/4SW1/4, S1/2SE1/4;	8
	sec. 17, SW1/4SW1/4;	8
	sec. 18, SE1/4SE1/4;	8
	sec. 20, NW1/4NE1/4, N1/2NW1/4;	8
T. 5 S., R. 13 E.,	sec. 29, E1/2SE1/4, SW1/4SE1/4;	8
	sec. 31, NE1/4SE1/4;	8
	sec. 32, W1/2NE1/4, SE1/4NW1/4, N1/2SW1/4;	8
	sec. 33, E1/2SW1/4, SW1/4SW1/4, N1/2SE1/4;	8
T. 6 S., R. 13 E.,	sec. 2, SW1/4NW1/4, NW1/4SW1/4;	8
T. 6 S., R. 15 E.,	sec. 28, SE1/4SW1/4, SE1/4SE1/4;	8
	sec. 35, N1/2NW1/4;	8
T. 6 S., R. 16 E.,	sec. 31, SW1/4NE1/4, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	8
	sec. 31, Lot 4;	8
	sec. 32, S1/2S1/2, NE1/4SE1/4;	8
	sec. 33, SW1/4NE1/4, SE1/4NW1/4, N1/2S1/2, SE1/4SE1/4;	8
	sec. 34, S1/2S1/2;	8
T. 7 S., R. 16 E.,	sec. 1, NE1/4SW1/4, NW1/4SE1/4, S1/2SE1/4;	8
	sec. 1, Lots 3, 4;	8

Off-ROW Access Roads

		Segment
	sec. 4, Lots 3, 4;	8
	sec. 5, Lots 1, 2, 3;	8
	sec. 12, E1/2NE1/4;	8
T. 7 S., R. 17 E.,	sec. 6, Lots 4, 5;	8
T. 7 S., R. 18 E.,	sec. 7, SE1/4SW1/4, SW1/4SE1/4;	10
	sec. 7, Lots 2, 3, 4;	10
	sec. 17, W1/2NW1/4, N1/2S1/2, SW1/4SW1/4, SE1/4SE1/4;	10
	sec. 18, N1/2NE1/4;	10
	sec. 20, NE1/4NW1/4	10
	sec. 21, NW1/4SW1/4;	10
	sec. 33, SE1/4NE1/4;	10
	sec. 34, W1/2SW1/4;	10
T. 8 S., R. 18 E.,	sec. 2, S1/2SW1/4;	10
	sec. 3, SW1/4NW1/4, N1/2S1/2, SE1/4SE1/4;	10
	sec. 3, Lot 4;	10
	sec. 11, W1/2NE1/4, N1/2NW1/4, SE1/4NW1/4, E1/2SE1/4;	10
	sec. 13, SW1/4NE1/4, SE1/4NW1/4, NW1/4SE1/4, S1/2SE1/4;	10
T. 8 S., R. 19 E.,	sec. 19, Lots 1, 2;	10
T. 9 S., R. 19 E.,	sec. 7, Lots 1, 2;	10
	sec. 17, S1/2SW1/4;	10
	sec. 20, NE1/4, E1/2NW1/4, SW1/4NW1/4, NE1/4SW1/4, NW1/4SE1/4;	10
	sec. 21, W1/2NW1/4;	10

Permanent Off-ROW Facilities

		Segment

There are no Aliquots in this Field Office for this grant.

Temporary Construction Sites

		Segment
T. 5 S., R. 11 E.,	sec. 1, SE1/4SE1/4;	8
	sec. 2, Lot 2;	8
	sec. 5, SW1/4NE1/4, SE1/4NW1/4, NW1/4SE1/4;	8
T. 5 S., R. 12 E.,	sec. 17, SW1/4SW1/4;	8
	sec. 18, SE1/4SE1/4;	8
	sec. 19, E1/2NE1/4;	8
	sec. 20, SE1/4NE1/4, NW1/4NW1/4;	8
T. 5 S., R. 13 E.,	sec. 19, SE1/4NW1/4;	8
	sec. 34, W1/2NW1/4;	8

Temporary Construction Sites

		Segment
T. 6 S., R. 13 E.,	sec. 3, N1/2SE1/4;	8
T. 6 S., R. 15 E.,	sec. 27, SW1/4NW1/4, NW1/4SW1/4;	8
T. 6 S., R. 16 E.,	sec. 30, Lot 4;	8
	sec. 3, SE1/4SW1/4, SW1/4SE1/4;	8
	sec. 10, NE1/4NW1/4;	8
T. 7 S., R. 18 E.,	sec. 7, Lots 2, 3;	10
	sec. 17, NE1/4SW1/4;	10
	sec. 20, SW1/4NW1/4, N1/2SW1/4;	10
	sec. 28, W1/2SW1/4;	10
	sec. 29, E1/2SE1/4;	10
	sec. 34, S1/2SW1/4;	10
T. 8 S., R. 18 E.,	sec. 3, SW1/4NW1/4, NE1/4SW1/4, NE1/4SE1/4;	10
	sec. 3, Lot 4;	10
	sec. 13, W1/2NE1/4, E1/2NW1/4;	10
	sec. 24, NE1/4NE1/4;	10
T. 8 S., R. 19 E.,	sec. 19, Lot 1;	10
	sec. 30, SE1/4SE1/4;	10
	sec. 31, N1/2NE1/4;	10
T. 9 S., R. 18 E.,	sec. 13, SE1/4NE1/4, NE1/4SE1/4;	10
T. 9 S., R. 19 E.,	sec. 6, NE1/4SW1/4, NW1/4SE1/4;	10
	sec. 6, Lot 7;	10
	sec. 7, Lot 1;	10
	sec. 18, Lot 3;	10
	sec. 20, E1/2NE1/4;	10
	sec. 21, W1/2NW1/4;	10

APPENDIX Y
OTHER INFORMATION

This Appendix will be compiled as mitigation plans are finalized and other permits and approvals are issued. This Appendix will include documents such as the Biological Opinion, the Migratory Bird Treaty Act (MBTA) Forested Habitat Compensatory Mitigation Plan, and the U.S. Army Corps of Engineers (USACE) Section 404 Nationwide permits.

APPENDIX Z
ENVIRONMENTAL PROTECTION MEASURES

Appendix Z

Environmental Protection Measures

Gateway West Transmission Line Project

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August 15, 2013

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1.0 INTRODUCTION

PacifiCorp, doing business as Rocky Mountain Power, and Idaho Power Company (Companies) are proposing to construct and operate the Gateway West Transmission Line Project (Gateway West) consisting of approximately 1,000 miles of new 230-kilovolt (kV), 345-kV, and 500-kV alternating current (AC) electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line is needed to supplement existing transmission lines in order to relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid, allowing for the delivery of up to 1,500 megawatts of additional energy for the Companies' larger service areas and to other interconnected systems.

Gateway West, one portion of the Energy Gateway Project, includes ground-disturbing activities associated with the construction, operation and maintenance of aboveground, single-circuit transmission lines involving towers, access roads, multi-purpose areas, fly yards, pulling sites, substations, communication sites, and electrical supply distribution lines. Gateway West crosses private land and public lands administered by the Bureau of Land Management (BLM), U.S. Department of Agriculture Forest Service (USFS), Bureau of Reclamation (BOR), and the states of Idaho and Wyoming. Gateway West will be constructed in the following two segments:

- Segment D comprises approximately 488 miles of transmission line, two new substations, expansion of three substations, and modifications at three other substations beginning at the Windstar Substation and ending at the Populus Substation in Downey, Idaho.
- Segment E comprises between approximately 502 and 542 miles of transmission line, one new substation, expansion of two substations, and modifications at two other substations beginning at the Populus Substation and ending at the Hemingway Substation.

"Project" in this Plan of Development (POD), applies to Segments 1 through 4 (Segment D) of Gateway West. Appendix A, Figures A-1 through A-14, shows the overall location of both Segments D and E. Detailed maps for Segment D are contained in Volume II. This POD, which includes Appendix Z, was prepared for Segment D of the Project because it will be constructed first; this POD will be revised and prepared for Segment E to support issuance of Notices to Proceed to construction of that segment.

This document presents the environmental protection measures (EPMs) to be implemented for the avoidance and minimization of impacts to environmental resources related to Project design, construction, operation, and maintenance activities.

2.0 PURPOSE

The objectives of this document are to recognize the substantial effort already invested by the Companies in avoiding and minimizing impacts and to present a comprehensive list of EPMs that does the following:

- Meets the intent of the current BLM, BOR and USFS management guidance for federal lands;
- Applies EPMs from a practical perspective based on differences in land ownership and management patterns of the Project; and
- Balances cost, practicality, and feasibility of Project implementation with avoiding or minimizing environmental impacts.

3.0 RELATIONSHIP TO ENVIRONMENTAL PROTECTION PLANS

Section 5.0 and Table 5-1 of the POD describe the plans the Companies will use to ensure environmental protection during construction, operation, and maintenance. Each plan includes resource-specific EPMs. These measures have been developed by the Companies in consultation with the land-managing agencies to maintain environmental quality and meet requirements of various environmental policies and regulations. These measures are contained herein as Appendix Z. The Companies will be responsible for ensuring their contractors and employees implement these measures.

4.0 CONTENTS

Table 4-1 is divided into eight columns as follows:

- **Column 1**: This column contains the EPM number agreed to between the Companies and BLM to allow for a clear and consecutive presentation of EPMs by resource.
- **Column 2**: A description of the EPM that will be implemented during design, construction, operations, and/or maintenance. These EPMs become part of the Project as proposed by the Companies.
- **Columns 3-5**: These columns serve as a guide to the phases of the Project for which the EPM is most applicable: design and engineering; construction; or operations and maintenance. EPMs indicated as only applicable to construction may also be applicable to operations and maintenance projects that involve ground disturbance.
- **Columns 6-8**: These columns identify where the EPM is proposed to be applied by the Companies based on ownership. In addition, the Companies propose to apply the EPMs more broadly for certain segments based on land pattern characteristics.

The Wyoming segments of the Project cross a relatively large percentage of federal land, and private lands tend to be unsigned and isolated sections of land in a checkerboard pattern. Therefore, in Wyoming, the EPMs will be applied to the entire segment (i.e., including private and state land) except as follows:

- Proposed substation and regeneration sites located on private land, unless they are standard EPMs of the Companies;
- EPMs that are only applicable to a specific BLM Field Office;
- EPMs that are only applicable to National Forest System lands; and
- Private property, if different practices are requested by the property owner and don't violate the law.

In Idaho, Segment 4 predominantly crosses land under private ownership in agriculture and other development; federal land in this segment is mostly clustered. In this segment, EPMs will be applied based on ownership as identified in Table 4-1 below, except as follows:

- Proposed transmission line substation and regeneration sites located on private land, unless they are standard EPMs of the Companies; and
- Private property, if different practices are requested by the property owner and don't violate the law.

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	Environmental Protection Measures	Design and Engineering	Construction	Operations and Maintenance	Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
OPERATIONS AND MAINTENANCE							
G-1	Resource Management Plan (as amended) design criteria, Best Management Practices (BMPs), and mitigation requirements will apply on BLM-managed lands.	•	•	•	•		
G-2	Forest Plan Standards and Guidelines (as amended) will apply on National Forest System (NFS) lands. Ground-disturbing and vegetation management activities will comply with all Agency-wide, regional, and state BMPs.	•	•	•	•		
G-3	Third-party Environmental Compliance Inspection Contractor (CIC) Monitors approved by the Agencies will monitor construction activities. Monitoring activities will be structured in accordance with the Environmental Compliance Management Plan included as Appendix C of the Plan of Development.		•		•		
G-4	All wildlife and plant surveys/preconstruction surveys will be considered as “casual use” activities and will not be restricted or prevented to occur due to overlapping season and temporal restrictions.		•		•		
OM-1	The Companies will comply with the road maintenance standards of the federal or state agency controlling the land.		•	•	•	•	•
OM-2	Roads will be maintained to have crossroad drainage in order to minimize the amount of channeling or ditches needed. Water bars will be installed at all alignment changes (curves), significant grade changes, and as requested by the federal or state agency.			•	•	•	•
OM-3	All access road drainage structures, constructed and installed for the Companies’ use only, will be maintained or repaired by the Companies during O&M activities or emergency response.			•	•	•	•
OM-4	Although routine and corrective O&M is of limited duration and impact, the Companies will attempt to adhere to specific closure periods and areas and are proposing not to conduct any routine and corrective O&M activities during the timeframes and at the locations identified in Appendix R of the Plan of Development to the greatest extent practical. The appropriate federal or state agency will notify the Companies of any spatial or temporal restrictions that are in effect for the Project area (e.g., fire restrictions) that would be applicable to corrective O&M activities.		•	•	•	•	
OM-5	Existing improvements (fences, gates, etc.) will be repaired or replaced if they are damaged by O&M activities, as agreed to by the parties involved.			•	•	•	•
OM-6	The Agencies may restrict general public access to closed federal or state roads and		•	•	•	•	

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
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EPM Number	Environmental Protection Measures	Design and Engineering	Construction	Operations and Maintenance	Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
	access roads that the Companies maintain (the Companies will maintain access roads constructed for the Companies' use only). In cases of restricted access, the Companies will physically close the road with a gate. Gates will be locked with both a lock supplied by the Companies and with a federal agency lock. Access management will be updated as necessary to reflect current road closures and gate locations.						
OM-7	Any integrated vegetation management (IVM) control method, including those listed in Appendix R of the Plan of Development, may be used to control the growth of trees and tall shrubs to maintain clearances (the IVM recommended wire and border zones as indicated in Appendix R of the Plan of Development) and improve access to facilities.			•	•	•	•
OM-8	Any IVM control method including those listed in Appendix R of the Plan of Development may be used to control the growth of additional vegetation to maintain clearances, the IVM recommended wire and border zones as indicated in Appendix R, and improve access to facilities.			•	•	•	•
OM-9	Where possible, low-growing vegetation and small tree species within the right-of-way (ROW) that will not grow into the minimum required clearance distance will be left in place; trees may be removed on a subsequent maintenance cycle as they increase in size. Hazard trees are typically those trees or snags within or adjacent to the ROW that are likely to interfere with or fall into transmission lines or associated facilities. Hazard trees and other "hot spots" (high priority areas requiring vegetation management actions) are identified during routine line inspections and removed annually. In addition to hazard trees, other critical conditions that may require immediate attention include trees that interfere with transmission conductors and trees whose growth will not allow safe clearance until the next scheduled maintenance cycle.			•	•	•	•
OM-10	Any vegetation control method may be used for vegetation maintenance on access roads; this is typically scheduled at the same time as vegetation maintenance within the ROW. However, in cases where vegetation grows quickly, removal may occur annually. Vegetation that will not interfere with the safe operation of vehicles and equipment will be left in place.			•	•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	**Environmental Protection Measures**	**Design and Engineering**	**Construction**	**Operations and Maintenance**	**Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9**	**State Land in Idaho**	**Private Land in Idaho Segments 4, 5, 7, and 10**
OM-11	Slash will be lopped and scattered throughout the surrounding land. Stumps resulting from vegetation treatments will not be over 1 foot tall (unless the tree is not able to be safely cut at or below one foot from the ground surface), and lopped slash will be left as close to the ground as possible. Lopped slash will be a maximum of 18 inches in length for small trees and limb wood. If the federal land managing agency determines that fuel levels are unacceptable, they shall notify the Companies and develop a mutually agreed upon method to reduce fuels. This may include, but is not limited to, chipping.			•	•	•	•
OM-12	Hazard trees will be felled in a direction away from the ROW. Slash and limbs that fall within the ROW will be treated as described above; boles of trees greater than 8 inches will be left in place.			•	•	•	•
OM-13	Any chemical control will be done in accordance with any applicable local, state, and federal rules and regulations. Pesticides or other chemical control will be selected from the BLM and USFS lists of previously approved pesticides and in accordance with any pesticide plans. If the federal land managing agency determines that a previously approved pesticide and/or plan is unacceptable, they shall notify the Companies.			•	•	•	•
OM-14	Before beginning an O&M project on federal or state land, the Companies or their subcontractors will clean all equipment that will operate off-road or disturb the ground. Tracks, skid plates, and other parts that can trap soil and debris will be removed for cleaning when feasible, and the entire vehicle and equipment will be cleaned at an off-site location.			•	•	•	•
OM-15	To help limit the spread and establishment of noxious weed species in disturbed areas, desired vegetation needs to be established promptly after disturbance. The Companies will rehabilitate significantly disturbed areas as soon as possible after ground-disturbing activities and during the optimal period. Seed and mulch will be certified “noxious weed free” and seed mix will be agreed to in advance by the landowner or land managing agency.			•	•	•	•
OM-16	Routine and corrective O&M activities in streams with sensitive fish species will occur from July 1 to September 1 in an effort to minimize impact to spawning and migration activities. These activities include, but are not limited to, culvert installation and/or replacement and stream bank stabilization. Fording streams at existing crossings on existing roads (e.g., dip, culvert, bridge) will occur as necessary throughout the year.			•	•	•	•
OM-17	Woody vegetation management within 50 feet of streams will be conducted by hand crews.			•	•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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EPM Number	**Environmental Protection Measures**	**Design and Engineering**	**Construction**	**Operations and Maintenance**	**Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9**	**State Land in Idaho**	**Private Land in Idaho Segments 4, 5, 7, and 10**
OM-18	Herbaceous plants and low-growing shrubs will be left in place if they do not interfere with the safe O&M of Project lines and equipment as described in Appendix R of the Plan of Development.			•	•	•	•
OM-19	The Companies will use existing stream crossings or new, permanent crossings that were approved as part of the Project, and will not create additional crossings without prior agency permitting and approval.			•	•	•	•
OM-20	Only pesticides approved by the land managing agency as safe to use in aquatic environments and reviewed by the Companies for effectiveness will be used within 100 feet of sensitive aquatic resources or in areas with a high leaching potential.			•	•		
OM-21	Prior to the start of O&M activities, all supervisory personnel will be instructed on the protection of natural resources, including sensitive plant and wildlife species and habitats. If a contractor is used, the construction contract will address (a) the sensitive plant species that may be present in a particular area based on previous surveys and literature review; (b) the federal and state laws regarding protection of plants and wildlife; (c) the importance of these resources; (d) the purpose and necessity of protecting them; and (e) methods for protecting sensitive resources (e.g., Endangered Species Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and BLM wildlife policy).			•	•	•	•
OM-22	Sensitive plant populations that occur within or near the ROW and work areas will be marked on the ground, where practical, to ensure that they are avoided. If species are discovered during the work, the Companies will establish a spatial buffer zone, will contact the appropriate Agency within 24 hours, and will continue with the O&M activities outside of the established buffer unless otherwise directed. The Agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer poses a threat to the plant population, the marking (stakes), if used, will be promptly removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.			•	•		

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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OM-23	If sensitive wildlife species are discovered during O&M activities, and the animals are not directly within ground disturbance areas, they will be protected by marking the edges of the ROW and new access roads in the general vicinity to ensure that workers do not leave those areas. If the animals are within work areas that have, or will have, ground disturbance, the Companies will establish an appropriate buffer zone and will contact the federal or state land manager immediately. The federal or state agency may evaluate the adequacy of the buffer on a case-by-case basis. Unless the Companies are informed otherwise, work outside of the buffer area will continue. If the Companies need to work within the buffer area, the Agencies and Companies will work together to develop a solution that is acceptable to both parties and will allow for the Companies to complete the work in a timely manner or within the scheduled outage window, if applicable. After the O&M activities are completed, or will no longer pose a threat to the species, the marking (stakes) will promptly be removed to protect the site's significance and location from unwanted attention. As needed, marking will be reinstated during the land rehabilitation period.			•	•	•	•
OM-24	The Companies will provide crews and contractors with maps showing environmentally sensitive areas; these maps will include work zones as well as ROW areas where ground disturbance will be avoided.			•	•	•	•
OM-25	In the event any sensitive plants require relocation, permission will be obtained from the federal agency. If avoidance or relocation is not practical, the topsoil surrounding the plants will be salvaged, stored separately from subsoil, and respread during the restoration process.			•	•		
OM-26	If sensitive wildlife species are killed or injured due to O&M activities, the appropriate federal agency will be notified.			•	•		
OM-27	All on-site personnel will be made aware that all birds of prey are protected by federal and state laws.			•	•	•	•
VISUAL							
VIS-1	The 500-kV transmission line lattice steel towers will be specified to have a dull galvanized finish. The proposed surface finish is a galvanized finish, treated after the initial galvanizing process to produce a dulled finish to reduce surface reflectivity. This process results in an installed tower with more visual absorption and thus allows the towers to blend in better with the landscape.	•			•	•	•
VIS-2	The three subconductors (500-kV) and two subconductors (230-kV) that make up the	•			•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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	conductor bundles will be specified to have a non–specular finish. Similar to the dulled finish of the transmission structures, the conductors reduce surface reflectivity. This process results in eliminating the shiny ribbon effect often seen in older untreated transmission lines and thus allows the conductors to blend in better with the landscape.						
VIS-3	The proposed 230-kV transmission lines between Windstar and Aeolus will use a steel H-frame structure configuration similar to the existing 230-kV line in the same general location. The steel pole H-frame will utilize self-weathering steel. Self-weathering steel is manufactured from a group of steel alloys that were developed to eliminate the need for painting. This type of steel alloy forms a stable rust-like appearance if exposed to the weather for several years. In areas where the 230-kV structures are skylined, dull galvanized steel will be considered to minimize visual impacts. Dulled galvanized steel has a galvanized finish, treated after the initial galvanizing process to produce a dulled finish to reduce surface reflectivity. This process results in an installed tower with more visual absorption and thus allows the towers to blend in better with the terrain, while at the same time preserving the corrosion resistant properties of the galvanized coating on the steel.	•			•	•	•
VIS-4	No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or construction activity except as required under the timber sale contracts.		•		•	•	•
VIS-5	To minimize ground disturbance and/or reduce scarring (visual contrast) of the landscape, the alignment of any new access roads or cross-country routes will follow the landform contours where practicable, providing that such alignment does not impact resource values additionally or result in new impacts to resources that were previously avoided.	•	•		•	•	•
VIS-6	To minimize sensitive feature disturbance and/or visual contrast in designated areas on federal lands, structures will be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses and cultural sites and/or to allow conductors to clearly span the features, within the limits of standard tower design. Where conflicts arise between resources, the applicable land manager will be consulted.	•	•		•		
VIS-7	To reduce visual impacts on federal land, including potential impacts on recreation values and safety, towers will be placed at the maximum feasible distance from the highway, canyon and trail crossings within limits of standard design and to the extent practical.	•	•		•		
VIS-8	Crossings of rivers shall be at approximately right angles where practical. Strategic placement of structures will be done both as a means to screen views of the transmission line and ROW and to minimize the need for vegetative clearing.	•	•		•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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VIS-9	Insulators will be made of materials that have reduced potential to reflect and refract light. Glass insulators that are highly reflective will not be permitted in scenic areas on federally managed lands.	•	•		•		
VIS-10	For segments of the line 1) within the 0- to 0.5-mile zone of Interstate highways where existing lines of the same voltage are paralleled and 2) within the 0- to 0.5-mile zone of residences where existing lines of the same voltage are paralleled, new towers will be located adjacent to existing towers, within the limits of standard transmission line design and considering the ruling span length of adjacent proposed and existing lines.	•	•		•	•	•
VIS-11	Site-specific "micrositing," within the limits of standard engineering design, will be required near certain sensitive areas, as identified by the agencies, where proposed transmission facilities will impact visual quality; these situations include: • Crossings over major highways; • Crossings of high quality historic trails; • Crossings over the North Platte and Snake Rivers; • Sensitive travelways, use areas, residential areas, recreational facilities as identified by the agencies (including national recreation and scenic trails, campgrounds, recreation areas, and trailheads), and other areas identified by management plans; and • To avoid bisecting forest patches within the Sawtooth NF. The Companies will consult with the applicable local land management agency during transmission line design.	•	•		•		
VIS-12	The lighting specified for the marshaling yards will be the minimum required to meet safety and security standards. All light fixtures within 1,000 feet of a residence will be hooded to eliminate any potential for glare and to prevent light from spilling off the site or up into the sky. Additionally, the fixtures will have sensors and switches to permit the lighting to be turned off at times when it is not required.		•		•	•	•
VIS-13	To reduce visual contrast in areas where overstory vegetation is removed for access, tower pads, or conductor clearance, specific sections of the ROW on federal land will have uneven edges (trees will be removed from the edge of the ROW out or away from the ROW boundary) to give a natural appearance, where not in conflict with regulatory requirements (e.g., NERC, WECC, and Occupational Safety and Health Administration requirements). This will be a onetime application (not applicable to operations and maintenance) and	•	•		•		

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
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	conducted with agency approval.						
VIS-14	To mitigate potential visual impacts on federal land, the construction and maintenance plan, to be developed by the Companies, will include measures to reduce ROW scarring and enhance restoration. The plan will be approved by the land management agency prior to ground clearing and construction.	•		•	•		
VIS-15	If Alternative 7K is selected, Natina stain (or an equivalent product) will be applied to towers (including lattice towers) placed on NFS lands within the Sawtooth NF to reduce visual effects at the middleground level. Note that this is an agency imposed measure.	•	•	•	Sawtooth NF (Not Applicable to Segment D)		
CULTURAL							
CR-1	All work conducted in accordance with the Historic Properties Treatment Plan (HPTP) will be performed by qualified archeologists with trained assistants.		•		•	•	•
CR-2	An Inadvertent Discovery Plan will be included as part of the HPTP. This plan will specify what steps will be taken if a subsurface cultural resource is discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.		•		•	•	•
CR-3	The Cultural Resources Protection Plan will include provisions for the preparation and curation of artifacts from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.		•		•		
CR-4	Literature reviews and Class III surveys will be completed for cultural resources. A literature review will be conducted on public and private lands and will cover a study area of one-half mile on either side of the proposed and alternate transmission line alignments as well as areas identified for use as multi-purpose areas and access roads. Class III surveys covering the Area of Potential Effect (APE) as specified in the Programmatic Agreement will be completed. A Class II Sample Survey was conducted that consisted of an intensive pedestrian survey of 15 percent of the length of all alternatives. One-mile long by 500-foot wide transect strips were surveyed along proposed and alternative routes on federal lands only, for use in detailed analysis in the EIS. This also included a detailed preliminary assessment of effects on historic trails on all lands within the APE, including existing trail	•			•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	**Environmental Protection Measures**	**Design and Engineering**	**Construction**	**Operations and Maintenance**	**Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9**	**State Land in Idaho**	**Private Land in Idaho Segments 4, 5, 7, and 10**
	condition and a visual effects assessment.						
CR-5	If construction will adversely affect any properties listed on, or eligible for listing on, the National Register of Historic Places (NRHP), mitigation will be required. Mitigation will be in accordance with the HPTP and may include, but not be limited to, one or more of the following measures: a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) the use of landscaping or other techniques that will minimize or eliminate effects on the historic setting or ambience of standing structures; and c) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures.		•		•	•	•
CR-6	Avoidance areas will be flagged or otherwise marked prior to construction activities. Flagging or other marking will be removed once construction is completed in an area.		•		•	•	•
CR-7	To minimize unauthorized collecting of archaeological material or vandalism to known archaeological sites, all workers will attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect these resources.		•		•	•	•
CR-8	If human remains are discovered, construction will be halted and the coroner will be notified and measures specified in the HPTP will be followed.		•		•	•	•
CR-9	On NFS lands, a management plan should be developed for each historic property nominated to the NRHP. The plan should be drafted during the nomination process. The National Heritage Strategy should be used to guide decisions on issues related to the Heritage Program.	•		•	NFS lands only		
RECLAMATION							
WEED 1 – 3, and 6 – 18	(Described under Weeds)						
WQA 32, 34, and 35	(Described under Water Quality)						
REC-1	The Companies' personnel and their contractor will be trained on noxious and invasive weed identification to facilitate avoidance of infestations where possible or identification of			•	•	•	•

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	new infestations.						
REC-2	Preconstruction weed treatment will be conducted prior to the start of ground-disturbing activities and at the time most appropriate for the target species.		•		•	•	•
REC-3	Preconstruction weed treatment will be limited to the areas that are expected to have surface-disturbing activities. The Final Reclamation Plan will include a schedule showing the phased in-service dates for different segments. Preconstruction weed treatment will be scheduled accordingly.		•		•	•	•
REC-4	Preconstruction treatment may use mechanical control, hand spraying, grazing, or pesticides. The Final Reclamation Plan will discuss those options, as applicable.		•		•	•	•
REC-5	All pesticide applications will comply with label restrictions, federal, state and/or county regulation, the Companies' specifications and landowner agreements. No spraying will occur prior to notification of the applicable land management agency. On federal or state controlled lands, a pesticide use plan will be submitted prior to any pesticide application as recommended in the BLM herbicide EIS (http://www.blm.gov/wo/st/en/prog/more/veg_eis.html). The pesticide use plan will include the dates and locations of application, target species, pesticide, adjuvants, and application rates and methods (e.g., spot spray vs. boom spray). No pesticide will be applied to any private property without written approval of the landowner. The Final Reclamation Plan will contain a list of pesticides that may be used, target species, best time for application, application rates, and if they are approved for use on BLM-managed and NFS lands.		•		•	•	•
REC-6	Pesticides may be applied using a broadcast applicator mounted on a truck or all-terrain vehicle (ATV), backpack sprayers, or with hand sprayers as conditions dictate. Pesticide applications will be conducted only by licensed operators or under the supervision of a licensed operator. Vehicle-mounted sprayers (e.g., handgun, boom, and injector) may be used in open areas readily accessible by vehicle. Where allowed, a broadcast applicator will likely be used. In areas where noxious weeds are more isolated and interspersed with desirable vegetation, noxious and invasive weeds will be targeted by hand application methods (e.g., backpack spraying), thereby avoiding other plants. Preconstruction pesticide applications will not occur within 100 feet of known special status species. Calibration checks of equipment will be conducted at the beginning and periodically during spraying to ensure proper application rates are achieved.		•		•	•	•
REC-7	All areas treated will be documented using GPS technologies and included in the annual report.			•	•	•	•
REC-8	Areas of existing noxious weeds and invasive species will be avoided where possible to		•	•	•	•	•

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	reduce the risk of spread.						
REC-9	Project vehicles will arrive at the job site clean of all soil and herbaceous material. The Construction Contractor will ensure vehicles and equipment are free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes before the vehicles and equipment access the Project. The CIC will inspect vehicles to ensure compliance.		•	•	•	•	•
REC-10	When the Construction Contractor demobilizes from the job site where identified infestations of noxious weeds are present, they will use appropriate decontamination measures as defined in the Final Reclamation Plan.		•	•	•	•	•
REC-11	Soil stockpiles from areas that did not have noxious weeds or invasive species present, will not be placed adjacent to populations of noxious weeds or invasive species, where practicable.		•		•	•	•
REC-12	Areas disturbed by Project activities are susceptible to the establishment and spread of noxious weeds. Erosion control measures identified in the SWPPP(s) will also assist in preventing the establishment of weeds on exposed soils.		•		•	•	•
REC-13	Project-related storage and multi-purpose areas, fly yards, and other areas that are subject to regular long-term disturbance will be kept weed-free through regular site inspections and pesticide applications, subject to the consent of the landowner.		•		•	•	•
REC-14	Where preconstruction surveys have identified noxious or invasive weed species infestations, topsoil and other soils will be placed next to the infested area and clearly identified as coming from an infested area. Movement of stockpiled vegetation and salvaged topsoil will be limited to eliminate the transport of soil-borne noxious weed seeds, roots, or rhizomes, and marked as containing noxious seed materials to avoid mixing with weed-free soil. Topsoil will be returned to the area it was taken from and will not be spread in adjacent areas. If the topsoil is not suitable for backfill, then it will be spread in another previously disturbed area and clearly identified for future weed treatments as applicable. As directed by the BLM or USFS, the Construction Contractor may be required to provide additional treatments (i.e., pre-emergent pesticides) to prevent return of noxious weeds.		•		•	•	•
REC-15	Straw or hay that may be used as a BMP to control erosion and sedimentation must be certified weed free. If certified weed-free materials are not available, then alternative BMPs will be used. The use of alternative BMPs will be coordinated with the construction storm water inspector.		•		•	•	•

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REC-16	The topsoil layer will be removed, taking care not to mix it with the underlying sub-soil. Where topsoil separation is employed, topsoil will be stored in a separate stockpile.		•		•	•	•
REC-17	Certified weed-free straw, mulch, gravel, and other BMPs as appropriate, will be used as described in the SWPPP to stabilize the stockpile and limit erosion and standing water, control dust, and control the establishment of noxious or invasive weeds in stockpiled soils.		•		•	•	•
REC-18	Topsoil and sub-surface soils will be replaced in the proper order during reclamation.		•		•	•	•
REC-19	Where it is necessary to spread soils (subsurface soils or waste rock resulting from excavations or foundation drilling), it will be done where practicable and in close proximity to where the disturbance occurred (within the ROW). Material will be spread uniformly to match existing contours, covered with topsoil when available, and reseeded.		•		•	•	•
REC-20	Temporarily disturbed lands within the ROW will be recontoured to blend with the surrounding landscape. Recontouring will emphasize restoration of the existing drainage patterns and landform to preconstruction conditions, to the extent practicable. (Tower pads will not be recontoured.)		•		•	•	•
REC-21	De-compaction: Areas within the ROW, laydown or multi-purpose areas, and other areas of extensive vehicle travel will typically contain compacted soils. These soils will be de-compacted on a case-by-case basis through negotiation with the landowner or land management agency.		•		•	•	•
REC-22	Final Cleanup: Final cleanup will ensure that all construction areas are free of any construction debris including, but not limited to: assembly scrap metals, oil or other petroleum-based liquids, construction wood debris, and worker-generated litter. Permanent erosion control devices will be left in place.		•		•	•	•
REC-23	The Companies will utilize soil amendments (e.g., fertilizer, wood or straw mulches, tackifying agents, or soil stabilizing emulsions) on a case-by-case basis and with landowner or land management agency approval. Specific soil amendments will be identified in the Final Reclamation Plan and be consistent with the SWPPPs.		•		•	•	•
REC-24	Broadcast seeding will apply the seed directly on the ground surface. The type of broadcast spreader will depend on the size of the area to be seeded, and the terrain. Seed will be placed in direct contact with the soil, ideally at a depth of approximately 0.5 to 1-inch deep. It will then be covered by raking or dragging a chain or harrow over the seed bed to remove air pockets.		•		•	•	•

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REC-25	Drill seeding will be used on areas of sufficient size with moderate or favorable terrain to accommodate mechanical equipment. Drill seeding provides the advantage of planting the seed at a uniform depth.		•		•	•	•
REC-26	Hydroseeding, which is the spraying of seeds and water onto the ground surface, or hydroseeding/hydromulching, which is the spraying of seeds, mulch and water, may be implemented on steeper slopes. Tackifier may be added to facilitate adherence of hydromulch to slopes greater than 25 percent.		•		•	•	•
REC-27	Reclamation treatments, such as seeding, will be based on site-specific conditions and the appropriate seed mix approved for those conditions. Seeding will help to reduce the spread of noxious weeds by revegetating exposed soils.		•		•	•	•
REC-28	If areas are not immediately seeded after construction, due to weather or scheduling constraints, all noxious weeds will be eradicated before seeding, preferably in the spring.		•		•	•	•
REC-29	Upon completion of construction, 70 percent of the disturbed area along the transmission line within the ROW, at substations, and at related facilities will be revegetated with approved vegetation (refer to Appendix D – Framework Reclamation Plan).		•		•	•	•
VEGETATION							
REC-2–17, 23–29	(Described under Reclamation)						
WEED-6, 7, and 11	(Described under Weeds)						
VEG-1	During construction, blading of native plant communities will be minimized, consistent with safe construction practices. Where feasible, shrubs will be cut at or near ground level to facilitate re-growth after construction. The footprint of construction and operations facilities will be kept to the minimum necessary. Blading near watercourses will be minimized and BMPs identified in the SWPPPs will be implemented to reduce the risk of materials entering watercourses.		•		•	•	•
VEG-2	Where feasible, locate new access roads to minimize the number of trees removed during construction. However, new access roads will not be relocated if the change would result in an increase in the overall disturbance (acres); require additional cut and fill activities, or impact other sensitive resources (e.g., sagebrush plant community, sensitive species habitat, and/or cultural resources or viewshed).	•			•		

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VEG-3	In areas where revegetation will be completed, topsoil salvage and replacement will be used for all cut or fill areas and for areas larger than 1 acre where soils will be disturbed during construction.		•		•	•	•
VEG-4	Prior to the start of construction and maintenance activities, all contractor vehicles and equipment (including personal protective equipment) will be cleaned of soil and debris capable of transporting invasive plant seeds or other propagules. All vehicles and equipment will be inspected by Agency-approved inspectors and certified as weed free by agency approved personnel, in order to ensure they have been cleaned properly. The Construction Contractor will identify the location of all cleaning stations, how materials cleaned from vehicles at these stations will be either captured or treated so that cleaning station locations will not become infected, and who will confirm/certify that vehicles leaving cleaning stations and/or entering construction sites are free of invasive plant materials in the Final Reclamation and Noxious Weed Plans.		•	•	•	•	•
VEG-5	The Agency-approved Environmental CIC will approve primary noxious weed-free straw or other erosion control materials on federally managed lands prior to application.		•		•		
VEG-6	The Companies will consult with the appropriate land management agency to determine tree seedlings to be planted in decommissioned roadbeds and other temporarily disturbed areas on federally managed lands (where trees were removed) to assure seedlings are matched to site conditions.			•	•		
VEG-7	The Companies will notify the USFS when topsoil salvage operations are scheduled and seek assistance with field identification of topsoil material.	•	•		NFS land only		
VEG-8	Annual post-construction monitoring and treatment of invasive plants on closed roads (access roads dedicated for use by the Companies only), temporary roads, fly yards, and other disturbed areas in the ROW shall continue for 3 years in areas where infestations or populations of noxious weeds have been identified. If after 3 years, post-construction conditions are not equivalent to or better than preconstruction conditions (in accordance with applicable permit), monitoring and treatment will continue until these conditions are met. If adjacent land uses are contributing to the introduction and/or persistence of invasive plant species within areas disturbed by the Project, then the Companies will not be required to treat noxious weeds for more than 3 years.			•	•		
VEG-9	The Companies will meet the terms and stipulations within the timber sale contracts for timber removal operations on the Medicine Bow-Routt, Caribou-Targhee, and Sawtooth		•		NFS land only		

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	NFs.						
VEG-10	All timber and other vegetative resources to be sold or removed from federal lands will be appraised and sold at the appraised value. Note that this is an agency imposed measure.		•		Federal land only		
TES-PLANTS							
OM-21–22 and 24–25	(Described under Operations and Maintenance.)						
TESPL-1	Blowout Penstemon – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.		•		•		
TESPL-2	Colorado Butterfly Plant – Surface disturbance will be allowed in suitable habitat where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impact to populations.		•		•		
TESPL-3	Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of Project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	•			•		

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TESPL-4	Slickspot Peppergrass – Environmental monitors will survey for and mark slickspots and aboveground populations of slickspot peppergrass within 50 feet of the construction area prior to ground disturbance (including roads) in potential or occupied slickspot peppergrass habitat. No construction shall occur within 50 feet of any slickspot peppergrass plants or slickspots found by the environmental monitor. Also, construction shall not occur within 50 feet of previously known occupied slickspot peppergrass areas, based on Idaho CDC data, even if aboveground plants are not observed by the environmental monitor. Within proposed critical habitat, impacts to Primary Constituent Elements, such as native sagebrush/forb vegetation, will be avoided to the extent practicable. Seeding during reclamation in areas of suitable habitat will use methods that minimize soil disturbance such as no-till drills or rangeland drills with depth bands. Reclamation will use certified weed-free native seed. Excess soils will not be stored or spread on slickspots. Note that this species is not expected to occur in Segment D.	•	•		•	•	•
TESPL-5	Sand dune and cushion plant communities will be avoided, where feasible.	•	•		•		
TESPL-6	Goose Creek Milkvetch – Surface disturbance will be allowed in suitable habitat for Goose Creek milkvetch where species-specific surveys have determined that no populations are present. The species-specific surveys will be conducted the year prior to construction, and the proposed disturbance areas will be redesigned to avoid direct impacts to populations. Note that this species is not expected to occur in Segment D.	•			•	•	
TESPL-7	Ute Ladies'-tresses – Qualified botanists shall conduct preconstruction surveys during a season when target species are readily identifiable for special status or globally rare species. Where feasible, micrositing of project facilities shall avoid direct impacts to identified populations. Survey reports documenting the surveys, their results, and recommendations must be provided to the applicable land management agencies for approval prior to construction. Agency botanists may evaluate individual sites based on site-specific conditions. Documentation of the evaluation of avoidance of impacts to sensitive and globally rare plants must be provided to the Agencies prior to construction.	•			•	•	•
WEEDS							
REC-2–15, 17	(Described under Reclamation)						

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OM-13–15 and 20	(Described under Operations and Maintenance)						
VEG-4 and 8	(Described under Vegetation)						
FISH-3	(Described under Fish)						
SOIL-11 and 12	(Described under Soils)						
WEED-1	The Companies shall consult with each appropriate local land management agency (USFS and BLM) office to determine appropriate seed mix and commercial seed source for revegetation. The Final Reclamation Plan shall specify the approved seed mixes for federal lands. Disturbed soil will not be allowed to support the growth of noxious weeds or invasive weedy species. Prevention of noxious weeds will apply to all phases of the Project.	•	•		•	•	
WEED-2	Weed control and prevention measures shall adhere to all agency standards and guidelines. These measures shall be developed in consultation with local, state, and federal weed agencies; all implemented measures will follow the principle of integrated weed management.		•		•	•	•
WEED-3	Soil stockpiles in areas containing noxious weeds and invasive plant species shall be kept separate from soil removed from areas that are free of noxious weed and invasive plant species, and the soil will be replaced in or near the original excavation. If requested by the applicable land management agency, soil stockpiles shall be covered with plastic if the soil stockpile will be in place for two weeks or more and is not being actively used. On lands managed by the USFS or per private landowner request, stockpiles will not be covered with plastic.		•		•		
WEED-4	Gravel and other materials used for road construction on federally managed lands shall come from certified weed-free sources.		•		Federal land only		
WEED-5	Where feasible, construction will begin in weed-free areas before operating in weed-infested areas. The feasibility of this measure will be determined after survey data is completed to identify weed-free and weed-infested areas.		•		•	•	•
WEED-6	All movement of construction vehicles outside of the ROW will be restricted to pre-designated access, contractor-acquired access, or public roads. All construction sites and access roads, including overland access routes, will be clearly marked or flagged at the		•		•	•	•

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	outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed their activities must be confined within the marked or flagged areas.						
WEED-7	Prior to arrival at the work site, all Construction Contractor vehicles and equipment will be cleaned using high-pressure air or water equipment. The cleaning activities will concentrate on tracks, feet, or tires and the undercarriage with special emphasis on axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Vehicle cabs will be swept out. The locations of vehicle cleaning stations will be identified by the Construction Contractor. Additional wash stations will be required as identified by the BLM, USFS, and CIC. Wash stations shall be no more than one acre in size and preferably located in areas that have previously been disturbed. The Construction Contractor shall provide a detailed design identifying all of the components of the wash stations, including rock surface and geomembrane layer to provide a barrier between noxious weeds and seeds and the soil for approval by the BLM or USFS Authorized Officer or his/her designated representative. The Construction Contractor shall also provide a description of how residue from the wash station will be disposed of for approval by the BLM, BOR, or USFS Authorized Officer or his/her designated representative.		•		•	•	•
WEED-8	When moving from weed contaminated areas to other areas along the transmission line ROW, all construction vehicles and equipment will be cleaned using compressed water or air in designated wash stations before proceeding to new locations. All washing of construction vehicles and equipment must be performed in approved wash stations.		•		•	•	•
WEED-9	Construction personnel will inspect, remove, and appropriately dispose of weed seed and plant parts found on their clothing and equipment.		•		•	•	•
WEED-10	Immediately following construction, the Construction Contractor will implement the reclamation of disturbed land as outlined in Appendix D – Framework Reclamation Plan as required. Continuing revegetation efforts will ensure adequate vegetative cover, reducing the potential for the invasion of noxious weeds.		•		•	•	•
WEED-11	Discing or other mechanical treatments that would disturb the soil surface within native habitats will be avoided in favor of pesticide application, which is an effective means of reducing the size of noxious weed populations, as well as preventing the establishment of new colonies.		•		•	•	•
WEED-12	Implement preventive measures, such as quarantine and closure, to reduce and contain existing noxious weed populations. Flagging will alert personnel and prevent access into		•		•	•	•

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	areas where noxious weeds occur. Construction disturbance will be minimized in these areas until control measures have been implemented (with the exception of reclamation treatments, as applicable).						
WEED-13	If discing or tilling is an appropriate and feasible weed treatment method, it will only be permitted in bladed areas.		•		•	•	•
WEED-14	Seed selection will be based on site-specific conditions, and the appropriate seed mix will be identified for those conditions based on the presence and treatment of noxious weeds in the Project area. The CIC or weed specialist may recommend modified seeding application rates and timing of implementation to achieve site-specific weed management objectives.		•		•	•	•
WEED-15	Additional weed and/or erosion control measures recommended during monitoring will follow the preventive and control measures outlined in the Noxious Weed Plan. Continued cooperation with the current BLM, BOR, or USFS noxious weed coordinator and local weed management areas is also encouraged.		•		•	•	•
WEED-16	A certified pesticide applicator, approved in the states of Wyoming or Idaho, will perform the application using pesticides selected and approved by BLM or USFS in accordance with applicable laws, regulations, and permit stipulations. All pesticide applications must follow U.S. Environmental Protection Agency label instructions. Application of pesticides will be suspended in accordance with the Companies' vegetation management specifications (e.g., strong winds, etc.).		•		•	•	•
WEED-17	Pesticides will be transported to the Project site daily with the following provisions: • Only the quantity needed for that day's work will be transported. • Concentrate will be transported only in approved containers in a manner that will prevent tipping or spilling, and in a location isolated from the vehicle's driving compartment, food, clothing, and safety equipment. • Mixing will be done offsite, over a drip catching device and at the following distances from open or flowing water, wetlands, or other sensitive resources: 100 feet for practically non-toxic to slightly toxic pesticides; 250 feet for moderately toxic or label advisory for ground/surface water; and 250 feet for highly toxic to very highly toxic pesticides. No pesticides will be applied at these areas unless authorized by appropriate regulatory agencies. • All pesticide equipment and containers will be inspected for leaks daily.		•		•	•	•

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	• Disposal of spent containers will be in accordance with the pesticide label.						
WEED-18	Pesticide contractors will be state-certified to apply pesticides and will obtain, and have readily available, copies of the appropriate material safety data sheets for the pesticides used. All pesticide spills will be reported in accordance with applicable laws and requirements.		•		•	•	•
STREAMS and WETLANDS							
OM- 16-20	(Described under Operations and Maintenance)						
VIS-6 and 8	(Described under Visual)						
REC-1–22, and 29	(Described under Reclamation)						
FISH-1 and 3	(Described under Fish)						
WQA-1, 2, 4 – 6, 13 – 18, 21, 23 – 29, and 45 – 48	(Described under Water Quality)						
TRANS-13, and 16 – 18	(Described under Transportation)						
WET-1	Impacts on wetland and riparian areas will be avoided unless physically or economically infeasible or where activities are permitted. Land management agencies' plans (RMPs, MFPs, and Forest Plans) that have standards, guidelines, stipulations, or avoidance buffers will be adhered to. Where these do not exist, Inland Fish Strategy (INFISH) buffers will be followed.	•			•		
WET-2	Wetland delineations will be performed prior to construction to support CWA Section 404 permitting and to minimize Project impacts. The delineation will identify both wetland and	•			•	•	•

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	non-wetland waters of the United States that would be affected by the Project.						
WET-3	Where impacts on wetlands are not avoidable, site-specific crossing plans and measures to mitigate impacts will be submitted to the appropriate regulatory agency, as well as the land-managing agency. The Companies and/or Construction Contractor will obtain all necessary permits prior to discharging dredged or fill material to waters of the U.S. and state.	•			•	•	•
WET-4	To meet USACE requirements for CWA 404 permitting, the Companies will submit a mitigation plan that is accepted by the USACE. The framework for this plan is included in the Final EIS.	•			•	•	•
WET-5	Limit construction equipment operating in streams and wetlands to that needed to clear temporary access, erect towers, pull conductor, and perform ground disturbing activities.		•		•	•	•
WET-6	Limit clearing of vegetation at the edges of a stream or wetland to the minimal area necessary for required conductor clearance and vehicle passage. Reclaim at least 70 percent of potential ground cover within 100 feet from the edges of all perennial streams, lakes, and other water bodies, or to the outer margin of the riparian ecosystem where wider than 100 feet.		•	•	•	•	•
WET-7	Salvage and respread topsoil in areas subject to temporary disturbance where grading and excavation will occur.		•		•	•	•
WET-8	Prohibit the use of imported soil, tree stumps, riprap, or brush to stabilize the construction corridor within wetlands.		•	•	•	•	•
FISH							
OM-16	(Described under Operation and Maintenance)						
BLA-2	(Described under Public Safety)						
FISH-1	On BLM-administered land, all culverts, whether temporary or permanent, must be designed to meet BLM Gold Book standards (Surface Operating Standards and Guidelines for Oil and Gas Exploration Development). On NFS lands, Forest Plan standards and guidelines shall apply.	•	•		•		
FISH-2	When taking water from TES fish-bearing streams for road and facility construction and maintenance activities, intake hoses shall be screened with the most appropriate mesh size (generally 3/32 of an inch), or as determined through coordination with NMFS and/or USFWS.		•	•	•	•	•
FISH-3	All wetlands and waters in the project area are assumed to contain aquatic invasive species		•		•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	**Environmental Protection Measures**	**Design and Engineering**	**Construction**	**Operations and Maintenance**	**Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9**	**State Land in Idaho**	**Private Land in Idaho Segments 4, 5, 7, and 10**
	and all equipment contacting water will be properly disinfected. After work is complete in a waterbody, any equipment involved in construction in that waterbody must be washed to remove any propagules of aquatic invasive species and to prevent the spread of those species to other waterbodies.						
WILDLIFE							
WILD-1	Requests for exceptions from closure periods and areas will be submitted by the Companies or the Construction Contractor per the Companies' direction to the appropriate BLM Field Office in which the exception is requested through the Environmental CIC. Established exception processes on BLM-managed lands will be followed. The agency, the CIC, or a contractor chosen by the Companies and approved by the agency, will conduct any surveys and coordinate with any other agencies as necessary. Factors considered in granting the exception include; animal conditions, climate and weather conditions, habitat conditions and availability, spatial considerations (e.g., travel routes and landscape connectivity), breeding activity levels, incubation or nestling stage, and timing, intensity, and duration of the Proposed action. Requests will be submitted in writing no more than 2 weeks prior to the proposed commencement of the construction period, to ensure that conditions during construction are consistent with those evaluated. The Authorized Officer, on a case-by-case basis, may grant exceptions to seasonal stipulations, and has the authority to cancel this exception at any time. A good faith effort will be made to act on exceptions within 5 business days of receiving a request, to allow for orderly construction mobilization. The CIC will conduct any required site visit and report the status to BLM for consideration of the decision to accept or deny the request. There is no exception process for NFS lands; all closure periods will be adhered to. Any proposed modifications to closure periods will be discussed on a case-by-case basis with the USFS.		•	•	•		
WILD-2	Vehicular speeds during construction and operations will be limited to 25 mph on all unsurfaced access roads. Crew and vehicle travel will be restricted to designated routes while on state designated big game winter range (except for areas within the ROW).		•	•	•		
WILD-3	The Project will be designed and constructed in compliance with Avian Power Line Interaction Committee (APLIC) guidance in order to reduce impacts to avian species. Any changes to the Project's design, as requested by federal, state, or local jurisdictions, as well as any changes considered by the Companies, will also be in compliance with APLIC guidance.	•	•	•	•	•	•

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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WILD-4	Preconstruction pedestrian or aerial nest surveys will be conducted in suitable habitat during the appropriate nesting time periods needed to identify new raptor nest locations, and to establish the status of previously identified raptor nests. Appropriate buffers will be applied to active nests during construction. All encounters of nesting raptors in the survey area will be reported to the biological monitor and to appropriate agencies.		•		•		
WILD-5	Surveys will be conducted along the route across the Caribou-Targhee NF, prior to construction, for caves, abandoned mines, and adits. If suitable bat roosts are identified, the Companies will consult with the USFS to determine appropriate protective measures.	•	•		Caribou-Targhee NF only		
WILD-6	Guy wires will be marked with bird deterrent devices on federal lands to avoid avian collisions with structures, as directed by local land manager.	•		•	•		
WILD-7	Flight diverters will be installed and maintained where the transmission line crosses rivers at the locations identified in Appendix H, Table 4-1.. Additional locations may be identified by the Agencies or the Companies. The flight diverters will be installed as directed in the Companies' approved Avian Protection Plans and in conformance with the MBTA and Eagle Acts as recommended in the current APLIC collision manual.	•		•	•	•	•
WILD-8	Preconstruction pedestrian or aerial surveys will be completed during appropriate nesting time periods, needed to identify each raptor species. The Companies will provide survey results to the Authorized Officer for approval. (See WILD-1)		•		•		
WILD-9	To the extent feasible, all vegetation clearing will be conducted prior to the onset of the avian breeding season (generally April 15 through July 31, depending on local conditions and federal land management plan requirements) in order to minimize impacts to migratory birds. Where this is not feasible, preconstruction surveys within the disturbance footprint shall be conducted within seven days prior to clearing. If an active nest (containing eggs or young) of a bird species protected under the MBTA is found during either preconstruction surveys or construction activities, the nest will be identified to species, inconspicuously marked, and vegetation left in place until any young have fledged.		•		•	•	•
WILD-10	Snags will be maintained along the outer portions of the Project's ROW in order to reduce the impacts to cavity nesting habitat to the extent practical and where not in conflict with the Companies' vegetation management specifications.		•		•		
WILD-11	Any areas that may require blasting will be identified and a blasting plan will be submitted to the appropriate agency for approval. Blasting within 0.25 mile of a known sensitive wildlife resource will require review and approval by the appropriate agency.		•		•		

Table 4-1. Environmental Protection Measures

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WILD-12	The Companies will annually document the presence and location of large stick nests on any towers constructed as a result of this Project. Nests will be categorized to species or species group (raptors or ravens), to the extent possible. This will begin following the first year of construction and continue through year 10 of operations. Results will be provided annually to the applicable land management agency and to the USFWS. Note that this is an agency imposed measure.			•	Federal land only		
TES-WILDLIFE							
TESWL-1	H-frame structures will be equipped with anti-perch devices to reduce raven and raptor use, and limit predation opportunities on special status prey species on federally managed lands. Note that this is an agency imposed measure based on the Casper and Rawlins RMPs.	•	•	•	•		
TESWL-2	In the event that an ESA-listed species not covered by the Biological Opinion (BO) is discovered during surveys, construction will cease, the USFWS will be notified, and Section 7 consultation will be initiated. In addition, the transmission line or structures will be relocated to minimize direct impacts to newly discovered ESA species, to the extent practical.		•	•	•	•	•
TESWL-3	Black-footed Ferret – Preconstruction surveys will be conducted for the black-tailed prairie dog (in addition to those already proposed for the white-tailed prairie dog) in Segment 1W.[1/]	•	•	•	•	•	•
TESWL-4	The Environmental CIC, an agency biologist, or agency designee will accompany the Construction Contractor site engineers during the final engineering design or prior to ground-disturbing activities to verify and flag the location of any known occupied structures (e.g., nests, burrows, colonies, dens) utilized by sensitive species. This will include, but not be limited to, artificial burrows that have been constructed as part of research/restoration efforts, prairie dog colonies, and raptor nests, which could be impacted by the Project based on the indicative engineering design. The final engineering design will be "microsited" (routed) to avoid direct impact to these occupied structures to the extent practical within engineering standards and constraints.	•			•		
TESWL-5	Grouse Species – The Companies will provide the Agencies a list of the protocols that the Companies will use during greater sage-grouse and sharp-tailed grouse preconstruction surveys. The Agencies will either approve these protocols, or suggest alternative protocols to be used.	•	•	•	•		

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

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TESWL-6	Sharp-tailed Grouse – In areas where sharp-tailed grouse leks occur in proximity to greater sage-grouse leks, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. In areas where sharp-tailed grouse leks occur in isolation from greater sage-grouse leks, surface disturbance will be avoided within 1.2 miles of occupied or undetermined sharp-tailed grouse leks from March 15 to July 15.	•	•	•	•		
TESWL-7	Yellow-billed cuckoo - A preconstruction survey for the yellow-billed cuckoo will be conducted at any proposed crossing of suitable habitat. If these birds are detected within 1 mile of the centerline (within existing habitat), construction will not occur until the young have fledged or the nest is abandoned. The crossing-specific plan will contain proposed monitoring measures to assure compliance with this measure.	•	•	•	•		
TESWL-8	Sage-Grouse – On federal lands, there will be no surface occupancy (NSO) within 0.6 mile of the perimeter (or centroid if the perimeter has not been mapped) of occupied greater sage-grouse leks located within Core areas in Wyoming, and NSO within 0.25 mile in non-Core areas (as required by BLM IM WY-2012-19 and BLM land management plans). "No surface occupancy," as used here, means no new surface facilities, including roads, will be placed within the NSO area. Other activities (i.e., non-surface occupancy) may be authorized, with the application of appropriate seasonal stipulations, provided the resource's protected area is not adversely affected.		•	•	•		
TESWL-9	Sage-Grouse – On federal lands, surface disturbance will be avoided within 4 miles of occupied or undetermined greater sage-grouse leks from March 1 to July 15. This distance (i.e., 4 miles) may be reduced on a case-by-case basis by the applicable agency, if site-specific conditions will allow the Project to be located closer to the lek than 4 miles (e.g., topography prevents the Project from being visible from the lek, or a major disturbance such as a freeway or existing transmission line is located between the Project and the lek).		•	•	•		
TESWL-10	Sage-Grouse – If Winter Concentration Areas for the greater sage-grouse are designated, there will be no surface disturbances within the designated areas from November 1 through March 15.		•	•	•		
TESWL-11	Sage-Grouse – No structures that require guy wires will be used in occupied sagebrush obligate habitats within the area managed under the Kemmerer RMP.		•	•	•		

Table 4-1. Environmental Protection Measures

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TESWL-12	Colorado River T&E Fishes – A payment of a one-time fee, based on a fee schedule provided by the USFWS, will be made based on the amount of water used during construction of any segments that cross the Colorado River system.		•		•	•	•
TESWL-13	Midget faded rattlesnake – Preconstruction surveys for occupied or potential midget faded rattlesnake hibernacula (i.e., rock outcrops with south to east aspect) will be conducted. The Companies shall prepare a plan identifying measures to reduce impacts to midget faded rattlesnake if they are discovered. This plan shall require approval by BLM and the WGFD prior to its implementation	•	•	•	•		
TESWL-14	For the protection of aquatic and riparian/wetland dependent species, surface disturbing and disruptive activities will be avoided in the following areas: 1) identified 100-year floodplains; 2) areas within 500 feet of perennial waters, springs, wells, and wetlands; and 3) areas within 100 feet of the inner gorge of ephemeral channels on federally managed lands. Where it is not possible to avoid wetland and riparian habitat, crossing-specific plans will be developed. These plans will: 1) demonstrate that vegetation removal is minimized; 2) show how sediment will be controlled during construction and operation within wetland and riparian areas; 3) attempt to intersect the wetland or riparian habitat at its edge; and 4) provide measures to restore habitat and ensure conservation of riparian microclimates. This plan will be submitted to the appropriate land management agency and approved prior to construction of any portion of the Project within sensitive riparian habitat. Note that this is an agency imposed measure.	•	•	•	Federal land only		
TESWL-15	Anti-perch devices will be required on power poles located within one-quarter mile of prairie dog towns within the BLM's Rawlins Field Office. Note that this is an agency imposed measure.		•		Federal land only		
TESWL-16	Sage-Grouse – If the Kemmerer RMP is amended to allow Proposed Route 4 or Alternatives 4C or 4E to be selected, existing fences within 1 mile of the portion of the Gateway West Project located on lands managed by the Kemmerer RMP will be modified with FireFly Grouse Flight diverters (or a similar product) in order to prevent greater sage-grouse mortalities. Additional site-specific reclamation, such as transplanting sagebrush seedlings within previous disturbed habitats, will also be required to off-set the net loss of sagebrush habitats within the Rock Creek/Tunp management area.		•	•	Federal land only		

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	Note that this is an agency imposed measure.						
PALEONTOLOGICAL RESOURCES							
PALEO-1	If significant fossil materials are discovered during Project construction, all surface-disturbing activities in the vicinity of the find will cease until notification to proceed is given by the Authorized Officer. The site will be protected to reduce the risk of damage to fossils and context. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer.		•	•	•	•	•
PALEO-2	Paleontological resources (as defined by omnibus Public Land Management Act – Paleontological Resources Preservation Section) on federally managed land shall be managed and protected using scientific principles and expertise. Appropriate plans for inventory, monitoring, and the scientific and educational use of these resources shall be developed in accordance with applicable agency laws, regulations and policies.	•	•	•	•		
PALEO-3	Where fossil-bearing sediments are exposed by construction, the sediments must be covered with a 4-inch layer of soil where feasible to reduce unauthorized removal or disturbance of resources.		•	•	•	•	•
PALEO-4	To ensure compliance with the Paleontological Resources Preservation Section of the Public Land Management Act, the Companies' Paleontological Resources Protection Plan for the Project (see PALEO-2) shall specify that: • Monitoring of excavation and grading in sensitive sediments, especially access roads and tower sites, must occur when construction is near or in those geologic formations. • Monitoring of excavations in sensitive sediments, screening the excavated spoils, and processing of bulk sediment samples for microinvertebrate fossils must occur where there is a significant potential for data recovery from those spoils. Monitoring must be performed by a qualified paleontologist and in consultation with a designated paleontologist in each state, NF, or BLM district. The Authorized Officer will designate the appropriate paleontologist depending on project location. Note that this is an agency imposed measure.	•	•	•	Federal land only		
PALEO-5	Field surveys will be completed prior to surface disturbance in areas with potential fossil yields of Class 3, 4, or 5, in accordance with criteria stated in the Paleontological Resources Protection Plan and as required by the land management agency.	•	•	•	Federal land only		

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	Note that this is an agency imposed measure.						
GEOLOGIC HAZARDS							
BLA-1, 2	(See description under Public Safety)						
GEO-1	Review the final location of the preferred alternative with affected mine operators and lessees to ensure all measures are taken to protect against subsidence.	•			•	•	•
GEO-2	A site-specific soil analysis shall be conducted prior to construction to verify any areas identified as unstable or marginally unstable on federal lands. A site-specific geotechnical analysis shall be conducted of federal lands prior to construction to locate areas where there is landslide risk. If such areas are identified, the Companies will develop mitigation and submit a report to the appropriate land management agency.	•		•	•		
SOILS							
WQA-1–17	(Described under Water Quality)						
SOIL-1	The Wyoming BLM State Reclamation Policy and applicable Agency management plan requirements for soil management will be followed on federal lands in the state of Wyoming.		•	•	•		
SOIL-2	The Companies will submit a Compaction Monitoring Plan for review and Agency approval prior to construction that specifies the conditions under which construction will either not start or will be shut down due to excessively wet soils. Conditions will be measurable in the field and easy to demonstrate to construction workers.	•			•	•	•
SOIL-3	During decommissioning, some obviously compacted areas, such as established newly constructed access roads, will require loosening prior to revegetation. If necessary to re-establish vegetation, the Companies will use a ripper blade, till, or similar instrument to loosen the surface soil layer.			•	•	•	•
SOIL-4	Detrimental soil disturbance such as compaction, erosion, puddling, and displacement will be minimized through implementing measures identified in the SWPPP. Measures may include road ripping, frequent waterbars, cross-ditching (e.g., rolling dips) or other methods to reduce compaction while preventing gully formation. Ripping pattern should be altered to a crossing, diagonal, or undulating pattern of tine paths to avoid concentrated runoff patterns that can lead to gullies.	•	•	•	•	•	•
SOIL-5	The Companies are responsible for monitoring to ensure soil protection is achieved, and		•	•	NFS land only		

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	providing a monitoring report on reseeding success and/or other methods to stabilize soils to the USFS by the end of each growing season for areas on NFS lands for 3 years or until requirements are met for the applicable permit.						
SOIL-6	Reclamation of all temporary disturbances on NFS lands (such as road cuts) should include replacement of material to original contours and re-compaction to pre-disturbance compaction percentage (which should be identified during reclamation at adjacent locations to the disturbance). Guidelines for streambank re-compaction to maximize vegetative regrowth and mechanical stability are covered in USACE publication ERDC TN-EMRRP-SR-26.		•	•	•		
SOIL-7	In order to meet Forest Plan Soil Standards on NFS lands, the Reclamation Plan (approved by the USFS) will describe on-site restoration using topsoil salvaging.	•	•	•	•		
SOIL-8	When feasible, reroute all construction or maintenance activities around wet areas so long as the route does not cross into sensitive resource areas and at the approval of the CIC.	•	•	•	•	•	•
SOIL-9	Limit access of construction equipment to the minimum area feasible, remove and separate topsoil in wet or saturated areas subject to temporary disturbance, and stabilize subsurface soils with a combination of one or more of the following: perform grading to dewater problem areas, utilize weight dispersion mats, and maintain erosion control measures such as surface drilling and back-dragging. After construction is complete, regrade and recontour the area, replace topsoil, and reseed to achieve the success standard desirable plant covers as stated in the Reclamation Plan.	•	•	•	•	•	•
SOIL-10	Vegetation removal and soil disturbances (including temporary road improvements) will be minimized in areas where soil constraints occur. In areas of overland construction, where vegetation removal is required, mowing or cutting and/or back-dragging a cat blade will be the primary method used (also refer to Appendix D –Framework Reclamation Plan).		•	•	•	•	•
SOIL-11	Prior to construction, soils will be evaluated to determine if they are expansive and if they may have potential effects on the proposed facilities. Where they represent a potential hazard, solutions recommended by the Project's geotechnical engineer, such as excavation and replacement of the expansive soils with compacted backfill, will be required. If imported backfill material is used, it must be from a BLM/USFS-approved source and certified as free of invasive weeds and propagules (i.e., seeds and root fragments).	•	•	•	•	•	•
SOIL-12	Limit disturbance of soils and vegetation removal to the minimum area necessary for access and construction.	•	•	•	•	•	•

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SOIL-13	Inform all construction personnel, before they are allowed to work on the Project, of environmental concerns, pertinent laws and regulations, and elements of the erosion control plan.	•	•	•	•	•	•
SOIL-14	Slope and berm graded material, where possible, to reduce surface water flows across the graded area.	•	•	•	•	•	•
SOIL-15	Replace excavated materials in disturbed areas and minimize the time between excavation and backfilling.	•	•	•	•	•	•
SOIL-16	Direct the dewatering of excavations onto stable surfaces to avoid soil erosion.	•	•	•	•	•	•
SOIL-17	Re-establish native vegetation cover in highly erodible areas as quickly as possible following construction where determined necessary (refer to Appendix D –Framework Reclamation Plan).		•	•	•	•	•
SOIL-18	Construction water and water used for dust control will come from permitted sources identified by the Construction Contractor and a map showing the locations of these sources will be provided to the CIC. If the quality of the water is found to be causing any environmental changes (i.e., dying vegetation, excessively hard crusting of soils), the Construction Contractor will test the quality of the water and provide the results to the BLM for review.	•	•	•	•	•	•
SOIL-19	All Project personnel will be educated on dust control procedures.	•	•	•	•	•	•
SOIL-20	To prevent accelerated wind or water erosion on dirt roads, gravel mulches may be added if other mitigation measures are not adequate or if the area is not in a sensitive receptor zone. Gravel of approximately 0.75 to 1.5 inches in diameter should be used and cover a minimum of 90 percent of the soil surface. Slopes steeper than 3:1 may require additional sediment and erosion control structures.	•	•	•	•	•	•
SOIL-21	Surface roughening aids establishment of vegetative cover, reduces runoff velocities, increases infiltration, and reduces erosion by providing sediment trapping. Graded areas with smooth surfaces increase the potential for accelerated erosion; therefore, surfaces should be left in a roughened condition whenever possible.	•	•	•	•	•	•
SOIL-22	On steep slopes (greater than 30 percent) or in areas of concentrated flows (e.g., waterways) erosion control matting or riprap may be used to stabilize the surface and increase infiltration times.	•	•	•	•	•	•
SOIL-23	Areas graveled for stabilization will be inspected to ensure depressions caused by vehicle		•	•	•	•	•

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	traffic are filled and runoff is not being directed toward wetlands or other receiving waters.						
SOIL-24	Roughened surfaces should be periodically inspected for rills and washes. Areas exhibiting accelerated erosion will be filled and reseeded as necessary or determined by the BLM or USFS Authorized Officer or his/her designated representative.		•	•	•	•	•
SOIL-25	Construction, operation, and maintenance activities will be restricted when the soil is too wet to adequately support construction or maintenance equipment (i.e., when heavy equipment creates ruts in excess of 4 inches deep, over a distance of 50 feet or more in wet or saturated soils). This standard will not apply in areas with fine-grained soils, which easily form depressions even in dry weather.		•	•	•	•	•
WATER QUALITY							
WET-3	(Described under Streams and Wetlands)						
FISH-1	(Described under Fish)						
SOIL-9, 10, and 12-25	(Described under Soils)						
WQA-1	The appropriate NPDES permits for construction activities that disturb one acre or more of land will be obtained from the Department of Environmental Quality and USEPA or their designees.		•	•	•	•	•
WQA-2	NPDES permit requirements will be met. This includes implementing and maintaining appropriate BMPs for minimizing impacts to surface water.		•	•	•	•	•
WQA-3	One or more responsible persons will be designated to manage stormwater issues, conduct the required stormwater inspections, and maintain the appropriate records to document compliance with the terms of the NPDES permit.		•	•	•	•	•
WQA-4	The SWPPPs will be modified as necessary to account for changing construction conditions.		•	•	•	•	•
WQA-5	The SWPPPs will identify areas with critical erosion conditions that may require special construction activities or additional industry standards to minimize soil erosion.		•	•	•	•	•
WQA-6	Stormwater BMPs will be inspected and maintained on all disturbed lands during construction activities, as described in the SWPPP and appropriate NPDES permit.		•	•	•	•	•
WQA-7	Approved sediment and erosion control BMPs will be installed and maintained until disturbed areas meet final stabilization criteria.		•	•	•	•	•
WQA-8	Temporary BMPs will be used to control erosion and sediment at multi-purpose areas		•	•	•	•	•

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	(equipment storage yards, fly yards, lay down areas) and substations.						
WQA-9	The construction schedule may be modified to minimize construction activities in rain-soaked or muddy conditions.		•	•	•	•	•
WQA-10	Damaged temporary erosion and sediment control structures will be repaired in accordance with the SWPPP and appropriate NPDES permit.		•	•	•	•	•
WQA-11	Upon completion of construction, permanent erosion and sediment BMPs will be installed along the transmission line within the ROW, at substations, and at related facilities in accordance with the SWPPPs and appropriate NPDES permit.		•	•	•	•	•
WQA-12	In areas of droughty soils, the soil surfaces will be mulched and stabilized to minimize wind erosion and to conserve soil moisture in accordance with the SWPPPs.		•		•	•	•
WQA-13	Construction industry standard practices and BMPs will be used for spill prevention and containment.		•		•	•	•
WQA-14	Construction spills will be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.		•		•	•	•
WQA-15	All multi-purpose areas and fly yards will contain fueling areas with containment of a minimum of 110 percent capacity of the largest vehicle to be refueled therein. Fueling of vehicles will take place within the transmission line ROW under the guidance of the ROW grant/special-use authorization. The SPCC plan will specify BMPs.		•		•	•	•
WQA-16	If an upland spill occurs during construction, berms will be constructed with available equipment to physically contain the spill and prevent migration of hazardous materials toward waterways. Absorbent materials will be applied to the spill area. Dry materials will not be cleaned up with water or buried. Contaminated soils and other materials will be excavated and temporarily placed on and covered by plastic sheeting, or suitable containers, in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged in appropriately designated and approved areas off-site.		•		•	•	•
WQA-17	If a spill occurs which is beyond the capability of on-site equipment and personnel, an Emergency Response Contractor will be identified and available to further contain and clean up the spill.		•		•	•	•

Table 4-1. Environmental Protection Measures

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		Application Phase			Applicable to Land Ownership		
EPM Number	Environmental Protection Measures	Design and Engineering	Construction	Operations and Maintenance	Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
WQA-18	For spills in standing water or where spilled materials reach water, floating booms, skimmer pumps, and holding tanks will be used as appropriate by the contractor to recover and contain released materials on the surface of the water. Other actions will be taken, as necessary, to clean up contaminated waters.		•		•	•	•
WQA-19	If pre-existing contamination is encountered during operations, work will be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations will determine the appropriate cleanup method(s) for these areas.		•		•	•	•
WQA-20	The SPCC Plan will include details on the types and quantities of absorbent and protective materials (e.g., visqueen, booms) that must be readily available to construction personnel and requirements for the restocking of materials.		•		•	•	•
WQA-21	Storage of materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes will be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells.		•		•	•	•
WQA-22	Pumps and temporary fuel tanks for the pumps will be stored in secondary containment. Containment will provide a minimum volume equal to 110 percent of the volume of the largest storage vessel located in the yard.		•		•	•	•
WQA-23	Avoid placement of road bed material in channels (perennial, intermittent or ephemeral). Road bed material contains considerable fines that would create sedimentation in coarse cobble dominated stream channels. Even in seasonally dry reaches those fines could be transported during flow periods and negatively impact fish spawning reaches below.	•	•	•	•	•	•
WQA-24	On federal lands, consult with appropriate land management agency staff prior to siting and design for stream crossings (location, alignment, and approach for culvert, drive-through, and ford crossings). This may include a hydrologist, engineer and, for perennial and many intermittent streams, an aquatic biologist.	•			•		
WQA-25	All culverts on NFS lands, both permanent and temporary, shall be designed and installed to meet desired conditions for riparian and aquatic species as identified in the applicable Forest Plan. Culverts should not be hydraulically controlled. Hydraulically controlled culverts create passage problems for aquatic organisms. Culvert slope should not exceed stream gradient and should be designed and implemented (typically by partial burial in the streambed) to maintain streambed material in the culvert.	•	•	•	NFS land only		

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WQA-26	Culvert sizing on NFS lands should also comply with Guidance for Aquatic Species Passage Design, USFS Northern Region & Intermountain Region.	•	•	•	NFS land only		
WQA-27	On non-federal lands, culvert placement should comply with state BMPs.		•	•		•	•
WQA-28	Migration of construction-related sediment to all adjacent surface waterbodies will be prevented.				•	•	•
WQA-29	If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.		•				•
WQA-30	In the event of a spill, cleanup will be immediate. The Construction Contractor will keep spill kits in their vehicles to allow for quick and effective response to spills. Items to be included in the spill kit at a minimum are: • Protective clothing and gloves • Absorptive clay, “kitty litter,” or other commercial absorbents • Plastic bags and a bucket • Shovel • Fiber brush and screw-in handle • Dust pan • Caution tape • Highway flares (use on established roads only) • Detergent		•		•	•	•

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WQA-31	The response to a hazardous material spill will vary with the size and location of the spill, but general procedures include: • CIC and BLM, BOR, or USFS notification • Traffic control • Dressing the cleanup team in protective clothing • Stopping any leaks • Containing spilled material • Cleaning up and removing spilled pesticide and contaminated absorptive material and soil • Transporting spilled pesticide and contaminated material to an authorized disposal site		•		•	•	•
WQA-32	Physical response actions are intended to ensure all spills are immediately and thoroughly contained and cleaned up. However, the first priority in responding to any spill is personal and public safety. Construction personnel will be notified of evacuation procedures to be used in the event of a spill emergency, including evacuation routes. In general, the first person on the scene will: • Attempt to identify the source, composition, and hazard of the spill. • Notify appropriately trained personnel immediately. • Isolate and stop the spill, if possible, and begin cleanup (if it is safe). • Initiate evacuation of the area, if necessary. • Initiate reporting actions.		•	•	•	•	•
WQA-33	Persons should only attempt to cleanup or control a spill if they have received proper training and possess the appropriate protective clothing and cleanup materials. Untrained individuals should notify the appropriate response personnel. In addition to these general measures, persons responding to spills will consult Appendix P – Framework Hazardous Materials Management Plan, Appendix R – Operations, Maintenance, and Emergency Response Plan, and the MSDSs or USDOT Emergency Response Guidebook (to be maintained by the Construction Contractor onsite during all construction activities), which outlines physical response guides for hazardous materials spills.		•	•	•	•	•
WQA-34	In general, expert advice will be sought to properly cleanup major spills. After contaminated soil is recovered, all machinery used will be decontaminated, and recovered soil will be		•	•	•	•	•

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	treated as hazardous waste. Contaminated cleanup materials (absorbent pads, etc.) and vegetation will be disposed of in a similar manner. For spills, cleanup may be verified by sampling and laboratory analysis at the discretion of the Companies.						
WQA-35	If construction activity occurs within a wetland with standing water or a flowing stream, prior to construction, absorbent booms will be placed on the water surface either around or downstream of the construction zone. In addition to this measure, cleanup materials, including absorbent spill pads and plastic bags, will be placed onsite at flowing streams and "wet" wetlands when construction is occurring within 200 feet of these areas (also refer to Appendix F –Framework Stormwater Pollution Prevention Plan).		•	•	•	•	•
WQA-36	Emergency spill response kits will be maintained at all locations where hazardous materials are stored, in sufficient quantities based on the amount of materials stored onsite. Spill response equipment should be compatible with types of materials stored onsite. Spill response equipment should be inventoried regularly to ensure spill response equipment is adequate for the type and quantities of materials being used. The following equipment, are examples of spill response equipment for use in cleanup situations: • Shovels • Absorbent pads/materials • Personal protective gear • Medical first-aid supplies • Bung wrench (nonsparking) • Phone list with emergency contact numbers • Storage containers • Communications equipment		•	•	•	•	•
WQA-37	The Construction Contractor and subcontractors shall provide spill prevention and response training to appropriate construction personnel. Persons accountable for carrying out spill response activities will be designated prior to construction and informed of their specific duties and responsibilities with respect to environmental compliance and hazardous materials. The training shall inform appropriate personnel of site-specific environmental compliance procedures. Training of personnel should be completed at least once a year. All training events should be documented, including the date and names of those personnel in attendance. These records shall be maintained with the SPCC Plan and/or Hazardous		•	•	•	•	•

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	Materials Management Plan. At a minimum, this training shall include the following: • An overview of regulatory requirements • Methods for the safe handling/storage of hazardous materials • Spill prevention procedures • Emergency response procedures • Use of personal protective equipment • Use of spill cleanup equipment • Procedures for coordinating with emergency response teams • Procedures for notifying agencies • Procedures for documenting spills • Identification of sites/areas requiring special treatment, if any						
WQA-38	Notification and documentation procedures for spills that occur during Project construction, operation, or maintenance will conform to applicable federal, state, and local laws and regulations. Adherence to such procedures will be the top priority once initial safety and spill response actions have been taken.		•	•	•	•	•
WQA-39	Notification will begin as soon as possible after discovery of a spill. The individual who discovers the spill will contact the Contractor's supervisory personnel and the CIC. If the Construction Contractor determines the spill may seriously threaten human health or the environment, he/she will orally report the discharge as soon as possible, but no later than 24 hours from the time they become aware of the circumstances, as directed below. A written report must be submitted to Wyoming or Idaho Department of Environmental Quality (DEQ) within 15 days. Prior to initiating notification, the Construction Contractor (or individual initiating notification) should obtain as much information as possible, including: • current threats to human health and safety, include known injuries, if any • spill location, including landmarks and nearest access route • reporter's name and phone number • time spill occurred • type and estimated amount of hazardous materials involved • potential threat to property and environmental resources, especially streams and waterways • status of response actions		•	•	•	•	•

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WQA-40	The following mandatory notifications will be made by the Construction Contractor. These numbers should be documented in the SPCC plan, along with the contact information for the cleanup contractor. Select and notify the appropriate government agencies based on geographic location of the spill site. • Wyoming DEQ (24 hours) at (307) 777-7781. • Idaho Communication Center (24 hours) at (800) 632-8000 or (208) 846-7610. • If spill threatens human health, call 911, and the appropriate county response center. • National Response Center (NRC) (800) 424-8802. The NRC should be notified of a reportable spill as required by 40 CFR 110, 40 CFR 117, and/or 49 CFR 171. The Construction Contractor will verify and update these emergency phone numbers before and during construction. The Construction Contractor (or other person in charge) will notify the CIC of all spills or potential spills within construction areas.		•	•	•	•	•
WQA-41	When a spill poses a direct and immediate threat to health and safety and/or property, the land management agency and landowners potentially affected by a spill will be notified directly by the Construction Contractor. Immediate notification of land management agencies and landowners is required for all situations in which the spill poses a direct and immediate threat to health and safety and/or property. Failure to report a spill could result in substantial penalties and fines.		•	•	•	•	•
WQA-42	The Construction Contractor will maintain records for all spills. State and federal agencies that have been verbally notified of a spill will be informed in writing within 10 days for state agencies and 30 days for federal agencies.		•	•	•	•	•
WQA-43	The Construction Contractor shall record spill information in a daily log. The following is a list of items that should be included in the daily log (as appropriate, based on the spill incident): • time and date of each log entry • name of individual recording log entry • list of all agencies notified, including name of individual notified, time, and date • type and amount of material spill • resources affected by spill • list of response actions taken, including relative success • copies of letters, permits, or other communications received from government		•	•	•	•	•

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	agencies throughout the duration of the spill • copies of all outgoing correspondence related to the spill • photographs of the response effort (and surrounding baseline photographs if relevant)						
WQA-44	During the Project's operation and maintenance phase, the Companies will ensure its facilities, personnel, and contractors comply with federal, state, and local laws and regulations pertaining to the use, storage, transport, and disposal of hazardous materials and adhere to required emergency response and cleanup procedures in the event of a hazardous material spill. The Companies and all operations and maintenance subcontractors shall develop hazardous materials management and response plans and properly train employees for handling, packaging, and shipping hazardous materials and responding to hazardous materials spills or emergency events.			•	•	•	•
WQA-45	Reclaim stream channels/bottoms and wetlands to their approximate preconstruction configuration/contours, unless the original stream bank contours are excessively steep and/or unstable and a more stable final contour can be specified or where permanent stream crossings must be created to maintain access throughout the life of the Project.	•	•	•	•	•	•
WQA-46	Stabilize stream banks, wetlands, and adjacent upland areas by establishing permanent erosion control measures and vegetation cover after the completion of construction (refer to Appendix N – Framework Erosion, Dust Control, and Air Quality Plan and Appendix D – Framework Reclamation Plan).		•	•	•	•	•
WQA-47	Use permanent waterbars, if needed, on slopes above streams or wetland boundaries, on travel routes, and along the ROW to minimize sediment flow from adjacent uplands into the stream or wetland.		•	•	•	•	•
WQA-48	Remove all prefabricated equipment pads, swamp mats, and geotextile fabric used for stream and wetland crossings on completion of construction.		•		•	•	•
LAND USE							
TRANS-5	(See description under Transportation)						
LU-1	Signs shall be posted at access points to access roads where public access is restricted by a land use plan, and on private, state, and Tribal lands at the request of the landowner, agency, or Tribal government. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage shall be maintained and replaced as part of the routine maintenance.			•	•	•	•

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AGRICULTURE							
AGRI-1	Consult with the Farm Service Agency and landowners to determine how construction may affect the CRP status of the land currently enrolled in CRP.	•					•
TRANSPORTATION							
FIRE-6	(See description in Public Safety (Blasting, Fire, Contamination)						
TRANS-1	A Final Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in this attachment. The Final Traffic and Transportation Management Plan will be submitted to, and approved by, the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved prior to the issuance of a Notice to Proceed with construction.	•			•	•	•
TRANS-2	If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.	•	•			•	•
TRANS-3	On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.	•	•			•	•
TRANS-4	To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.	•	•		•	•	•
TRANS-5	Unauthorized vehicles will not be allowed within the construction ROW or along roadsides near the ROW.		•		•	•	•
TRANS-6	Construction vehicles will follow a 25 mph speed limit on unposted project roads.		•		•	•	•
TRANS-7	Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.		•		•	•	•
TRANS-8	Emergency vehicle access to private property will be maintained.		•				•
TRANS-9	Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day, without blocking residential traffic.		•				•
TRANS-10	Roads negatively affected by construction and as identified by the applicable jurisdictional agency and/or landowner will be returned to preconstruction condition. The method of		•		•	•	•

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	preconstruction condition documentation will be coordinated by the Construction Contractor and the applicable jurisdictional agency and/or landowner.						
TRANS-11	Roads developed specifically for this project that are identified by the Companies as no longer necessary will be reclaimed as specified in the Final Reclamation Plan. Culverts will be removed.		•		•	•	•
TRANS-12	The Companies will attempt to identify existing two-track trails as preferred access roads for construction when existing maintained (e.g., gravel or asphalt) roads are not available.	•	•		•	•	•
TRANS-13	Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during the design stage.	•	•	•	•	•	•
TRANS-14	Access roads built for the Project on federal lands shall be closed to the public unless otherwise agreed upon with the land management agency. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage and road closure measures shall be evaluated during routine visits and maintained or replaced as necessary as part of routine maintenance. Access roads constructed solely for use by the Companies will be maintained by the Companies as needed for the Companies' use in accordance with the ROW grants/special use authorization.	•	•	•	•		
TRANS-15	Roads to be abandoned may be left intact through mutual agreement of the land management agency, landowner, the tenant, and the Companies, unless located in flood areas or drainage hazard areas or otherwise restricted by federal, state, or local regulations.	•	•	•	•	•	•
TRANS-16	All temporary culverts and associated fill material will be removed from stream crossings after construction. All permanent culverts will be engineered by the Construction Contractor and approved by the Companies prior to installation.		•		•	•	•
TRANS-17	The road or highway within the ROW corridor shall be used to the maximum extent possible for construction and maintenance of the new ROW.	•	•	•	•	•	•
TRANS-18	To help set public expectations for when temporary access roads are decommissioned, signs shall be posted on all temporary roads and overland access routes identifying them as reclamation areas. Signs will state "Restoration in Progress – No Vehicle Traffic Allowed."		•	•	•	•	
TRANS-19	During wet road conditions, any ruts deeper than 4 inches remaining on the roads from the Project will be repaired.	•	•	•	•		
AIR QUALITY							

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FISH-3	(Described under Fish)						
TESWL-12	(Described under TES-Wildlife)						
SOIL-18 and 19	(Described under Soils)						
AIR-1	Minimize idling time for diesel equipment whenever possible.		•		•	•	•
AIR-2	Ensure that diesel-powered construction equipment is properly tuned and maintained, and shut off when not in direct use.		•		•	•	•
AIR-3	Prohibit engine tampering to increase horsepower.		•		•	•	•
AIR-4	Reduce construction-related trips as feasible for workers and equipment, including trucks.		•		•	•	•
AIR-5	Dust suppression techniques will be applied, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.		•		•	•	•
ELECTRICAL ENVIRONMENT							
EE-1	During final design, limit the conductor surface gradient in order to meet the IEEE Radio Noise Guideline.	•	•			•	•
EE-2	During construction, identify objects such as fences, metal buildings, pipelines, and other metal objects within or near the proposed ROW that have the possibility for induced potentials and currents and implement electrical grounding of these objects according to the utility's and National Electric Code standards.		•		•	•	•
EE-3	During final design and construction, identify areas where large equipment is anticipated and provide sufficient conductor clearance to ground to meet the NESC 5 mA rule or limit size or access of large equipment.	•	•			•	•
PUBLIC SAFETY (Blasting, Fire, Contamination)							
WQA-13 - 20	(Described under Water Quality)						
WEED-24, 25	(Described under Weeds)						
WILD-11	(Described under Wildlife)						
BLA-1	The Blasting Plan will identify blasting procedures including safety, use, storage, and		•		•	•	•

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	transportation of explosives that will be employed where blasting is needed, and will specify the locations of needed blasting.						
BLA-2	All blasting will be performed by registered licensed blasters who will be required to secure all necessary permits and comply with regulatory requirements in connection with the transportation, storage, and use of explosives, and blast vibration limits for nearby structures, utilities, wildlife, and fish (where blasting is conducted in waterbodies).		•		•	•	•
BLA-3	Appropriate flags, barricades, and warning signals will be used to ensure safety during blasting operations. Blast mats will be used when needed to prevent damage and injury from fly rock.		•		•	•	•
BLA-4	Blasting in the vicinity of pipelines will be coordinated with the pipeline operator, and will follow operator-specific procedures, as necessary.		•		•	•	•
BLA-5	Damages that result from blasting will be repaired or the owner fairly compensated.		•		•	•	•
BLA-6	Proper blasting techniques, including proper cover of charges, will be followed.		•		•	•	•
BLA-7	Matting will be used in rock blasting operations to minimize and control dust.		•		•	•	•
BLA-8	Notification of blasting activities will be provided to nearby residents.		•		•	•	•
BLA-9	The Construction Contractor will prepare site specific blasting plans.	•	•		•	•	•
BLA-10	The Blasting Plan for the proposed Project will also stipulate the following: • Explosives will not be stored on federal land without prior written permission from the land-management agency. Copies of this permission will be posted on each magazine. • Seventy-two hours advance notice of blasting activities will be given to the land-management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers. • Warning signs will be erected and maintained at all approaches to the blast areas and flaggers will be stationed on all roadways passing within 1,000 feet of blasting activities. • Explosives will not be primed or fused until just before use. • Blasting will take place during daylight hours only and will be monitored with three axis seismographs to ensure safe vibration levels are not exceeded. • Vibration measured as peak particle velocity will not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground	•	•		•	•	•

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	structure (including water wells).						
FIRE-1	Train all personnel about the measures to take in the event of a fire including; fire dangers, locations of extinguishers and equipment, emergency response, and individual responsibilities for fire prevention and suppression.		•	•	•	•	•
FIRE-2	Equip all construction equipment operating with internal combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with spark arresters. Qualified spark arresters will be in a maintained and nonmodified condition and meet U.S. Department of Agriculture Forest Service Standard 5100-1a, or the Society of Automotive Engineers Recommended Practices J335 or J350. Refer to 43 Code of Federal Regulations §8343.1.		•	•	•	•	•
FIRE-3	Restrict motorized equipment, including worker transportation vehicles, to the designated and approved work limits. Operate all vehicles on designated roads or park in areas where vegetation is less than 8 inches tall. Vehicles, including the undercarriages, will be cleared of vegetation accumulations and checked periodically to ensure no buildup of flammable vegetation.		•	•	•	•	•
FIRE-4	Require all motor vehicles and equipment to carry, and individuals using handheld power equipment to have, specified fire prevention equipment. Carry shovels, water, and fire extinguishers on all equipment and vehicles. Equipment will carry extinguishers rated ABC-10 pound minimum and vehicles will carry ABC-2.5 pound minimum.		•	•	•	•	•
FIRE-5	Provide a list of equipment capable of being adapted to fighting fires to local fire protection agencies.		•	•	•	•	•
FIRE-6	Notify the appropriate fire suppression agencies of scheduled road closures.		•	•	•	•	•
FIRE-7	Prohibit burning of slash, brush, stumps, trash, explosives storage boxes, or other Project-generated debris unless authorized by the applicable land management agency.		•	•	•	•	•
FIRE-8	Designate a Fire Guard on each construction crew prior to the start of construction activities each day and provide a communications system for maintaining contact with fire control agencies.		•	•	•	•	•
FIRE-9	The Companies shall comply with fire restrictions and/or waivers as applicable.		•	•	•	•	•
FIRE-10	If a fire spreads beyond the suppression capability of workers with these tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.		•	•	•	•	•
FIRE-11	Initiate fire suppression actions in the work area to prevent fire spread to or on federally		•	•	•	•	•

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1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	Environmental Protection Measures	Design and Engineering	Construction	Operations and Maintenance	Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9	State Land in Idaho	Private Land in Idaho Segments 4, 5, 7, and 10
	administered lands. If fire ignitions cannot be prevented or contained immediately, or it may be foreseeable to exceed the immediate capability of workers, the operation must be modified or discontinued. No risk of ignition or re-ignition will exist on leaving the operation area.						
FIRE-12	Prior to any operation involving potential sources of fire ignition from vehicles, equipment, or other means, review weather forecasts and potential fire danger. Prevention measures to be taken each workday will be included in the specific job briefing. Consideration for additional mitigation or discontinuing the operation must be given in periods of extreme wind and dryness.		•	•	•	•	•
FIRE-13	Operate welding, grinding, or cutting activities in areas cleared of vegetation within range of the sparks for that particular action. A spark shield adequate for the sparks may be used to prevent sparks from carrying. A spotter equipped with a round-nose shovel and two ABC-rated 5-pound fire extinguishers and a 5-gallon backpack waterpump is required to watch for ignitions during, and one hour after, the activity. Water may be used to wet down surrounding vegetation but does not take the place of an adequately cleared area and spark shield.		•	•	•	•	•
FIRE-14	No smoking will be allowed while operating equipment or while walking or working in areas with vegetation.		•	•	•	•	•
FIRE-15	Smoke only in cleared areas.		•	•	•	•	•
FIRE-16	In areas where smoking is allowed, completely extinguish all burning tobacco and matches and discard them in ash trays, not on the ground.		•	•	•	•	•
FIRE-17	Do not allow any fires or barbecues on the transmission line ROW, at material yards, substations, access roads, or other construction areas.		•	•	•	•	•
FIRE-18	Clear away all flammable material to a minimum of 10 feet, including snags (fallen or standing dead trees) from areas of operation where a spark, fire, or flame could be generated.		•	•	•	•	•
FIRE-19	If a fire does start by accident, take immediate steps to extinguish it (if it is safe to do so) using available fire suppression equipment and techniques taught at field crew emergency response training provided by the Construction Contractor or the Companies.		•	•	•	•	•
CON-1	All construction staff will be trained on the types of contamination that could be encountered and how to respond if contamination is encountered.		•		•		
NOISE							

Table 4-1. Environmental Protection Measures

GATEWAY WEST TRANSMISSION LINE PROJECT

1	2	3-5			6-8		
		Application Phase			Applicable to Land Ownership		
EPM Number	**Environmental Protection Measures**	**Design and Engineering**	**Construction**	**Operations and Maintenance**	**Federal Land and all Land in Wyoming and Idaho Segments 6, 8, and 9**	**State Land in Idaho**	**Private Land in Idaho Segments 4, 5, 7, and 10**
NOISE-1	Identify and provide a public liaison person before, and during, construction to respond to concerns of neighboring receptors, including residents, about construction noise disturbance.		•	•	•	•	•
NOISE-2	Establish a toll-free telephone number for receiving questions or complaints during construction, and develop procedures for responding to callers.		•		•	•	•
NOISE-3	Implement and maintain a noise complaint review process to deal with residents' or other potential queries and complaints as they arise. Such complaints will be logged and investigated on an individual basis to facilitate resolution of the issue of concern.		•		•	•	•

1/ TESWL-3 has been offered by the Companies; however, although the Companies are encouraged to protect all prairie dog towns, formal black-footed ferret surveys within those towns will no longer be required by the BLM.

AGRI – agriculture; AIR – air quality; BLA – blasting; CON – contamination; CR – cultural resources; EE – electrical environment; FIRE – fire; FISH – fish; G – general; GEO – geologic hazards; LU – land use; NOISE – noise; OM – operations and maintenance; PALEO – paleontological resources; REC – reclamation; SOIL – soils; TESPL – threatened, endangered, and sensitive (TES) plants; TESWL – TES wildlife; TRANS – transportation resources; VEG – vegetation; VIS – visual; VR – visual resources; WEED – weeds; WET – streams and wetlands; WILD – wildlife; WQA – water quality

"Note that this is an agency imposed measure." – This statement pertains to EPMs required by the agencies in the FEIS that the Companies believe are not necessary but will implement as agency requirements.

Plan of Development

Gateway West Transmission Line Project

VOLUME II

Prepared by:

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August 15, 2013

“Map Set 1 – *1:36,000 Scale Project Maps - The maps (U.S. Geological Survey 7.5-minute topographic quadrangles, scale of 1:36,000 [1 inch = 3,000 feet]) in Map Set 1 include panels that illustrate the location of facilities at a large scale for the entire Project, including the location of tower sites, pulling and tensioning sites, multipurpose areas, and access routes (including all approved potential ingress and egress points to the ROW). See Example sheet. Final maps will be prepared following final road design.”*

0 6,000
Feet

ROCKY MOUNTAIN POWER

Panel 03 of 09

GENERAL REFERENCE FEATURES

Transmission Line Features
- Centerline
- Proposed ROW
- Proposed Tower Location
- Substation Footprint

Access Roads
- Existing
- Improve Existing
- New
- Existing - Alternative
- Improve Existing - Alternative
- New - Alternative

Page Reference
- Detail Exhibit Index

Work Area Features
- Pulling and Tensioning Site
- Structure Work Area
- Multi-Purpose Yard
- Fly Yard (including refueling site)
- Regen Fiber Path
- Regen Disturbance Area

Administrative Boundaries
- Parcel Boundary
- County Boundary
- BLM Field Office Boundary
- USFS Administrative Boundary

Existing Infrastructure
- Divided Highway
- Major Highway
- Major Road
- Railroad
- Fence (Approx.)
- Stream Crossing
  - Type 1 - Drive through
  - Type 2 - Ford
  - Type 3 - Culvert
- Existing Transmission

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Indian Reservation
- Military
- Forest Service
- National Park Service
- Historic Water
- State
- Private

ROAD DISTURBANCES / RECLAMATION LEVELS

[To be included in NTP POD - additional input required]

ITEMIZED RE

YEAR-ROUND RESTRICTIONS

- Greater Sage-grouse Core Area V3
- Greater Sage-grouse No Surface Occupancy Buffer
- Raptor Nest No Surface Occupancy Buffer
- Bald Eagle Foraging/Concentration Protection Zone
- White-tailed Prairie Dog Colony
- Amphibian/Reptile Avoidance
- Sensitive Area
- Wetland Feature
- Water Quality Protection Area
- Avian Predator Perch Deterr
- Flight Diverter Zone
- Paleontological Monitoring

[1]See Appendix C for exception process and Appendix H for restriction language

Note: Additional spatial and temporal restrictions may be identified as a result of preconstruction surveys

“Map Set 2 – *1:4,800 Scale Project Maps - The maps (map, scale of 1:4,800 [1 inch = 400 feet]) in Map Set 2 include panels that show (1) the ROW in detail, including the specific location of facilities (e.g., structures, multipurpose areas, pulling and tensioning sites, and access roads) and sensitive environmental resource areas in the immediate vicinity; and (2) seasonal constraints that could affect the timing of construction. Each of these detailed panel maps is numbered and shown on an Index Map.” See Example sheet. Final maps will be prepared following final road design.*

0 400
Feet

ROCKY MOUNTAIN POWER

Panel 32 of 116

GENERAL REFERENCE FEATURES

Transmission Line Features
- Centerline
- Proposed ROW
- Proposed Tower Location
- Substation Footprint

Access Roads
- Existing
- Improve Existing
- New
- Existing - Alternative
- Improve Existing - Alternative
- New - Alternative

Work Area Features
- Pulling and Tensioning Site
- Structure Work Area
- Multi-Purpose Yard
- Fly Yard (including refueling site)
- Regen Fiber Path
- Regen Disturbance Area

Administrative Boundaries
- Parcel Boundary
- County Boundary
- BLM Field Office Boundary
- USFS Administrative Boundary

Existing Infrastructure
- Divided Highway
- Major Highway
- Major Road
- Railroad
- Fence (Approx.)
- Stream Crossing
  - Type 1 - Drive through
  - Type 2 - Ford
  - Type 3 - Culvert
- Existing Transmission
- Pipeline (Approx.)

NHD Streams
- Canal Ditch
- Water Pipeline
- Intermittent Stream
- Perennial Stream

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Indian Reservation
- Military
- Forest Service
- National Park Service
- Historic Water
- State
- Private

ROAD DISTURBANCES / RECLAMATION LEVELS

[To be included in NTP POD - additional input required]

ITEMIZED RE

YEAR-ROUND RESTRICTIONS
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