TETRA TECH

September 15, 2008

RE: WYW-174598 and IDI-35849, Gateway West Transmission Line Project

Dear BLM Interdisciplinary Team Member:

At the request of Walter George, BLM National Project Manager, we are pleased to enclose the *Gateway West Transmission Line Project - Siting Study* which Idaho Power and Rocky Mountain Power (the Companies) have submitted to BLM. This report presents the results of the transmission line routing and substation siting analyses completed for the Gateway West Transmission Line Project (Project). The Siting Study is intended to provide the detail necessary to evaluate the alternatives considered by the Companies that served as the basis for selection of the Companies' proposed substation sites and transmission corridors.

Section 3 describes the substation evaluation results for sites where new substations are required for the Project.

Section 4 groups the transmission corridor evaluation results into three categories:

1. Proposed Corridor (Red) – The Companies' proposed corridor;
2. Feasible Alternative Corridor (Green) – Alternative that is feasible but not preferred; or
3. Alternative Corridor Considered, but Not Proposed (Purple) – Alternative considered but not proposed for detailed analysis because it presents no environmental advantages or has substantial constraints.

Each segment is presented separately in Section 4. Section 4.1 lists all alternatives considered and Section 4.2 details the sequence in which information is provided for each Segment.

As required by the Federal Energy Regulatory Commission (FERC) Standards of Conduct, to which the applicants are legally bound, the following reminder applies to all maps contained in the siting study report: "This communication includes non-public Transmission Information. FERC Standards of Conduct 18 CFR 358.5(b)(1) prohibit the disclosure of this protected information. In receiving this information, you are accepting the responsibility to ensure that it is not disclosed."

If you have any questions please feel free to call me at 425.241.0415.

Sincerely yours,

Penny Jennings Eckert, Ph.D.
NEPA Project Lead, Third Party Contractor to BLM

Enclosure: Siting Study

Gateway West Transmission Line Project Siting Study

Prepared by:

and

September 2008

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LIST OF ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BOR	U.S. Bureau of Reclamation
CDC	Conservation Data Center
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
E	East
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EPG	Environmental Planning Group
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FO	(BLM) Field Office
GIS	Geographic Information System
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IRP	Integrated Resource Plan
kV	Kilovolt
LRT	Linear Routing Tool
MW	Megawatt
NAIP	National Agriculture Imagery Program
NCA	National Conservation Area
NED	National Elevation Dataset
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NLCD	National Land Cover Database
NPS	U.S National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
NTTG	Northern Tier Transmission Group
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
OATT	Open Access Transmission Tariff
PUC	Public Utility Commission
RMATS	Rocky Mountain Area Transmission Study
RMP	Resource Management Plan
ROW	Right-of-way
SHPO	State Historic Preservation Office
SR	State Route
SRMA	Special Recreation Management Area
SSG-WI	Seams Steering Group-Western Interconnection
SSURGO	Soil Survey Geographic Database
US	United States
USAF	U.S. Air Force

LIST OF ACRONYMS AND ABBREVIATIONS (Cont.)

USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
W	West
WECC	Western Electricity Coordinating Council
WGFD	Wyoming Game and Fish Department
WHMA	Wildlife Habitat Management Area
WSA	Wilderness Study Area
WWEC	West-Wide Energy Corridor

1.0 INTRODUCTION

1.1 Background and Objectives

This report presents the results of the transmission line routing and substation siting analyses completed by Idaho Power and Rocky Mountain Power (the Companies) for the Gateway West Transmission Line Project (Project).[1] The Companies completed the analyses with input from Bureau of Land Management (BLM), U.S. Forest Service (USFS), other agencies, and other stakeholders. The overall objective of the routing and siting analyses was to develop proposed transmission line corridors/routes and substation sites meeting the requirements of the Project purpose and need, minimizing or avoiding significant environment effects and meeting Project engineering and construction requirements.

1.2 Project Overview

The Companies are proposing to construct and operate approximately 1,148 miles of 230, 345 and 500 kilovolt (kV) electric transmission lines from the proposed Windstar Substation near the existing Dave Johnston Power Plant at Glenrock, Wyoming to the planned Hemingway Substation located approximately 28 miles southwest of Boise, Idaho.

The purpose of and need for the Project is based on the combined requirements of the Companies in the Project study area. Idaho Power is responsible for providing safe and reliable electrical service to its service area, which includes most of southern Idaho and a portion of eastern Oregon. Idaho Power operates under the oversight and regulatory controls of the Idaho and Oregon Public Utility Commissions (PUCs). Rocky Mountain Power is the trade name under which PacifiCorp delivers electricity to customers in the Rocky Mountain Power service area, which includes Utah, Wyoming, and Idaho. The Rocky Mountain Power division of PacifiCorp operates under oversight and regulatory controls of the PUCs of the states of Wyoming, Utah, and Idaho.

Idaho Power and PacifiCorp are public utilities that are also under the jurisdiction of the Federal Energy Regulatory Commission (FERC) and are obligated to expand their transmission systems to provide requested firm transmission service, and to construct and place in-service sufficient capacity to reliably deliver electrical resources to customers.

Since 2001, several regional initiatives have evaluated the cost and benefits of potential transmission additions from Wyoming to load centers in the west. Two specific studies are the Rocky Mountain Area Transmission Study (RMATS) and the Western Electricity Coordinating Council (WECC) Seams Steering Group-Western Interconnection (SSG-WI). These studies show that the combined cost of generation and transmission investments in Wyoming is typically much less than the cost of providing energy from other locations.

A U.S. Department of Energy (DOE 2006) study identified the region from Wyoming to the west as a conditional constrained area, meaning that any incremental resources pursued that are developed in Wyoming would require additional transmission capacity. The DOE study also supports the Gateway West concept by stating:

[1] The Companies submitted a Revised Plan of Development (POD) to the BLM describing the purpose and need for the Project; proposed facilities; operation, maintenance, and abandonment practices; alternative transmission structures considered; and environmental protection measures (August 2008).

> *"This area is rich in coal and wind resources that, if developed, could provide important sources of low-cost energy and fuel diversity while improving domestic energy self-sufficiency and enhancing the economic development in the resource areas. This resource development scenario has been thoroughly explored in analyses sponsored by the Western Governors Association."*

Additional planning studies were performed through the Northern Tier Transmission Group (NTTG 2007) Fast Track Project process. The NTTG is a group of transmission providers and customers that are actively involved in the sale and purchase of transmission capacity of the power grid that delivers electricity to customers in the Northwest and Mountain States. This coordinated regional planning effort indicated a strong need for a series of independent transmission segments, each of which addresses an independent purpose, although all are part of the larger grid.

The Gateway West Transmission Line Project is independent of, and would 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 "hubs," "spokes," and a "backbone" connecting the hubs. Each substation is a "hub" and receives or sends electricity along the "spokes." For this system to work, a "backbone" high-capacity series of 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 including Idaho and Montana), to where it is needed (in this case, mostly Idaho and Utah, though other markets may also be served).

The purpose of and need for the proposed Project provide the foundation for the identification, evaluation, and selection of proposed alternatives and corridors, routes, and substation sites.

1.3 Project Components

The proposed location for the Gateway West Transmission Line Project as described in the POD is based on the results of the siting studies described herein and includes the following major components:

- Approximately 1,148 miles of 230kV, 345kV, and 500kV electric transmission lines;
- Nine substations, the locations of which are shown in **Figure 1-1**, including three proposed new Project-specific substations, four substations that are planned for construction for other projects and that will be expanded for this Project, and two existing substations that will be expanded for this Project; and
- Ancillary facilities such as construction and permanent access roads, temporary construction storage areas, communications, power supply to new substations and other similar facilities.

1.3.1 Substations

The nine substations that are proposed, or will be constructed or expanded, were used to define the Project study area that was evaluated to determine the proposed and alternative corridors for the transmission lines. The substations are listed below.

- Windstar – planned independent of the Gateway West Transmission Line Project, and will be expanded for the Project.

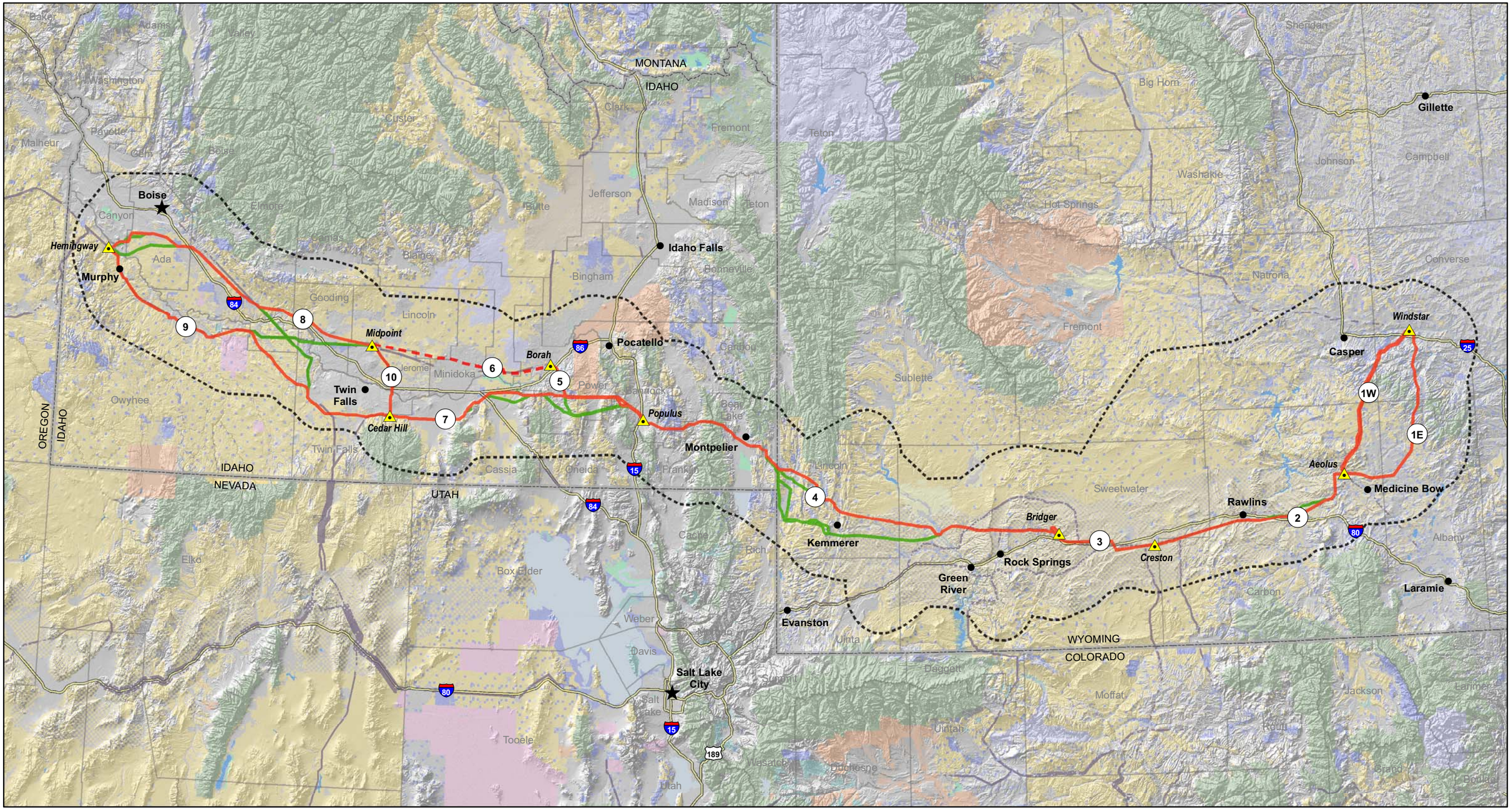
- Aeolus – planned independent of the Gateway West Transmission Line Project, and will be expanded for the Project.
- Creston – proposed as part of the Gateway West Transmission Line Project.
- Jim Bridger 500kV – proposed as part of the Gateway West Transmission Line Project.
- Populus – planned independent of the Gateway West Transmission Line Project, and will be expanded for the Project.
- Borah – existing, and will be expanded for the Gateway West Transmission Line Project.
- Midpoint – existing, and will be expanded for the Gateway West Transmission Line Project.
- Cedar Hill – proposed as part of the Gateway West Transmission Line Project.
- Hemingway – planned independent of the Gateway West Transmission Line Project, and will be expanded for the Project.

1.3.2 Transmission Line Corridor Segments

The locations of the nine substations define the locations of a series of 11 transmission line corridor segments that extend between each of the substations. The proposed transmission line segments are shown on **Figure 1-1**, described in detail in the POD, and summarized below.

- Segment 1 East (E) – Windstar to Aeolus – one single-circuit 230kV line on steel H-frame structures between 60 and 90 feet tall.
- Segment 1 West (W) – Windstar to Aeolus – two new lines, including one single-circuit 230kV line on steel H-frame structures between 60 and 90 feet tall, and one single-circuit 500kV line on single-circuit lattice steel structures between 145 and 180 feet tall, and re-conductoring of the portion of the existing 230kV transmission line between the Dave Johnston Power Plant to Difficulty 230kV line between the plant and the planned location of the Aeolus Substation.
- Segment 2 – Aeolus to Creston – one double-circuit line, designed and constructed to double-circuit 500kV standards but energized at 230kV on one side and 500kV on the other, generally using 500kV double-circuit lattice structures between 160 and 190 feet tall.
- Segment 3 – Creston to Jim Bridger – one double-circuit 230/500kV line, designed and constructed to double-circuit 500kV standards, energized at 230kV on one side and 500kV on the other, using 500kV double-circuit lattice steel structures between 160 and 190 feet tall.
- Segment 4 – Jim Bridger to Populus – one double-circuit 500kV line, with both circuits energized at 500kV, using 500kV double-circuit lattice steel structures between 160 and 190 feet tall.
- Segment 5 – Populus to Borah – one single-circuit 500kV line on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, energized at 500kV.
- Segment 6 – Borah to Midpoint – increase of the voltage on the existing Midpoint to Kinport line from 345kV to 500kV.

- Segment 7 – Populus to Cedar Hill – one single-circuit 500kV line on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, energized at 500kV.
- Segment 8 – Midpoint to Hemingway – one single-circuit 500kV line on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, energized at 500kV.
- Segment 9 – Cedar Hill to Hemingway – one single-circuit 500kV line on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, energized at 500kV.
- Segment 10 – Midpoint to Cedar Hill – one single-circuit 500kV line on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, energized at 500kV.



0 20 40 Miles

Revised 09-11-08

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

IDAHO POWER
An IDACORP Company

Enlarged Area
This Sheet

Project Features
- Approximate Substation Location
- (4) Segment Designation
- Proposed Route
- No New Transmission Facilities Required
- Feasible Alternative Route
- Study Area Boundary
- Draft West-Wide Energy Corridor

Administrative
- City
- County Boundary
- State Boundary

Transportation
- Limited Access Highway

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Department of Energy
- Indian Reservation
- Department of Defense
- US Fish and Wildlife
- State Lands
- US Forest Service
- National Park Service
- Private

Gateway West
Transmission Line Project
Idaho, Wyoming

Project Overview

FIGURE 1-1

2.0 OVERALL SITING APPROACH

The overall approach to substation siting and transmission line routing included the following primary elements:

- Substations were sited first because they are the fixed points with which the proposed transmission lines would connect.
- Transmission line corridors were then routed between the substations in each segment.

A graphic summary of the substation routing and transmission line routing process is presented in **Figure 2-1**. The overall objectives of the substation siting and transmission line routing work for the Project were to:

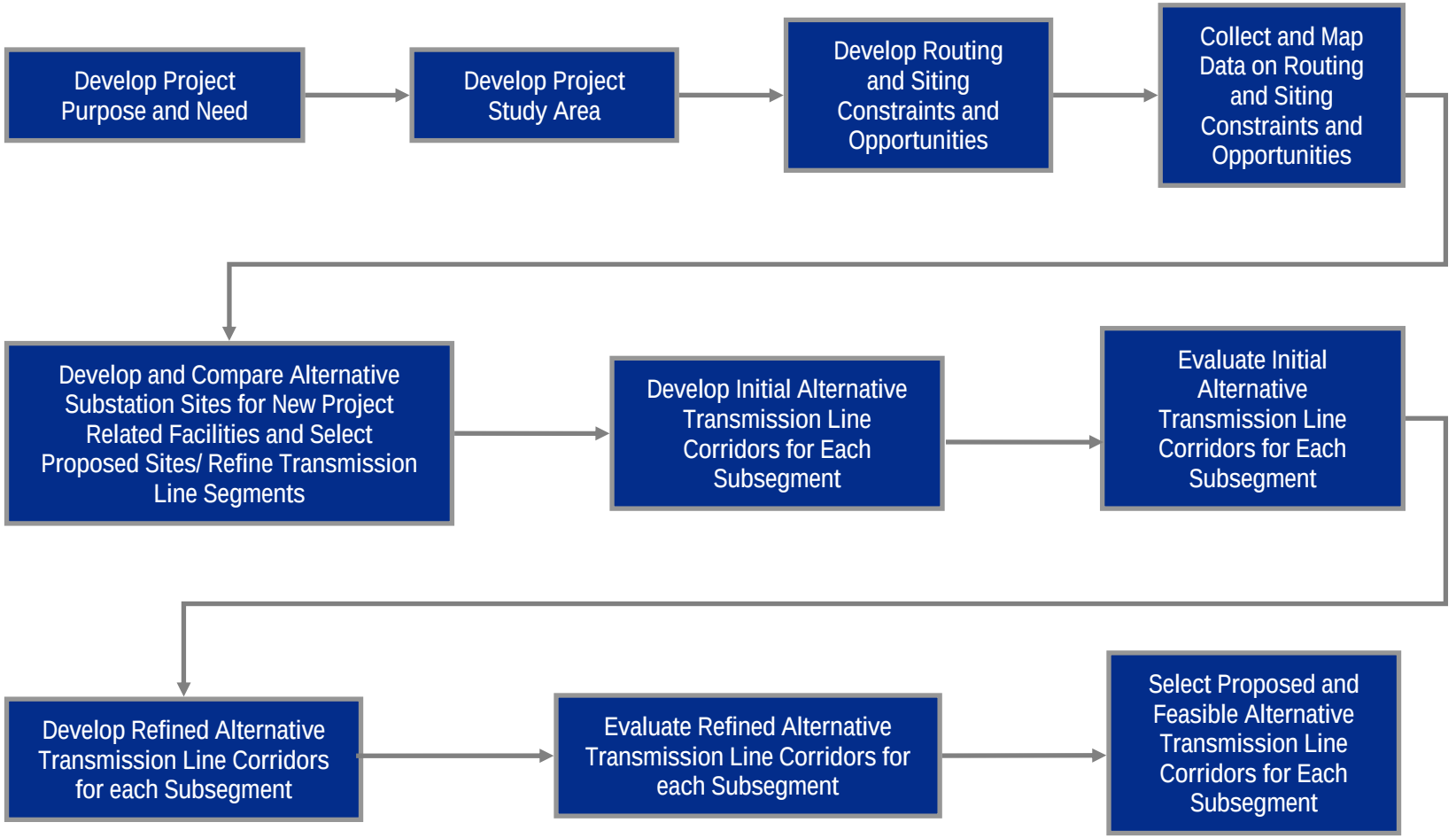
- Examine possible substation sites and transmission line routes that maximized use of siting and routing opportunities and avoided, where possible, areas of significant constraints. Opportunities were generally defined as areas where environmental effects would be relatively low, and constraints were defined as areas where effects would be relatively high.
- Utilize an objective and systematic process to develop and compare alternative sites and routes, and to select the proposed sites and corridors.
- Develop and justify a proposed route that is responsive to the Project purpose and need and minimizes environmental constraints.
- Develop alternatives responsive to the Project purpose and need.

2.1 Substation Siting

As previously noted in Section 1.3, three proposed substations, Creston, Jim Bridger 500kV, and Cedar Hill, are proposed for this Project. The Companies completed a screening-level siting evaluation for these three substations, which is described in more detail in the following sections. The siting evaluation completed for these substations identified and evaluated alternative substation sites located in the vicinity of the existing 230kV transmission line and future load centers near Creston, Jim Bridger Power Plant (for the proposed Jim Bridger 500kV substation), and in the vicinity of the junction of the Populus to Cedar Hill transmission line segment (Segment 7) and the Midpoint to Cedar Hill segment (Segment 10) (for the new Cedar Hill Substation).

The remaining six substations are existing substations that will be expanded as part of this Project or are substations that are planned as part of other projects, will be constructed ahead of Gateway West, and will be expanded for this Project. In the process of evaluating this Project, the Companies reviewed environmental constraints and found no substantial issues regarding the six substation locations.

Figure 2-1. Summary of Substation Siting and Transmission Line Routing Process



2.1.1 Siting Opportunities and Constraints

The siting evaluations completed for the proposed substations were completed using the same categories of siting/routing opportunities and constraints that were used in the transmission line routing analysis, as described in detail in Section 2.2.1.

2.1.2 Data Sources

The data sources used to complete the siting evaluation for the Creston, Jim Bridger 500kV and Cedar Hill Substations were the same sources that are described in detail in Section 2.2.2.

2.2 Transmission Line Siting

The overall approach to the transmission line siting included identifying routing opportunities and constraints in the Project study area and using this information to identify, evaluate, and compare alternative corridors for each of the 11 segments and select a proposed corridor and, in some cases, recommended alternative corridors for each segment. This approach, illustrated in **Figure 2-1**, was implemented by completing the following specific tasks:

- Definition of the Project study area, based on the location of each substation;
- Definition of routing opportunities and constraints;
- Collection and mapping of existing information in the Project study area for each category of routing opportunity and constraint;
- Identification and evaluation of alternative substation sites to select proposed sites;
- Identification of initial alternate transmission line corridors for segment and subsegment;
- Collection of routing constraint and opportunity information and focused field reconnaissance in key selected areas;
- Completion of initial agency consultation and consultation with other stakeholders involved in the Project to identify potential issues and concerns regarding transmission line routing and other Project activities;
- Use of this information to develop and refine alternative corridors in each segment and subsegment;
- Evaluation and comparison of alternative corridors in each segment and subsegment; and
- Selection of the proposed corridor and recommended alternative corridors for each segment.

The location of the Project study area is shown in **Figure 1-1** found at the end of this section. The Project study area was defined as an area sufficiently large to allow the selection of proposed and alternate corridors.

The approach to developing routing opportunities and constraints is described in detail in Section 2.2.1. Data sources and mapping are described in detail in Sections 2.2.2, 2.2.3, and 2.2.5. Initial agency consultation and stakeholder involvement are described in Section 2.2.4. The field reconnaissance is described in Section 2.2.7.

Two general approaches were used to identify and evaluate alternative corridors and select the proposed and recommended alternative corridors for each segment.

1. In proposed and established utility corridors such as the Section 368 Energy Act Draft West-Wide Energy Corridor (WWEC et al. 2007), or BLM and USFS designated utility corridors, and/or where existing transmission lines exist, analyses were completed to characterize the resources present in the areas crossed by the corridors, and to determine if use of such corridors would result in significant environmental effects[2]. A combination of constraint mapping, stakeholder input, and field reconnaissance was used to confirm the use of existing or planned corridors. In several cases, new routes deviating away from the existing or planned corridors were proposed because of adjacent environmental constraints such as leks, raptor nests, oil and gas wells, etc.
2. Where no existing or planned corridors existed, a "greenfield"[3] siting approach was followed. In those cases, the Linear Routing Tool (LRT, described in detail in Section 2.2.5) was used to identify initial corridors for further evaluation. Refinements of corridors identified by the LRT were made after reviewing aerial photography and topographic maps, or on the basis of important input received from stakeholders, field reconnaissance, and other sources.

2.2.1 Routing Opportunities and Constraints

Alternative transmission line corridors were developed and evaluated considering both routing constraints and opportunities. Constraints are defined as resources or conditions that potentially limit transmission line routing because they are relatively sensitive to facility construction or operation. Opportunities are defined as resources or conditions that can accommodate facility construction or operation because of their characteristics.

2.2.2 Data Sources

The BLM, USFS, Wyoming Game and Fish Department (WGFD) and Idaho Department of Fish and Game (IDFG) were key sources of Geographic Information System (GIS) information for biological resources input into the constraints and opportunities database for LRT use. A list of requested data layers was submitted to the BLM and USFS, and the requested information was collected in meetings with BLM Field Offices and USFS offices in the Project study area. The full list of data sources is presented in **Table 2-1**.

Table 2-1. Analysis Attributes and Data Sources

Attribute	Source
EXISTING OR PROPOSED LINEAR CORRIDORS	
Draft WWEC corridors	DOE
BLM or USFS utility corridors	BLM, USFS
Existing transmission lines 230kV and higher	Companies, Platts

[2] In order to achieve the capacity rating needed to serve present and future loads within the Companies' service area, the WECC requires a minimum separation from existing transmission lines that serve substantially the same load as that served by each of the new Gateway West transmission segments. As described in the POD, that minimum separation depends on the purpose of the existing line, the load it now serves, and the remaining capacity of the rest of the grid to absorb the load if the several co-located lines fail at once. For the purposes of the initial siting study, the longest span was assumed to be 1,500 feet, thereby dictating the minimum distance between existing and proposed transmission lines serving the same load.

[3] "Greenfield" is defined herein to mean a geographic area where no transmission electric lines or other linear infrastructure such as major roads or pipelines, etc. oriented in the same direction of the proposed transmission line exist.

Table 2-1. Analysis Attributes and Data Sources	
Attribute	**Source**
Large capacity pipelines	Penwell
Large roads and highways	Streetmap
Railroads	Streetmap
LAND USE AND OWNERSHIP	
USFWS National Wildlife Refuges (NWR)	BLM National Atlas and USFWS
National Parks	BLM National Atlas
National Monuments	BLM National Atlas
BLM Areas of Critical Environmental Concern (ACECs)	BLM Field Offices
Wilderness Study Areas (WSA) and Designated Wilderness Areas	BLM Field Offices
Current and Former Department of Defense (DOD) lands	BLM National Atlas
State Parks	States of Wyoming and Idaho
USFS lands	BLM National Atlas
Bureau of Indian Affairs (BIA) reservations	BLM National Atlas
Irrigated agriculture	U.S. Environmental Protection Agency (EPA) National Land Cover Database (NLCD)
Grazing lease areas and areas where grazing is prohibited	NLCD
Airports and clear zones	Streetmap
Designated recreation areas	BLM National Atlas, Streetmap, States of Wyoming and Idaho
Undeveloped recreation areas	BLM National Atlas, Streetmap, States of Wyoming and Idaho
Wild and Scenic Rivers	NPS, State of Idaho Parks and Recreation
Residential, cities, towns	NLCD, Streetmap
Active mining	BLM Field Offices, National Agriculture Imagery Program (NAIP) aerial photography
Oil and gas fields	BLM Field Offices
Oil and gas well heads with 250-foot no occupancy buffer	State of Wyoming, NAIP aerial photography
Oil and gas leasing (potential development)	BLM Field Offices
Controlled and No Surface Occupancy (NSO) Areas	BLM Field Offices
SOILS, TOPOGRAPHY, GEOLOGY, MINERALS, AND PALEONTOLOGY	
Prime and unique farmland	U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO)
Highly erodible soils or soils with very low revegetation potential	SSURGO
Slopes >15%	U.S. Geological Survey (USGS) National Elevation Dataset (NED) 10 meter elevation data
Slope instability	Federal Emergency Management Agency (FEMA) HAZUS
Faults/seismicity	USGS
Paleontological formation outcroppings (e.g., Green River Formation and Glens Ferry Formation)	BLM Field Offices

Table 2-1. Analysis Attributes and Data Sources	
Attribute	**Source**
WATER RESOURCES	
Streams, springs, seeps	USGS National Hydrography Dataset (NHD)
Impaired/303(d) streams	Idaho Department of Environmental Quality (IDEQ)
Floodplains	FEMA
Lakes and reservoirs	NHD
WETLAND RESOURCES	
National Wetlands Inventory (NWI)	USFWS
State designated wetlands	States of Idaho and Wyoming
SPECIAL STATUS SPECIES	
Designated critical habitat	BLM Field Offices, USFS,USFWS
Other important habitat for federal and state special status species	BLM Field Offices, USFS, States of Idaho and Wyoming
Fisheries streams	BLM Field Offices, USFS
Sage grouse wintering concentration areas	BLM Field Offices, USFS
Sage grouse core areas (conservation of breeding and nesting habitat)	State of Wyoming
Sage grouse lek 0.25-mile radius NSO	BLM
Sage grouse lek 0.65-mile radius seasonal restriction	BLM
Sharp-tailed grouse lek/habitat	BLM Field Offices, USFS
Big game wintering and fawning areas	BLM Field Offices, USFS
Raptor winter habitats	BLM Field Offices, USFS
Raptor nests 0.50-mile buffer seasonal restriction	BLM Field Offices
Wild Horse and Burro Herd Management Areas	BLM Field Offices, USFS
White-tailed prairie dog towns	BLM Field Offices, USFS
Black-footed ferret non-block-cleared areas	BLM Field Offices
CULTURAL RESOURCES	
National Register of Historic Places (NRHP) listed or eligible sites	Wyoming and Idaho State Historic Preservation Offices (SHPOs), U.S. National Park Service (NPS)
National Historic Districts	**NHRP, Wyoming and Idaho SHPOs**
National Historic Trails and interpretive areas (0.5 mile buffer)	States of Wyoming and Idaho
Other historic trails (state-recognized) (0.5 mile buffer)	States of Wyoming and Idaho
Historic Landscapes and National Natural Landmarks	BLM Field Offices
VISUAL RESOURCES	
BLM Visual Resource Management (VRM) Class I (Requires a RMP amendment)	BLM Field Offices
BLM VRM Class II (Requires a RMP amendment)	BLM Field Offices
BLM VRM Class III	BLM Field Offices
Scenic overlooks (2.0 mile buffer)	BLM Field Offices, USFS
Scenic highways	BLM Field Offices, USFS
Federal designated scenic areas	BLM Field Offices, USFS

Table 2-1. Analysis Attributes and Data Sources	
Attribute	**Source**
USFS Retention Areas	USFS
Other designated	Existing literature

2.2.3 Sage Grouse Siting Attributes

While the greater sage-grouse is not yet listed by the USFWS, it has received, and will continue to receive a great deal of attention from state fish and game agencies, the BLM, and from concerned groups and members of the public, as its population has declined dramatically over the last 50 years with reduction in habitat.

The routing and siting process began as a data collecting activity to help identify opportunities and constraints in selecting a proposed corridor between fixed points such as substation locations. In January 2008, Company representatives put out a data call to agencies and specific individuals for GIS data as it relates to greater sage-grouse. The most common data describer received was lek location and the most common original data source was state game and fish management agencies, often amended or supplemented by additional local data and redistributed by the BLM state, district, or field offices. In the Casper, Rock Springs, Rawlins, Kemmerer, Pocatello, Burley and Shoshone field offices, resource specialists felt existing data was not adequate and requested additional field surveys. The Companies conducted nearly 300 miles of surveys within the aforementioned field offices and identified one potential new lek location.

The data set used for greater sage-grouse leks included leks that were active, those that had not been used for a number of years, and leks known to be abandoned or "historic". Rather than attempt to sort the data set for active or recently active leks, all known leks, including those known to be abandoned, were equally buffered and avoided during the routing process.

To quantitatively apply a value to the type of constraint a greater sage-grouse lek might impose on a transmission line, the most restrictive environmental protection measure found across the project area was applied to the entire Project route. At the time, the most restrictive measure was a 0.25 mile no surface occupancy (NSO) from the center of a lek. In other words, no land surface development or aerial encroachment could occur within 0.25 miles of the center of a lek. This buffer was applied to all mapped leks within the study areas and the Project was routed to avoid the buffered areas.

During the several months of the routing and siting process, the BLM staff indicated that there could be an increase in buffer size on Wyoming BLM lands to 0.65 miles. Therefore, an additional 0.65 mile radius buffer was added, and the routing made every attempt to avoid the larger area, but did encroach on it in a few areas where it was unavoidable given other constraints.

During this same timeframe, the State of Wyoming created a Governor's Sage-grouse Implementation Team, which developed a core population area strategy to consolidate the various efforts across the state to conserve the species. On August 1, 2008 the Governor of Wyoming issued Executive Order (EO) 2008-2 entitled "Greater sage-grouse Core Area Protection. The EO identifies 12 key objectives to the management of greater sage-grouse and the protection of its habitat. These objectives call for more restrictive measures when affecting

habitat or the species within the core areas and encourage development outside the core areas. The most restrictive objective indicates that when development must occur within the core areas, is should only be authorized by the state agency when it demonstrates it will not cause declines in greater sage-grouse populations.

The 2006 Conservation Plan for the Greater Sage-grouse in Idaho includes plans that have been developed by Local Working Groups (LWGs). The LWGs are made up of citizens, industry and agency staff working together for the good of the species. The LWGs and their plans drive the greater sage-grouse conservation strategy for the State of Idaho. The LWG plans identify and prioritize local threats and identify conservation measures at the mid and fine scale while the Plan identifies and prioritizes threats at a broad scale.

Specific Siting Attributes

The proposed and feasible alternate corridors presented herein all avoid, without exception, the 0.25 mile radius buffer on all mapped leks. In general, the proposed and alternate routes also avoid the 0.65-mile lek buffer but there are a few instances where full avoidance was not practicable. When located in Wyoming Core Areas, they follow existing corridors to the extent possible.

2.2.4 Initial Agency Consultation and Stakeholder Input

2.2.4.1 Federal Agencies

The Companies held, or participated in, a series of Project kickoff meetings that included both state BLM offices (Wyoming and Idaho), the Idaho District offices (Boise, Twin Falls, and Idaho Falls), and each of the 11 BLM Field Offices (FO) involved in the Project, two USFS National Forest Districts, two NPS National Monuments and two National Wildlife Refuges that occur within the Project study area, including:

- BLM Four Rivers FO, including the Snake River Birds of Prey National Conservation Area (NCA);
- BLM Owyhee FO;
- BLM Burley FO;
- BLM Bruneau FO;
- BLM Jarbidge FO;
- BLM Shoshone FO;
- BLM Pocatello FO;
- BLM Kemmerer FO;
- BLM Rock Springs FO;
- BLM Rawlins FO;
- BLM Casper FO;
- USFS Caribou-Targhee National Forest (including Cache);
- USFS Medicine Bow National Forest;
- NPS, Fossil Butte National Monument and Hagerman Fossil Beds National Monument;

- NPS, Trails Office;
- U.S. Air Force (USAF) Mountain Home Air Force Base, Saylor Creek Bombing Range; and
- USFWS – Cokeville Meadow and Seedskadee National Wildlife Refuges (NWR).

The purpose of the Project kickoff meetings was to provide an overview of the proposed Project, including a (1) review of current proposed and alternative corridors and the planned capacity and design of each of the 11 proposed segments, (2) the distinction between the BLM's (as the lead federal agency) and Companies' (as the Applicant) purpose and need, (3) discussion of factors (including required right-of-way [ROW] width) that affect the Applicants' reliability rating, and (4) a discussion of the environmental impact statement (EIS) for the Project.

At Project meetings, the Companys' representatives also demonstrated the LRT used to support preliminary corridor selection and evaluation. The agencies and Companies discussed potential resource conflicts with preliminary alternative corridors, and the spatial resource data available in each BLM FO and USFS District. In the weeks following the kickoff meetings, the agencies provided the available resource data to Company representatives for use in the routing study, as described in Section 2.2.2.

In addition, Company representatives contacted the USFWS Seedskadee NWR near Green River, Wyoming; Cokeville Meadows NWR, near Cokeville, Idaho; and Fossil Butte National Monument (FBNM) to begin discussion of potential resource conflicts with the preliminary proposed corridors and alternative corridors recommended by BLM or USFS. Resource information provided by Seedskadee NWR was used to develop an alternative corridor south of the Refuge. On July 10, 2008, the Companies facilitated a work session between representatives of Cokeville Meadows NWR; BLM Kemmerer Field Office; FBNM; and various state, county, and local officials to discuss proposed and alternative corridors presented by the Companies during Project scoping.

The Companies met with USFS Caribou-Targhee National Forest representatives to discuss specific transmission alignments in proximity to the designated utility corridor across the Cache National Forest. The Companies met with representatives of the BLM Birds of Prey NCA and USAF Saylor Creek Bombing Range to propose a specific alignment that would minimize effects on Bruneau Dunes State Park. The Companies also met with representatives of the Pocatello FO to identify and evaluate alternative corridor crossings of the Deep Creek Mountains.

2.2.4.2 State Agencies

In January 2008, Company representatives met with the Habitat Protection Program Supervisor for the WGFD Office of the Director. The purpose of the meeting was to discuss the preliminary planning stage of the Project, data availability from WGFD, and anticipated schedule for the EIS. Points of discussion during this meeting included:

- The current alternative corridors for the Project and ongoing corridor planning based upon resource considerations;
- The anticipated Project NEPA and permitting schedule, including alternative corridor development in February 2008, and anticipated scoping in March/April 2008;

- The need to collect relevant resource information from WGFD to assist with alternative corridor development and EIS preparation; and
- General resource concerns associated with big game wildlife habitat, especially winter range for antelope and mule deer, sage grouse leks and brood rearing areas, and raptor nest locations.

Meetings were also held with representatives of IDFG's Magic Valley, Southwest, and Southeast Regional offices to discuss the preliminary planning stage of the Project, data availability from IDFG, and the anticipated schedule for EIS preparation. Regional concerns were also discussed, including lack of an IDFG raptor nest database; annual bald eagle surveys conducted on portions of the Snake River; and information available but not in the Idaho Conservation Data Center (CDC) data, including sage and sharp-tailed grouse, pygmy rabbit, and big game winter range polygons from each region. Selected sage grouse leks are monitored for population trends but current surveys of grouse leks are not completed.

Subsequent to the meetings with the regional field offices, the state coordinator for IDFG, was contacted to discuss the Project. Resources that were indicated as being important for alternative corridor development but for which data are incomplete included sage grouse leks, sage grouse habitats, and big game winter range.

A meeting with the Idaho Department of Parks and Recreation, Bruneau Dunes State Park was held in order to discuss issues related to transmission line corridor routing in the area of the State Park.

2.2.4.3 Counties and Cities

The Companies notified representatives of County planning departments of all of the counties affected by the Project. This included the following counties:

- Albany
- Carbon
- Converse
- Lincoln
- Natrona
- Sweetwater
- Ada
- Bannock
- Bear Lake
- Blaine
- Canyon
- Caribou
- Cassia
- Elmore
- Franklin
- Gooding
- Jerome
- Minidoka
- Oneida
- Power
- Twin Falls

Each meeting was supported by a map showing potential corridors. Information was solicited by obtaining responses to a standard set of questions. These included:

- Is construction of the proposed transmission lines consistent with current County planning requirements?
- Is one of the alternative corridors on the map preferred by the County?
- Describe the land use near the proposed transmission lines.
- Is electronic map coverage available from the County?
- What county permits are necessary?
- Are there known unusual geologic features located in the Project study area (unstable slopes, faults, erodible or collapsing soils, shallow bedrock, etc.)?
- Are there known archaeological features in the Project study area?
- Are there other local groups in the County that may be interested in the Project?
- What questions does the County have?

2.2.4.4 Other Groups

During the routing study and scoping period, the Companies met with the following stakeholders in the Project study area that might be affected by the Project to discuss the portions of the preliminary proposed and alternative corridors and potential resource concerns in relation to corridor routing:

- Chevron Mining, near Kemmerer, Wyoming – After a review of the mining areas and discussion of the mining activities, a corridor was selected that would minimize effects to mine operations considering their largest pieces of equipment.
- OCI Wyoming, L.P. trona mine near Little America, Wyoming – Discussed possible concerns involving mine subsidence in relation to corridor routing.
- FMC Wyoming Corporation trona mine near Little America, Wyoming – Discussed possible concerns involving mine subsidence in relation to corridor routing.
- Various stakeholders in Kemmerer, Wyoming – Discussed concerns regarding the Cokeville NWR, sage grouse, big game wintering and parturition areas, critical viewsheds, and historic trails.
- Representatives of Saylor Creek Bombing Range to discuss height restrictions north of the bombing range.
- Wyoming Historic Trails and Oregon California Trails Association to better understand the importance of trail segments located in the BLM Kemmerer Filed office.

2.2.5 Geographic Information System

The routing process used GIS (ArcGIS) extensively to consider large data sets for environmental constraints and opportunities. It allowed the team to quickly visualize and analyze various alternatives, and provided a means to present the results to agencies, the Companies, and other involved groups.

2.2.5.1 Data Management and Preparation

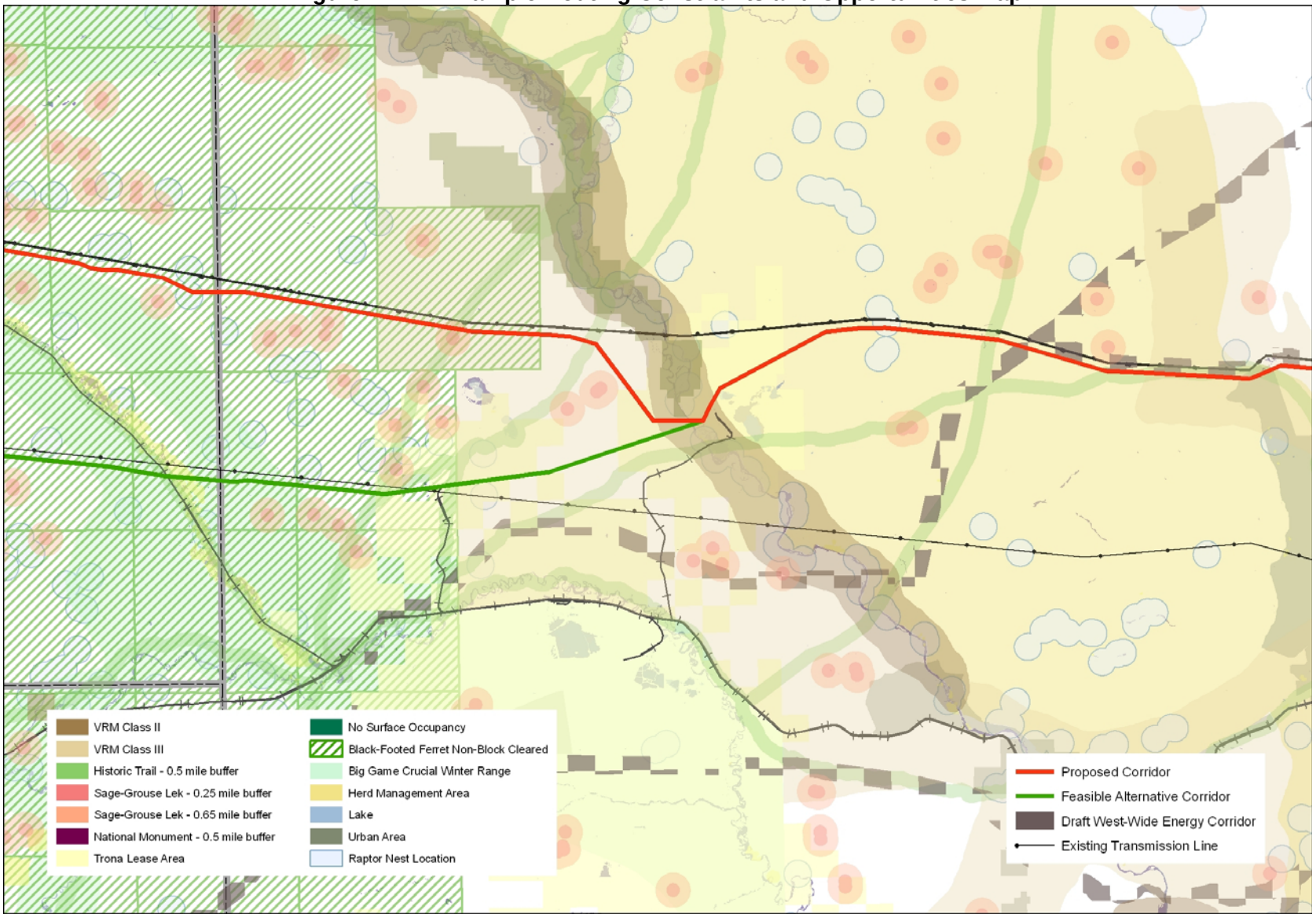
The data used in routing were collected from various sources and subjected to a rigorous process of analysis and preparation before being used in the Linear Routing Rool (see Section

2.2.6). All of the preparation involved GIS processes beginning with the addition of data that were collected from external sources to a central GIS. GIS tools were then used to evaluate data quality and usefulness for Project purposes. If the data were useable, buffer areas were added to the polygons, as necessary, based on the characteristics of the feature. All the resulting fully prepared shape files and results of the routing were stored in ArcGIS shape file formats in the central GIS.

2.2.5.2 Mapping

GIS mapping was used to interpret the results and display the alternative corridors, constraints, and opportunities. **Figure 2-2** presents an example routing constraints and opportunities map for a corridor located in a sample section of the Project study area.

Figure 2-2. Example Routing Constraints and Opportunities Map



2.2.5.3 Corridor Analysis

The most significant tool used for routing was the LRT, described below in detail in Section 2.2.6. This tool comprises software that runs in the GIS, with inputs and results that are tied directly to a central GIS. After the initial phase of routing was completed using the LRT, the resulting corridors were refined by overlaying the constraints and opportunities with aerial photography and topographic maps (1:24,000 USGS maps). GIS software was used in this process to evaluate constraints and opportunities, and to determine where the corridor intersected each individual constraint or opportunity. The corridors were then further evaluated by overlaying them on the most current aerial photography available. This provided a review of the conditions on the ground that was not captured in the constraints data, such as individual homes, active mining, and other similar features. The corridors were then evaluated on topographic maps to consider slopes and terrain crossed by the corridors. With this information, modifications to the corridors were then made with the GIS editing tools and re-evaluated with the same process, eventually resulting in detailed corridor routing.

2.2.6 Linear Routing Tool

The LRT is a software tool that runs in GIS and is used to determine the shortest corridor with the fewest environmental constraints, or cost, between two points. Although corridors that were developed in the routing phase of this Project using the LRT were refined using other tools, such as aerial photography, USGS topological maps, and the expertise and experience of Project team members, the results that came directly from the tool were very useful in providing an initial determination of the low-cost corridors.

To the extent practicable, use of the LRT provided a better understanding of the characteristics of the areas crossed by the Project. For example, the analysis of the alternative corridors characterized specific areas where multiple constraints combined together to form an especially challenging area for routing. These areas were then identified as needing further study, and in some instances, more extensive consultation with stakeholders in those areas.

Use of the tool also provided better documentation of the routing process and a way of comparing statistically different corridors from the same starting points to the same ending points. Using the strategy described below, the weights were modified for selected attributes (routing constraints and opportunities) and the tool was re-run from the same starting and ending points. Each of the corridors was then compared with detailed information about the instances and distance each corridor crossed environmental constraints to determine which one best met Project needs.

The first step in using the LRT was to assign relative weights to each of the constraints and opportunities (attributes) that were used in the tool. **Table 2-1** lists the attributes/routing constraints and opportunities, and the data sources used to develop attribute values. Each attribute was assigned a weight ranging from -5 (most negative or adverse) to +5 (most positive or beneficial). An additional weighting of -999 was used for attributes that are absolute exclusion areas that could not be crossed under any circumstances because of regulatory, environmental, or engineering requirements. **Table 2-2** presents the definitions of each weighting class. The weights were determined based on the experience and expertise of the Companies, BLM staff, and other stakeholders involved in the Project.

In selected geographic areas, the overall weightings for certain attributes described in **Table 2-1** were modified to take stakeholder input, specific local characteristics, issues, and requirements into account.

Table 2-2. Definitions of Weightings

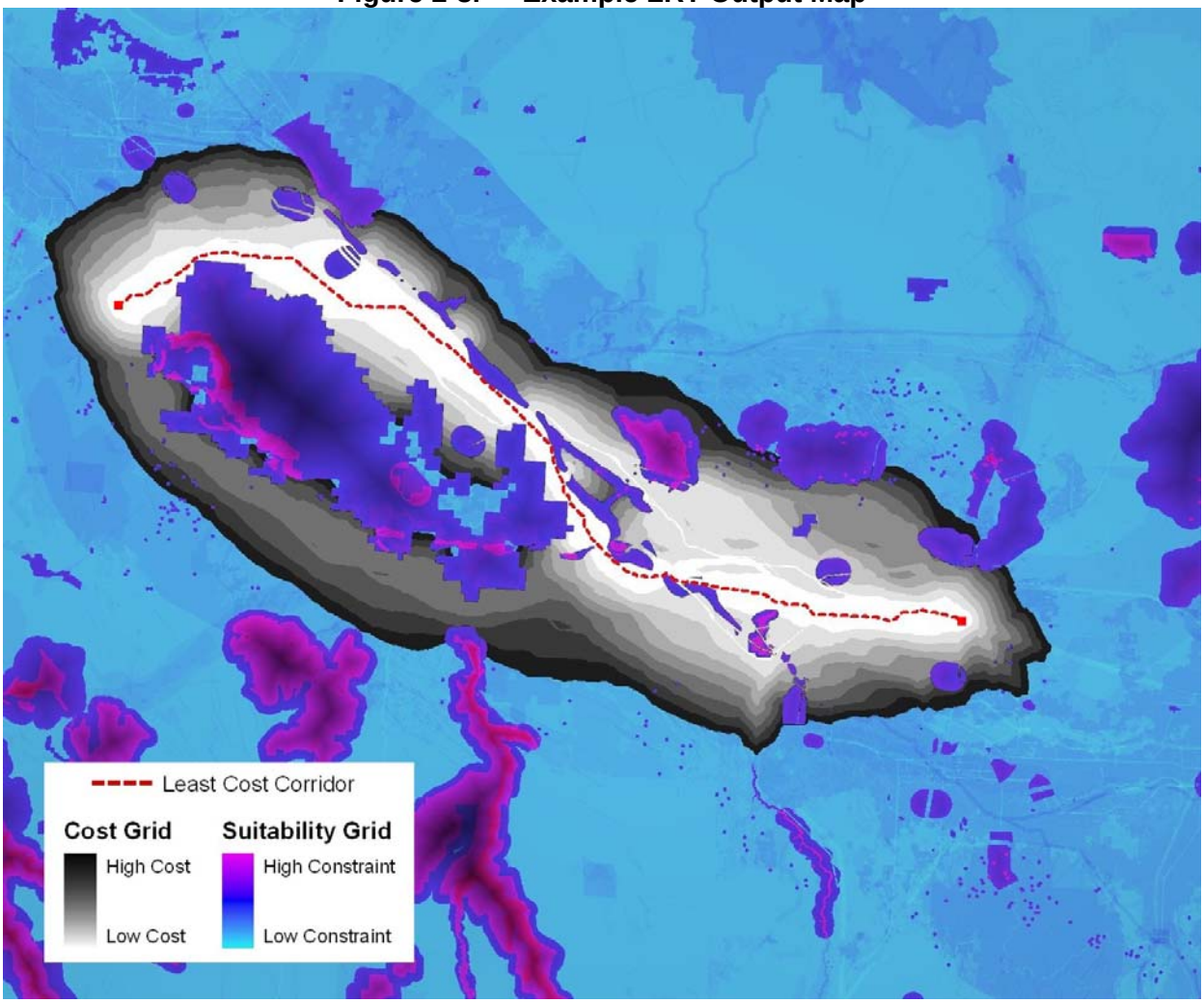
Weighting	Definition
Constraints	
-999	Exclusion areas that can not be crossed under any circumstances because of regulatory or engineering requirements.
-5	Very high impact (duration, magnitude). Very difficult or impossible to mitigate (due to technology, sensitivity of resource, or cost of mitigation).
-4	High impact. Mitigation would be successful but would require a long time, be difficult to implement, or be very costly.
-3	Moderate impact; would not likely result in significant adverse impact. Mitigation, if necessary, would be fairly easy to implement.
-2	Low impact. Mitigation, if necessary, would be very easy to implement.
-1	Very low impact. No mitigation required.
Neutral	
0	No impact or impact not a concern.
Opportunities	
+1	Following existing facility or planning corridor would reduce impacts and mitigation requirements, and facilitate permitting to a very minor extent.
+2	Following existing facility or planning corridor would reduce impacts and mitigation requirements, and facilitate permitting to a fairly minor extent.
+3	Following existing facility or planning corridor would reduce impacts and mitigation requirements, and facilitate permitting to a moderate extent.
+4	Following existing facility or planning corridor would reduce impacts and mitigation requirements, and facilitate permitting to a large extent.
+5	Following existing facility or planning corridor would reduce impacts and mitigation requirements, and facilitate permitting to a very large extent.

The LRT produced two major types of graphic output for the routing study, including the collective "density" of routing constraints and opportunities in a given location, and the preferred route generated by the LRT in a given area (an example of this type of map is shown in **Figure 2-3**).

2.2.7 Field Reconnaissance

Various sections of selected corridors were reviewed in the field to answer questions, collect additional information, verify existing conditions, and identify changed conditions. For instance, the alternative corridor north of Montpelier, Idaho; segments of the proposed corridor west of Cache National Forest in Idaho and west of Kemmerer, Wyoming; portions of the corridors south of Boise, Idaho; and portions of the corridors west of the Populus Substation in Idaho were refined based on field reconnaissance.

Figure 2-3. Example LRT Output Map



3.0 SUBSTATION SITING EVALUATION AND CONCLUSIONS

As noted in Section 1.3, this Project includes construction of the Creston, Jim Bridger 500kV, and Cedar Hill Substations. The following sections describe the siting of these three new substations.

3.1.1 Creston

This substation will be used to serve load (oil and gas) south of Wamsutter, Wyoming and will utilize the proposed Aeolus – Creston – Jim Bridger 230kV and 500kV lines. The new Gateway West 230kV transmission lines from Aeolus Substation to the Jim Bridger Substation (Segments 2 and 3) will be terminated within the new Creston Substation fenced area. Line terminals for additional 230kV line bays will be added to terminate additional 230kV lines as required to serve PacifiCorp's electrical load in the Creston area. Approximately 13 acres will be developed within the fenced area of the Creston Substation site to accommodate the required line terminations and associated equipment. A control house will be constructed within the fenced area to accommodate the necessary system communications and control equipment. A new gravel access road will be constructed to the site from the existing road.

In the vicinity of the oil and gas load, the companies considered the area east and west of Wamsutter Crooks Gap Road and south of the existing 230kV line, just west of the Carbon County/Sweetwater County line for the proposed Creston Substation. In this area are localized constraints including large wetland areas, numerous pipelines and active oil and gas wells. As shown on **Figure 3-1**, the east side of Wamsutter Crooks Gap Road was chosen because the proposed substation can be located adjacent to the road and the existing transmission line and avoid the wetlands, oil and gas wells, and pipelines. There appear to be no constraints that prohibit construction of the proposed substation at this location.

3.1.2 Bridger 500kV

The new transmission lines will interconnect to the existing transmission system in the vicinity of the Jim Bridger Power Plant by constructing a new substation nearby. The purpose of the new 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. The Jim Bridger Substation is an existing 345kV/230kV substation located near the Jim Bridger Power Plant and the Black Butte Coal mining operations, approximately 30 miles east of Rock Springs, Wyoming. The new 230kV transmission line from Creston Substation (Segment 3) will terminate at the Jim Bridger Substation in the 230kV yard, which will be expanded to accommodate the new 230kV transmission line facilities.

The proposed Bridger 500kV Substation will consist of a new 500kV yard. The new 500kV line from Creston (Segment 3) and the two new 500kV lines from Populus Substation (Segment 4) will connect into the new 500kV substation yard. The proposed 500kV station will occupy a fenced area of about 150 acres to accommodate the required line terminations and associated equipment. To access the new 500kV yard, an all-weather surface road will be required. Interconnecting 230kV and 345kV transmission lines between the new Jim Bridger 500kV Substation yard and the existing Jim Bridger Substation 230kV and 345kV yards are also required to electrically connect the two substations

Initially, a site located west of the plant and on the south side of the existing 345kV transmission corridor was considered (west alternative site); however, as a result of an environmental and engineering field review, two additional alternative sites were added for consideration, one

located west of the power plant and north of the existing 345kV corridor (north alternative site), and a second site located south and east of the plant (southeast alternative site). **Figure 3-2** shows the three alternative site locations, and the following sections describe the evaluation of each of the three alternative sites.

West Alternative Site

This alternative site is located approximately 3,100 feet southwest of the existing Jim Bridger Substation between an active coal mine to the west, gas wells and the existing transmission corridor to the north, and an existing pond to the east. It is also bordered on the northeast, southeast, and southwest by existing natural gas pipelines. Topography is irregular and construction would require substantial grading to create a relatively level site. Also, this site would require a new access road to the Jim Bridger Power Plant access road, a distance of approximately 0.5 mile.

Because of substantial earth work required, the lack of current access, and the numerous site constraints, this site was dropped from further consideration.

North Alternative Site

This alternative substation site is located on grassland (partially pivot irrigated) about 1.5 miles west of the Jim Bridger Power Plant and north of the existing 345kV transmission corridor. Topography at the site is sloping to the northeast (less irregular and less steep than West Alternative Site). It is constrained by gas wells to the east, but appeared to have considerable room to the west and north, and an existing gravel road (Wamsutter Road) that connects this site to the power plant site. Development of a substation at this alternative site would require an approximately 2.2 mile-long 345kV transmission line interconnection with the existing Jim Bridger Substation.

Although this is an attractive site, it has a number of encumbrances on the property and would not be available for substation development. Also, this site would require an additional crossing of the three 345kV single-circuit lines approaching Cokeville. As a result, this site was dropped from further consideration.

Proposed East Site

This alternative site is located about 2.5 miles southeast of the Jim Bridger Power Plant, along the east side of Deadman Draw. It would require development of an access road from the vicinity of I-80 almost 3.0 miles to the south or from the plant access road across the draw and Threemile Meadow. It would also require crossings of a historic trail and potential wetlands by 230kV, 345kV, and 500kV transmission lines. Construction of this site would require more access road development than either of the other alternative sites. Site work would likely be similar to the north alternative site and less than the west alternative site.

Of the three sites considered, it was determined that the east site was most suitable for development and was selected by the Companies as the proposed Bridger 500kV Substation site.

3.1.3 Cedar Hill

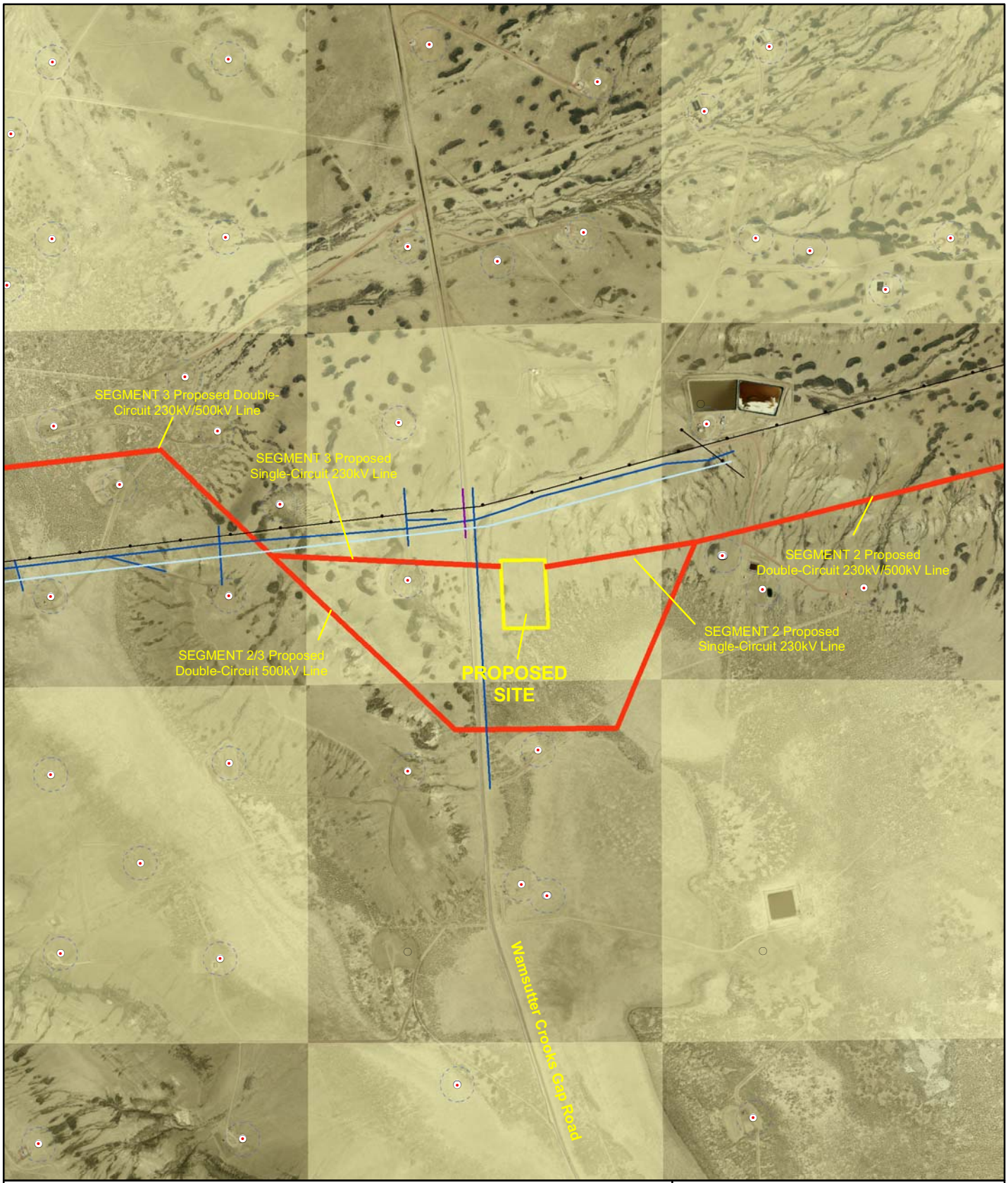
The station will serve two purposes: 1) a reliability tie between the Gateway West north (Segments 6 & 8) and south (Segments 7 & 9) transmission lines, and 2) a 500 to 230kV transformation station for serving the Magic Valley load. This will complement the existing service from Midpoint to the north of the Magic Valley. The Cedar Hill Substation will be the interconnection point for three new Gateway 500kV transmission lines. The three lines include the 500kV line from the Populus Substation (Segment 7), the 500kV line from the Hemingway Substation (Segment 9), and the 500kV line from the Midpoint Substation (Segment 10). Approximately 45 acres will be developed and fenced to accommodate the required line terminations and associated equipment. A new control building will be constructed to house the 500kV communications and control equipment for the new Gateway 500kV transmission lines. A new all weather access road will be required.

Two alternative sites in the vicinity of the intersection of the various proposed east-west and north-south transmission lines were evaluated for the Cedar Hill Substation, including the southern alternative site and the northern alternative site (**Figure 3-3**). The southern alternative site was initially identified by the Companies early in the Project planning phase, prior to the detailed corridor development and evaluation process. However, the routing of the east-west transmission line corridors (Segments 7 and 9) to this site is constrained by the presence of a VRM Class II area located immediately to the west. In addition, analyses determined it would require moderate grading to prepare the substation site. The site is on BLM administered land wholly within a VRM Class II area. It was concluded that a substation at this location would not meet visual quality management objectives. .

The northern alternative site was eventually selected as the proposed location because VRM Class II lands can be avoided with a proposed transmission line corridor extending directly west, and the site is fairly level.

3.1.4 Conclusions

Each of the alternative sites considered for the proposed Creston, Jim Bridger 500kV, and Cedar Hill Substations was evaluated against the attributes listed in Table 2-1. Where constraints were identified, such as steep terrain or VRM Class II, alternative locations were sought. The final proposed locations are expected to have the fewest environmental constraints while allowing for the electrical interconnection required to meet the Project's purpose and need.



0 2,000
Feet

Project Features

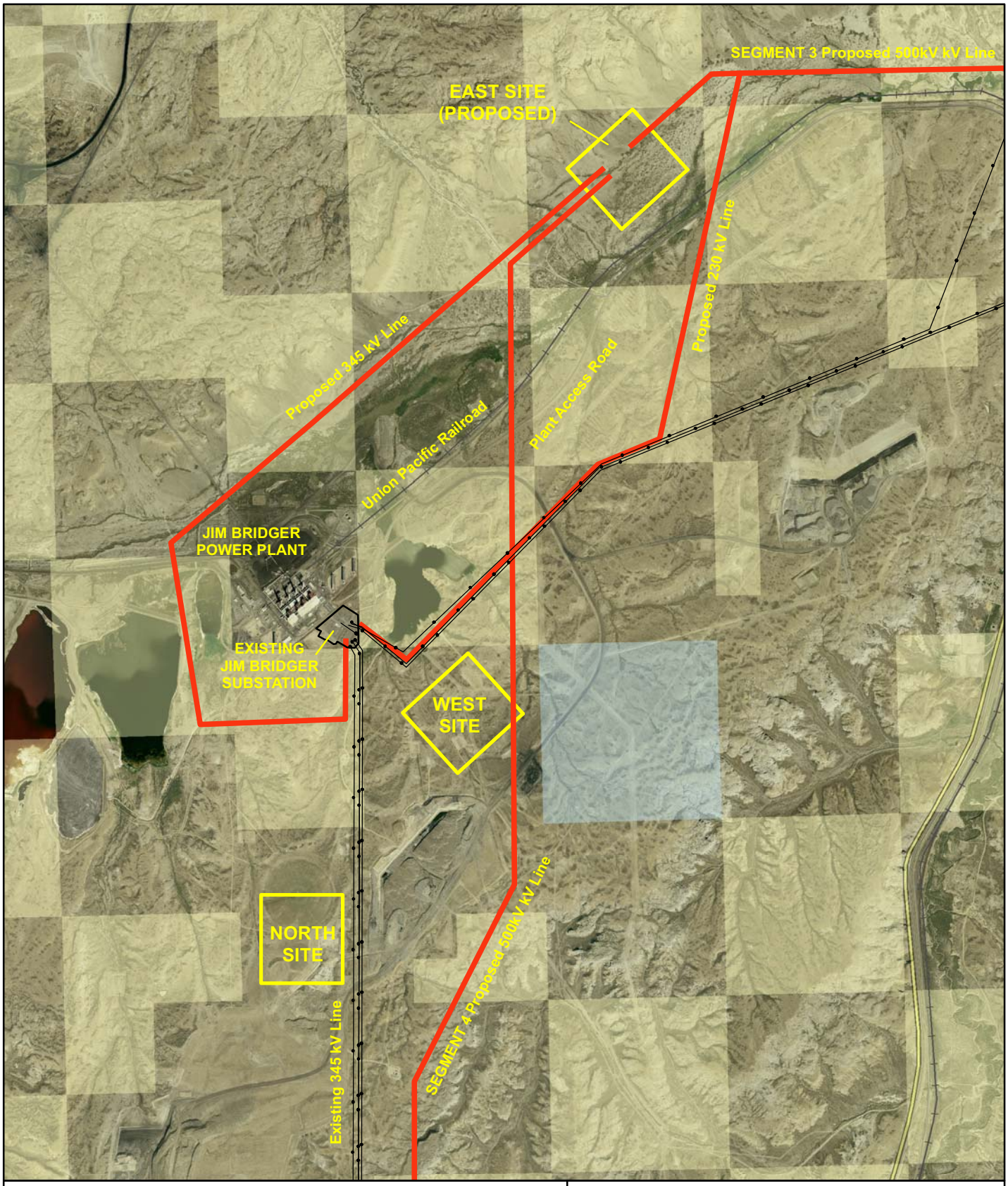
- Proposed Route
- Potential Substation Location
- Oil & Gas Well
- Oil & Gas Well - Plugged
- Oil & Gas Well 250ft Buffer
- Existing Transmission Line
- Proposed Transmission Line
- Fiber Optic Line
- Gas Pipeline
- BLM Land

Revised 09-04-08

Gateway West
Transmission Line Project
Idaho, Wyoming

Creston Substation

Figure 3-1



Project Features

- Existing Transmission Line
- Proposed Route
- Potential Substation Location

Land Status

- BLM
- State Lands

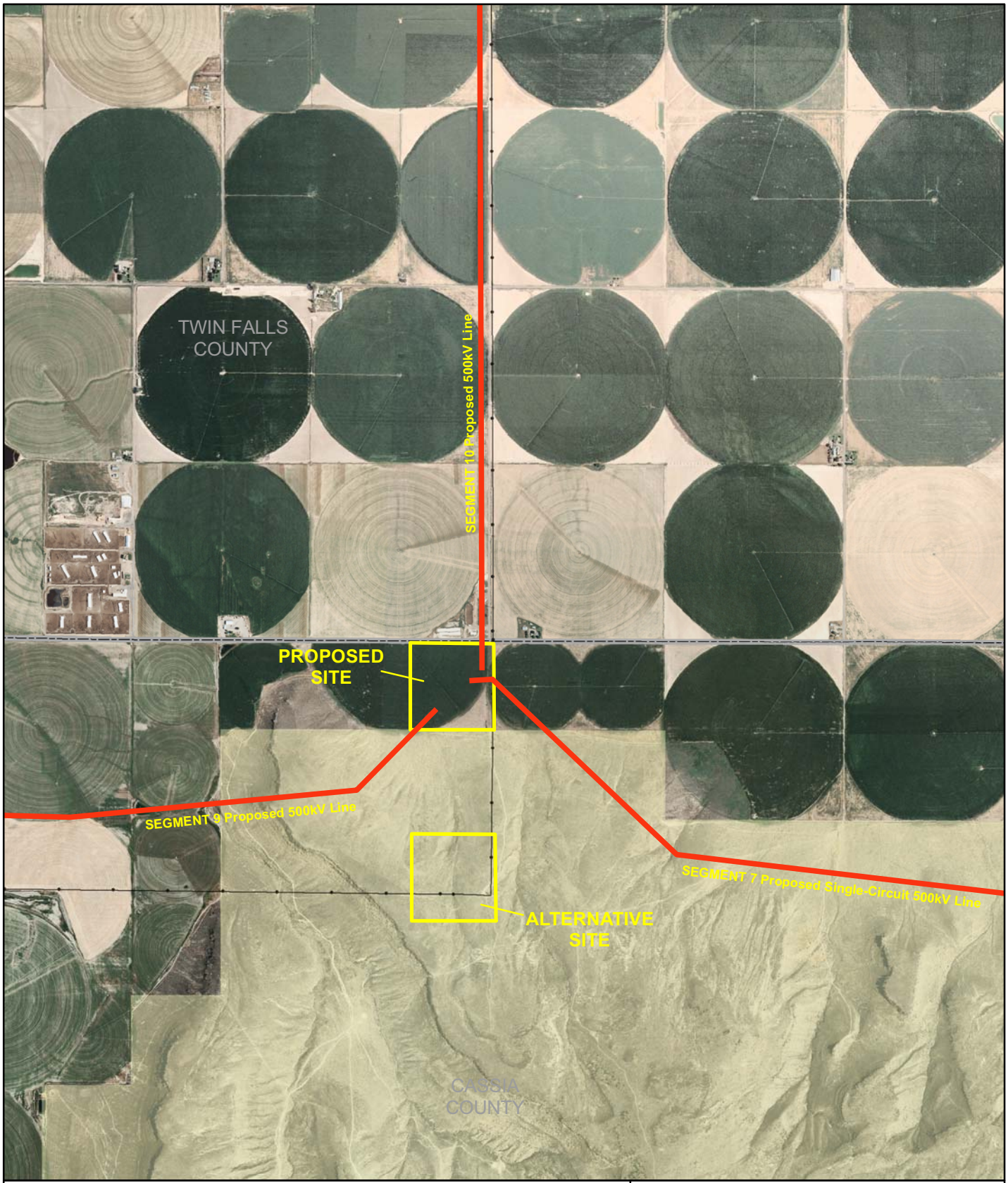
0 4,000
Feet

Revised 09-04-08

Gateway West
Transmission Line Project
Idaho, Wyoming

Bridger 500kV Substation

Figure 3-2



N

0 2,000
Feet

Project Features

- Existing Transmission Line
- Proposed Route
- Potential Substation Location

Land Status

- BLM

Revised 09-04-08

Gateway West
Transmission Line Project
Idaho, Wyoming

Cedar Hill Substation

Figure 3-3

4.0 TRANSMISSION LINE CORRIDORS EVALUATION

4.1 Comprehensive Inventory of Transmission Line Corridors Considered

The transmission line corridor evaluation process resulted in the development of the corridors presented in **Table 4-1** and **Figures 4-1** through **4-12**. The organizational structure for the presentation of the corridors is in the following order:

1. By segment: The Project includes 11 transmission line segments that are identified by the substations at each terminus. Segments are generally presented from east to west.
2. By subsegment: Each segment is divided into one or more subsegments, based on common geography and common issues. Each subsegment is assigned a descriptive name. Subsegments are generally presented from east to west.
3. By a series of corridor reference points: Within each subsegment, a series of alphanumeric reference points delineates specific corridors within each subsegment. A series of reference points is generally presented from east to west.

Table 4-1. Inventory of Corridors Considered

Subsegment	Figure	Corridor Reference Points
Segment 1 E – Windstar to Aeolus		
Thunder Basin	4-1	1, 1Eb
		1, 1Ea, 1Eb
Medicine Bow	4-1	1Eb, 1Ec, 2
		1Eb, 2
Segment 1 W – Windstar to Aeolus		
Shirley Basin	4-2	1, 1W, 2 (3 total corridors)
		1, 2 (3 total corridors)
Segment 2 – Aeolus to Creston		
Seven Mile	4-3	2, 2a, 2c
		2, 2b, 2c
Rawlins	4-3	2c, 2d, 2e, 2f, 2h, 2i, 3
		2d, 2f
		2h, 2g, 2i
Segment 3 – Creston to Bridger		
Tipton	4-4	3, 3a, 4
		4, 3c
		4, 4d, 3c
		3, 3b, 4
Segment 4 – Bridger to Populus		
Rock Springs	4-5	4, 4a, 4b, 4f, 4e
		4, 4a, 4d, 4e
Kemmerer	4-5	4b, 4f, 4e, 4f.2, 4f.3, 4j, 4k
		4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k
		4b, 4f, 4e, 4f.2, 4g.1, 4g, 4j, 4k
		4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13, 4j, 4k
		4b, 4f, 4c, 4g,4j,4k
Montpelier	4-6	4k, 4m, 4n
		4k, 4l, 4n
Cache	4-6	4n, 4o, 4p
		4n, 4p
Populus	4-6	4p, 5

Subsegment	Figure	Corridor Reference Points
		4p, 4q, 5
Segment 5 – Populus to Borah		
Deep Creek	4-7	5, 5a, 5b, 5d, 5e, 6
		5, 5c, 5d
		5, 5d
		5b, 5e
		5a, 6
Segment 6 – Borah to Midpoint		
Craters	4-8	6, 8
Segment 7 – Populus to Cedar Hill		
Deep Creek	4-9	5, 7a, 7c, 7d
		7a, 7b, 7d
		5, 7b, 7d
		5, 7a, 7a.1, 7b, 7d
Burley	4-9	7d, 7e, 7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9
		7e, 7f, 7g
		7e, 7u, 7g
		7j, 7l
		7g, 7i
		7h, 7n, 7s
		7m, 7p, 7o, 7q, 7t, 7s
		7m, 7p, 7q, 7t, 7s
		5, 7r, 7q, 7t, 7s
		7g, 7i, 9g, 9h
Segment 8 – Midpoint to Hemingway		
North Snake River	4-10	8, 8a, 8b, 8c, 8c.1, 8o, 8g
		8, 8c.1
		8, 8c, 8c.1
		8, 8a, 8c, 8c.1
		8c.1, 8d, 8e, 8f, 8o
		8c, 8d, 8e, 8f, 8o
		8b, 8e, 8f, 8o
		8b,8f,8o
Treasure Valley	4-10	8g, 8h, 8j, 8k, 8l, 8m, 8n, 8p, 11
		8g, 11
		8h, 8i, 8j
		8j, 8l
		8l, 8n
		8n, 11
Segment 9 – Cedar Hill to Hemingway		
Magic Valley	4-11	9, 9a, 9b, 9c, 9f, 9h
		9c, 9d, 9e, 9g, 9h
		9, 9e, 9f,9h
Saylor Creek	4-11	9h, 9i, 9k, 9l, 9m
		9i, 9j, 9l
		9b, 9m
Owyhee	4-11	9m, 11
Segment 10 – Cedar Hill to Midpoint		
Minidoka	4-12	8, 10a, 10c, 9
		10a, 10b, 10c

4.2 Discussion of Transmission Line Corridors Considered

This section provides a discussion of the corridors considered within each segment. The characteristics of each corridor considered within each subsegment are identified and described, with an emphasis on factors that affected routing decisions for each corridor, including environmental advantages and disadvantages, and engineering and construction feasibility. Based on an analysis of this information, each of the considered corridors documented in **Table 4-1** and **Figures 4-1** through **4-12** was placed into one of three categories:

1. Proposed Corridor (Red) – The Companies' proposed corridor;
2. Feasible Alternative Corridor (Green) – Alternative that is feasible but not preferred; or
3. Alternative Corridor Considered, but Not Proposed (Purple) – Alternative considered but not proposed for detailed analysis because it presents no environmental advantages or has substantial constraints.

This section identifies the corridors that fall within each of these categories and explains the rationale for these decisions. The organization of this section is as follows:

- Segments are presented in numerical order: 1 E, 1 W, then 2 through 10.
- Each segment is introduced with text describing the general location of the segment, the number of required circuits discussed in the POD, and major opportunities and constraints that affected routing.
- Within each segment, the subsegments are presented in geographic order, from east to west.
- For each subsegment, the presentation begins with a description of the proposed corridor, including more detail regarding the specific location and the primary issues and the decision framework that drove the routing process in each subsegment.
- Bulleted lists of the advantages and disadvantages of the proposed corridor are included.
- Following the discussion of the proposed corridor in a given subsegment, the feasible alternative corridors and the alternative corridors considered but not proposed in that subsegment are presented in a similar fashion, with emphasis placed on comparing these alternative corridors to the proposed corridor.
- The comparison of the proposed corridor and the alternative corridors concludes by displaying a table that shows quantitative comparisons of sets of corridor alternatives, using the attributes from **Table 2-1** that are significant for each set of corridors. The tables present the extent to which the centerline of each 2-mile-wide corridor crosses each attribute. Attributes avoided by the centerline of the proposed corridor are not listed in the comparative tables. The tables are arranged such that within each particular portion of a given subsegment's route, the proposed corridor is presented first, followed by the associated alternative corridor(s), if applicable.
- Finally, for each segment, a summary section presents a description of the geographic location of the proposed corridor and the feasible alternative corridors, warranting detailed analysis. This summary section also provides a discussion of the conformance of the proposed corridor and alternatives with the WWEC and other designated ROW corridors.

- The overall project approach was to conform to the WWEC and other designated ROW corridors unless there was a compelling reason not to. The WWEC is only mapped for federal land, and land ownership in the Project study area tends to be largely checkerboard federal and non-federal. In addition, the WWEC varies in width. In some cases it offers little or no opportunity to route directly within the WWEC due to required 1,500-foot offsets between existing and proposed lines and between sets of proposed lines; however, in many cases the intent of the proposed routing is to follow the WWEC as closely as possible. Therefore, three separate measures of WWEC conformance are presented to accurately reflect the intent of the proposed corridors in relation to the WWEC:

    1) A corridor that falls within federal land mapped as WWEC is referred to as "within WWEC";
    2) A corridor that falls within non-federal land parcels located between federal land parcels mapped as WWEC are referred to as "projected WWEC"; and
    3) A corridor that does not fall within the WWEC or projected WWEC but that is located adjacent to the WWEC, regardless of land ownership status, is referred to as "parallel to WWEC and/or projected WWEC".

4.2.1 Segment 1 E – Windstar to Aeolus (reference points 1 to 2)

This segment will consist of one single-circuit 230kV transmission line from the new Windstar Substation, located approximately 2 miles north of the Dave Johnston Power Plant in Glenrock, Wyoming, to the new Aeolus Substation, near Hanna, Wyoming (**Figure 4-1**). This 230kV line will be carried on steel H-frame structures between 60 and 90 feet tall (Idaho Power Company and Rocky Mountain Power 2008). The proposed 230kv voltage allows for the interconnection of wind resources.

The purpose and need of the Project dictates that the Project include two corridors between the Windstar and Aeolus Substations, one in proximity to an existing 230kV utility corridor (where Segment 1 W is proposed, presented in Section 4.2.2), and one at the eastern extent of the Project study area (Segment 1 E, presented in this section). Segment 1 E passes through the Medicine Bow National Forest District but does not cross any federal lands administered by the USFS. For the purpose of discussion, this corridor is divided into two subsegments, the Thunder Basin Subsegment to the north and the Medicine Bow Subsegment to the south. Within this segment there are no existing or proposed utility corridors that are designated ROW corridors by the BLM or the WWEC; therefore, the full length of this segment is greenfield (new), and the primary routing concerns were minimization of effects natural and cultural resources and avoidance of USFS lands.

4.2.1.1 Thunder Basin Subsegment (1 to 1Eb)

Proposed Corridor (1, 1Eb)

The Thunder Basin Subsegment is shown on **Figure 4-1**. Beginning at the planned Windstar Substation, the line will proceed southwest from the substation, crossing the Burlington Northern Railroad, then the North Platte River, the Chicago and North Western railroad, and US Route 25. Southeast of this highway at mile 7.6, the line crosses into the uplands, in the vicinity of Brighton Canyon and east of Little Box Elder Creek. The corridor continues south, parallel to Windy Ridge, to mile 27 where this segment crosses into the Laramie Mountains, which it traverses for approximately 15 miles, to mile 42.0. This subsegment corridor proceeds south, parallel to the Old Fort Fetterman Road, approximately 4 miles to the east, and continues south

to the vicinity of the confluence of Sheep Creek and Mule Creek. The proposed corridor in this subsegment terminates at mile 54.0 near Twenty-two Mile Draw.

Routing concerns included avoidance of a bald eagle nest and bald eagle roosting areas near the North Platte River, sage grouse leks, and USFS administered property, including the Medicine Bow National Forest and Thunder Basin National Grasslands. This corridor was routed using the LRT and subsequent manipulation to address local concerns along the corridor.

Advantages of the proposed corridor include (**Table 4-2**):

- Is 7.7 miles shorter;
- Avoids many of the known biological resource constraints in the area;
- Minimizes effects to the known cultural resource constraints in the area, including avoiding the Fetterman Road historic trail; and
- Avoids USFS administered land.

Disadvantages of the proposed corridor include (**Table 4-2**):

- Is an entirely greenfield corridor;
- Crosses 8.4 miles of big game critical winter range;
- Encroaches upon 2.8 miles of NSO zones within 500 feet of streams; additional soil erosion control measures would be required to be implemented in these areas to prevent erosion from affecting nearby waterways;
- Affects 1.3 miles of historic trail buffer; however, this is unavoidable given the requirement of extending between Windstar and Aeolus; and
- Crosses 1.3 miles of VRM Class II on BLM land.

The proposed corridor was selected because it meets the Project purpose, proximity to wind resources, and need while minimizing effects to environmental resources and minimizing the total length of the line.

Alternative Corridor Considered, but Not Proposed (1, 1Ea, 1Eb)

In the Thunder Basin Subsegment, one alternative corridor was considered but is not proposed for detailed analysis. This corridor is located just to the east of the proposed corridor, as shown on **Figure 4-1**. This alternative exits the Windstar Substation and runs eastward, north of the North Platte River, for approximately 4 miles. It then angles generally southward, crossing the North Platte River just west of Careyhurst, crossing the I-25/US 20/US 26/US 87 corridor, and proceeding south through the Medicine Bow National Forest District, paralleling just west of Fetterman Road, to a location approximately 7 miles west of Garrett. At this point the alternative corridor turns and heads southwest to reference point 1Eb.

This corridor was initially developed in an attempt to minimize visual effects from the line by placing the line within a valley and along an existing road. However, upon determining that the road is the historic Fetterman Road, the now proposed corridor was moved west onto an area of higher ground to be farther from this road while still taking advantage of local terrain.

Advantages of this alternative corridor include (**Table 4-2**):

- Minimizes visual effects in the general area by taking advantage of topography.

Disadvantages of this alternative corridor include (**Table 4-2**):

- Crosses 0.3 mile more historic trail buffer than the proposed corridor, and closely parallels the historic Fetterman Road;
- Crosses 0.5 mile of USFS administered land and may require a plan amendment
- Is 7.7 miles longer than the proposed corridor;
- Requires 7.7 miles more greenfield corridor than the proposed corridor;
- Crosses 6.6 miles more big game critical winter range than the proposed corridor;
- Crosses through Braehead Ranch National Register of Historic Places (NRHP) Historic District buffer, which the proposed corridor avoids;
- Crosses 5.8 miles more NSO areas within 500 feet of streams than does the proposed corridor; additional soil erosion control measures would be required to be implemented in these areas to prevent erosion from affecting nearby waterways;
- Traverses 0.5 mile of USFS land, whereas the proposed corridor avoids USFS land; and
- Crosses 0.3 mile more VRM Class II on BLM land than does the proposed corridor.

This corridor is not proposed for detailed analysis primarily because it would have a substantial affect on cultural resources, particularly the historic Fetterman Road, in addition to adding to the total length of the line and affecting more environmental resources.

Table 4-2 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 1 E Thunder Basin Subsegment, shown on **Figure 4-1**.

Table 4-2. Corridor Comparisons, Segment 1 E, Thunder Basin Subsegment (1 to 1Eb)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	1, 1Eb	1, 1Ea, 1Eb
Surface Ownership (miles)		
BLM	6.0	6.7
USFS	0	0.5
State	7.1	8.9
Private	40.6	45.3
Total Length	53.8	61.5
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0
Total WWEC	0	0
Parallel to Existing Transmission Lines	0	0
Environmental Resources (miles)		
Historic Trail Buffer	1.3	1.6
NRHP Historic District Buffer	0	1.5
Big Game Critical Winter Range	8.4	15.0
NSO (within 500 feet of streams)	2.8	8.6
VRM Class II (BLM Land)	1.3	1.6

*Depicted on **Figure 4-1**

4.2.1.2 Medicine Bow Subsegment (1Eb to 2)

Proposed Corridor (1Eb, 1Ec, 2)

The purpose of the Medicine Bow Subsegment, shown on **Figure 4-1**, is to access the extensive wind energy resource area that exists in the area north and east of the town of Medicine Bow. The proposed corridor in this subsegment begins at mile 54.0 near Twenty-two Mile Draw where it turns southwest for about 12.9 miles before turning westward and then crossing from Albany County into Carbon County at mile 71.1. From the county line, the corridor continues westward across Greasewood Flats, crossing SR 487 at mile 76.5. It then proceeds west, south of the Freezeout Mountains and north of the Medicine Bow River, to the proposed Aeolus Substation.

This subsegment was routed manually to be in proximity to the wind energy resource area and to address concerns along the corridor. Principal environmental concerns in routing this subsection were avoidance of potential effects sage grouse leks and nesting raptors, and avoidance of active mining claims.

Advantages of the proposed corridor include (**Table 4-3**):

- Provides access to wind energy resource area;
- Avoids many of the known biological resource constraints in the area;
- Avoids active mining claims; and
- Avoids known cultural resource constraints.

Disadvantages of the proposed corridor include (**Table 4-3**):

- Is 4 miles longer;
- No WWEC or BLM designated ROW corridors are mapped within this area;
- Is an entirely greenfield corridor;
- Crosses 12.6 miles of big game critical winter range;
- Many raptor nests are in proximity to the corridor; and
- Encroaches upon two sage grouse lek 0.65-mile buffers.

Table 4-3. Corridor Comparisons, Segment 1 E, Medicine Bow Subsegment (1Eb to 2)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	1Eb, 1Ec, 2	1Eb, 2
Surface Ownership (miles)		
BLM	7.2	6.2
USFS	0	0
State	1.0	3.0
Private	25.7	20.6
Total Length	33.9	29.9
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0
Total WWEC	0	0
Parallel to Existing Transmission Lines	0	0
Environmental Resources (miles)		
Big Game Critical Winter Range	12.6	17.7
Slope >15%	0.6	2.4
Active Mining Claims	0	29.1
Sage Grouse Lek 0.65-mile Buffer	1.2 (2 leks)	0

*Depicted on **Figure 4-1**

The proposed corridor was selected because it provides better access to the proposed wind farms, meets the Project purpose and need and although longer, this corridor avoids active mining and traverses less big game-critical and slopes 15 percent and over.

Alternative Corridor Considered, but Not Proposed (1Eb, 2)

One alternative corridor was considered in this subsegment but is not proposed for detailed analysis. This corridor is located north of the proposed corridor, as shown on **Figure 4-1**. This alternative extends from 1Eb through the remainder of Albany County, across the Thunder Basin Flats, crossing US 487, running along the southern foot of the Freezeout Mountains, and terminating at the Aeolus Substation near the Medicine Bow River (**Figure 4-1**).

This corridor was developed in an attempt to create a more direct route; however, it does not meet the Project purpose and need because it does not extend far enough south to effectively access the wind energy resource area to the south.

Table 4-3 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 1 E Medicine Bow Subsegment, shown on **Figure 4-1**.

4.2.1.3 Summary of Segment 1 E

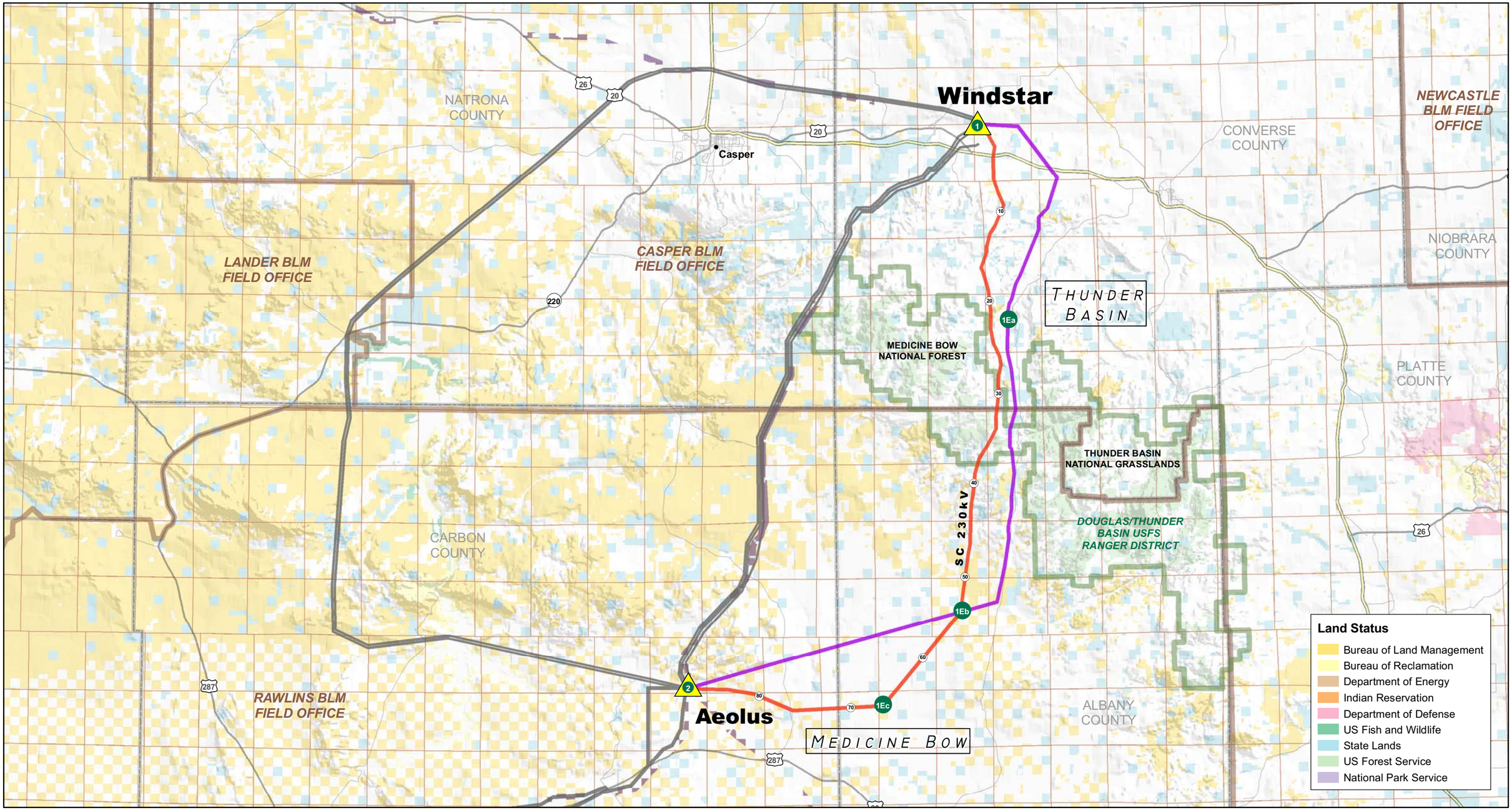
Description of Proposed Corridor

This segment will consist of one single-circuit 230kV transmission line from the new Windstar Substation, located approximately 2 miles north of the Dave Johnston Power Plant in Glenrock, Wyoming, to the new Aeolus Substation, near Hanna, Wyoming. This 230kV line will be carried on steel H-frame structures between 60 and 90 feet tall (Idaho Power Company and Rocky Mountain Power 2008).

The proposed 88-mile Segment 1 E transmission line corridor begins at the Windstar Substation located about 3.5 miles east of the community of Glenrock in Converse County and just north of the Dave Johnston Power Plant, and terminates at the proposed Aeolus Substation near Hanna, Wyoming. Beginning at the Windstar Substation, the line proceeds southeast from the substation, crossing the Burlington Northern Railroad, the North Platte River, the Chicago and North Western railroad, and US Route 25. Southeast of this highway at mile 7.6, the line crosses into the uplands, in the vicinity of Brighton Canyon and east of Little Box Elder Creek. The corridor continues south parallel to Windy Ridge to mile 27, where this segment crosses into the Laramie Mountains, which it traverses for approximately 15 miles, to mile 42.0. This segment continues south, running parallel to the Old Fort Fetterman Road, which is approximately 4 miles to the east. The proposed 230kV line continues south to the vicinity of the confluence of Sheep Creek and Mule Creek. At mile 54.0 near Twenty-two Mile Draw, the line turns southwest for about 12.9 miles before turning westward and then crossing from Albany County into Carbon County at mile 71.1. From the county line, the route continues westward across Greasewood Flats, crossing SR 487 at mile 76.5. It then proceeds west, south of the Freezeout Mountains and north of the Medicine Bow River, to the proposed Aeolus Substation.

Conformance with the WWEC and Other Designated ROW Corridors

The purpose and need of the Project dictates a corridor located along the eastern extent of the Project study area to meet reliability criteria but also be in closer proximity to the wind energy resource area. Within the vicinity of Segment 1 E, there is no proposed WWEC or BLM-designated ROW corridor; therefore, the proposed corridor and alternatives considered are not able to utilize these corridors.



0 10 Miles

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

IDAHO POWER
An IDACORP Company

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 1E
Figure 4 - 1

4.2.2 Segment 1 W – Windstar to Aeolus (reference points 1 to 2)

Segment 1 W consists of three proposed lines, as shown on **Figure 4-2**. Segment 1 W will comprise one new single-circuit 230kV line (1Wa) and one new single-circuit 500kV line (1Wb) that will run southwest from the new Windstar Substation, located approximately 2 miles north of the Dave Johnston Power Plant in Glenrock, Wyoming, to the new Aeolus substation near Hanna, Wyoming. Segment 1 W will also include reconductoring of the existing Dave Johnston – Difficulty 230kV line (1Wc) with a higher capacity conductor to increase the load carrying capacity of this existing line segment. The proposed lines (1Wa and 1Wb) will proceed parallel to and separated by 1,500 feet from each other and the existing line (1Wc). The 230kV line (1Wa) will be carried on steel H-frame structures between 60 and 90 feet tall, and the 500kV line (1Wb) will be carried on single-circuit lattice steel structures between 145 and 180 feet tall. The existing 230kV line (1Wc) is carried on wood pole H-frame structures with heights varying between 60 and 90 feet above ground, of which up to 10 percent may need to be replaced. The reconductored line segment will extend from the existing terminus in the Dave Johnston Substation to a new line termination bay in the planned Aeolus Substation.

Per BLM and USFS land management policies, the priority in this segment is to follow existing utility corridors, particularly those corridors that have been identified by the agencies as designated ROW corridors. Based on the presence of this opportunity for the full extent of the Segment 1 W, this segment comprises only one subsegment, the Shirley Basin Subsegment (**Figure 4-2**).

4.2.2.1 Shirley Basin Subsegment (1 to 2)

Proposed Corridor – 1Wa, 1Wb, and 1Wc (1, 1W, 2)

Segment 1Wc as shown on **Figure 4-2**, leaves the existing Dave Johnston Substation and proceeds south and west to the Aeolus Substation, a distance of approximately 70.6 miles. Upon reaching the Aeolus Substation, 1Wc will be looped in and back out of the Aeolus Substation, continuing as it now exists on to the next substation. From the vicinity of the Windstar and Dave Johnston Substations, the two new lines (1Wa and 1Wb) and the existing line (1Wc) proceed southwest across the North Platte River, the Chicago and Northwestern railroad, and U.S. 20/26/87 and 25, and then continue for another 16 miles to the vicinity of Barner Mountain. At this location, the lines turn more southerly across the west side of this mountain crossing into Natrona County at mile 22. After crossing the Natrona/Converse County line at mile 39.6, the lines proceed parallel to the existing 230kV line across the West Fork of Duck Creek and over the Deer Creek Range. The lines then proceed generally south, passing east of Bates Creek Reservoir before crossing SR 487. The proposed lines parallel the west side of SR 487 for about 14 miles to mile 59.5 where the lines turn southwest and proceed along the northwest side of the Freezeout Mountains before terminating at the proposed Aeolus Substation at mile 72.1 (mile 70.6 for the Dave Johnson – Difficulty line).

The alternatives analysis for this segment was limited in scope because for the entire length of the segment an opportunity exists along an existing utility corridor that is also WWEC in portions and BLM- and USFS-designated ROW corridor in portions (BLM 2007 and 2008). The one area where BLM has not designated the existing corridor as a ROW corridor is within the Bates Hole Management Area, an intensive management area in the southern portion of the Casper Field Office. Bates Hole is actually identified by BLM as a new ROW exclusion area (BLM 2007). However, avoidance of this area could not be achieved without substantially compromising several other environmental factors, as described below for the alternative corridor.

Furthermore, the Casper RMP (BLM 2007) specifically states that while no new utility corridors will be designated in Bates Hole, use of existing corridors in the area is acceptable if it is not

feasible to follow one of the designated corridors. Corridor 1Wc is the upgraded existing utility corridor and the proposed 230kv and 500kv corridors follow this corridor for about 10 miles through Bates Hole. Additional concerns along this corridor included minimization of effects to a bald eagle roost site near the North Platte River and avoiding crossings of NSO zones adjacent to tributary streams. The proposed corridor was placed as close to the existing line as possible and then refined to address known constraints. Because the three lines that comprise Segment 1 W are so similar to each other due to proximity, one comprehensive descriptive summary of these lines is presented below. However, these lines are separated in **Table 4-4**, for reference.

Advantages of the proposed corridor include (**Table 4-4**):

- 1Wa, 1Wb, and 1Wc, combined, are within or parallel to the WWEC or projected WWEC (which is also an existing utility corridor in this segment) along 96 percent of its length;
- 1Wa, 1Wb, and 1Wc, combined, follow a designated BLM ROW corridor for the entire corridor extent, except in the Bates Hole Management Area; and
- It is a relatively direct route.

Disadvantages of the proposed corridor include (**Table 4-4**):

- Each proposed line traverses the Bates Hole Management Area for approximately 10 miles, for a combined total of 30.8 miles;
- Traverses a combined total of 4.9 miles through the Medicine Bow National Forest; however, is within or adjacent to an existing utility corridor in this portion;
- Crosses an experimental black-footed ferret release site in the Shirley Basin;
- Encroaches upon a combined total of 7.5 miles of NSO zones within 500 feet of streams; additional soil erosion control measures would be required to be implemented in these areas to prevent erosion from affecting nearby waterways;
- Crosses a combined total of 8.3 miles of active mining claims;
- Crosses a combined total of 84.0 miles of big game critical winter range;
- Crosses a combined total of 1.3 miles of VRM Class II on BLM land;
- Crosses a combined total of 2.6 miles total of historic trail buffer; however, this is unavoidable given the requirement of extending between Windstar and Aeolus;
- 1Wb will require narrowing up the 1,500 foot line separation distance for several spans to avoid encroaching upon one sage grouse lek 0.25-mile buffer;
- 1Wa and 1Wb cross one sage grouse lek 0.65-mile buffer;
- Traverses a combined total of 47.2 miles of sage grouse core areas;
- Crosses a combined total of 1.3 miles of wetlands; and
- Each proposed line traverses approximately 20 miles of slope >15% areas, for a total combined total of 61.1 miles.

The proposed corridor was selected because it follows an existing utility corridor, the WWEC corridor, and a BLM-designated ROW corridor, without substantially affecting environmental resources.

Alternative Corridor Considered, but Not Proposed (1, 2)

This alternative corridor is shown on **Figure 4-2**. This alternative corridor includes a 230kv line on steel H-frame structures (1Wd), a 500kv line on steel lattice structures (1We), and the upgraded 230kv line (1Wc) described in the previous section. The proposed 230kv and 500kv corridors exit the Windstar Substation heading generally west, running north of the North Platte River and the I-25/US 20/US 26/US 87 corridor. The two corridors (1Wd and 1We) pass north of Glenrock, Casper, and the Natrona County International Airport, and then begin to head southwest, crossing US20/26 and traversing Emigrant Gap Ridge. These two alternate corridors continue southwest for approximately 27 miles until meeting US 220 just north of the Pathfinder NWR. The corridors then turn south and parallel the Pathfinder Reservoir and NWR 7 about 6 to 7 miles to the west. Next these corridors loop east, passing south of the Seminoe Mountains, crossing Seminoe Reservoir and State Park, passing south of the Shirley Mountains, and terminating at the Aeolus Substation near the Medicine Bow River.

This alternative was considered in an attempt to avoid crossing the Bates Hole Management Area, a SMA established to protect greater sage grouse habitat in the southern portion of the Casper Field Office, with new 230kv and 500kv transmission corridors. Avoidance of Bates Hole could not be achieved without substantially affecting several other environmental resources, as described below. The bulleted list of comparisons, below, presents the alternative corridor in relation to the proposed 1Wa, 1Wb and 1Wc corridor.

Advantages of this alternative corridor include (**Table 4-4**):

- Avoids the Bates Hole Management Area;
- Minimizes USFS land crossing; and
- The three corridors combined cross 5.6 miles less of slope >15% area more than does the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-4**):

- The combined total mileage of the alternate corridors is 151.0 miles longer than the proposed corridor, and 249.9 miles would be greenfield ROW construction;
- Only a combined 116.0 miles out of a total 366.6 miles are within or parallel to the WWEC or projected WWEC;
- Traverses a combined total of 23,5 miles of a SMA for historic trail buffer, whereas the proposed corridor avoids this area;
- Crosses a combined total of 1.6 miles of Seminoe State Park, whereas the proposed corridor avoids this area;
- Alternate corridors encroach upon 2 sage grouse lek 0.65-mile buffers;;
- Combined the alternate corridors traverses 129.7 more miles of sage grouse core areas as compared to the proposed corridor;
- Alternate corridors cross 6.0 miles of the Blowout Penstemon ACEC, which is managed to protect that sensitive plant species, whereas the proposed corridor avoids this area.[4];

[4] Attempts to route the transmission line corridors to avoid the Blowout Penstemon ACEC only resulted in significantly longer corridors and other impacts.

- Combined total for alternative corridor crosses 24.1 miles of black-footed ferret non-block clearance areas, whereas the proposed corridor crosses none;
- Combined total for alternative corridor crosses 4.2 miles more wetlands than the proposed corridor;
- Corridors 1Wd and 1We cross 9.4 miles of the Seminoe to Alcova Back Country Byway buffer, a designated scenic highway; and

This alternative is not proposed for detailed analysis because its environmental disadvantages heavily outweigh the advantages.

Table 4-4 presents quantitative comparisons of the characteristics of the corridors analyzed for the Shirley Basin Subsegment shown on **Figure 4-2**.

Table 4-4. Corridor Comparisons, Segment 1 W, Shirley Basin Subsegment (1 to 2)

Attributes	Comparison 1				
	Proposed 1Wa	Proposed 1Wb	Proposed 1Wc	Total 1Wa, 1Wb, and 1Wc	Considered Not Proposed (1Wc, 1Wd, 1We)
	Corridor Reference Points*				
	1, 1W, 2	1, 1W, 2	1, 1W, 2	1, 1W, 2	1, 2
Surface Ownership (miles)					
BLM	26.6	23.5	23.5	73.6	135.4
BOR	0	0	0	0	1.4
USFS/Other	1.9	1.3	1.7	4.9	4.0
State	14.2	15.7	14.5	44.4	51.2
Private	29.3	32.2	30.9	92.4	174.5
Water	0.1	0.1	0.1	0.3	0
Total Length	72.1	72.8	70.7	215.6	366.6
Corridors (miles)					
Within WWEC (Federal)	16.0	2.4	23.3	23.3	42.7
Within Projected WWEC (Non-Federal)	4.8	4.5	47.3	47.3	73.2
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	47.6	63.4	0	111.0	6.1
Total WWEC	68.4	67.9	70.6	206.9	116
Parallel to Existing Transmission Lines	68.4	67.9	70.6	206.9	70.6
Environmental Resources (miles)					
Active Mining Claims	3.1	2.1	3.1	8.3	8.0
Big Game Critical Winter Range	28.0	28.2	27.8	84	92.0
NSO (within 500 feet of streams)	2.1	1.9	3.5	7.5	5.0
VRM Class II (BLM Land)	0.4	0.3	0.6	1.3	1.3
Historic Trail Buffer	1.0	1.0	0.6	2.6	5.6
Bates Hole Management Area	10.0	10.3	10.5	30.8	10.5
Special Management Area	0	0	0	0	23.5
Seminoe State Park	0	0	0	0	1.6
Sage Grouse Lek 0.65-mile Buffer	0.9 (1 lek)	1.3 (1 lek)	0	2.2 (1 lek)	0.2 (2 leks)
Sage Grouse Core Areas	15.2	17.2	14.8	47.2	176.9
Blowout Penstemon ACEC	0	0	0	0	12.0
Black-footed Ferret Non-Block Clearance	0	0	0	0	47.2
NWI Wetland	0.3	0.2	0.8	1.3	5.5
Scenic Highway Buffer	0	0	0	0	9.4
Slope >15%	20.2	20.5	20.4	61.1	66.7

*Depicted on **Figure 4-2**

4.2.2.2 Segment 1 W Summary

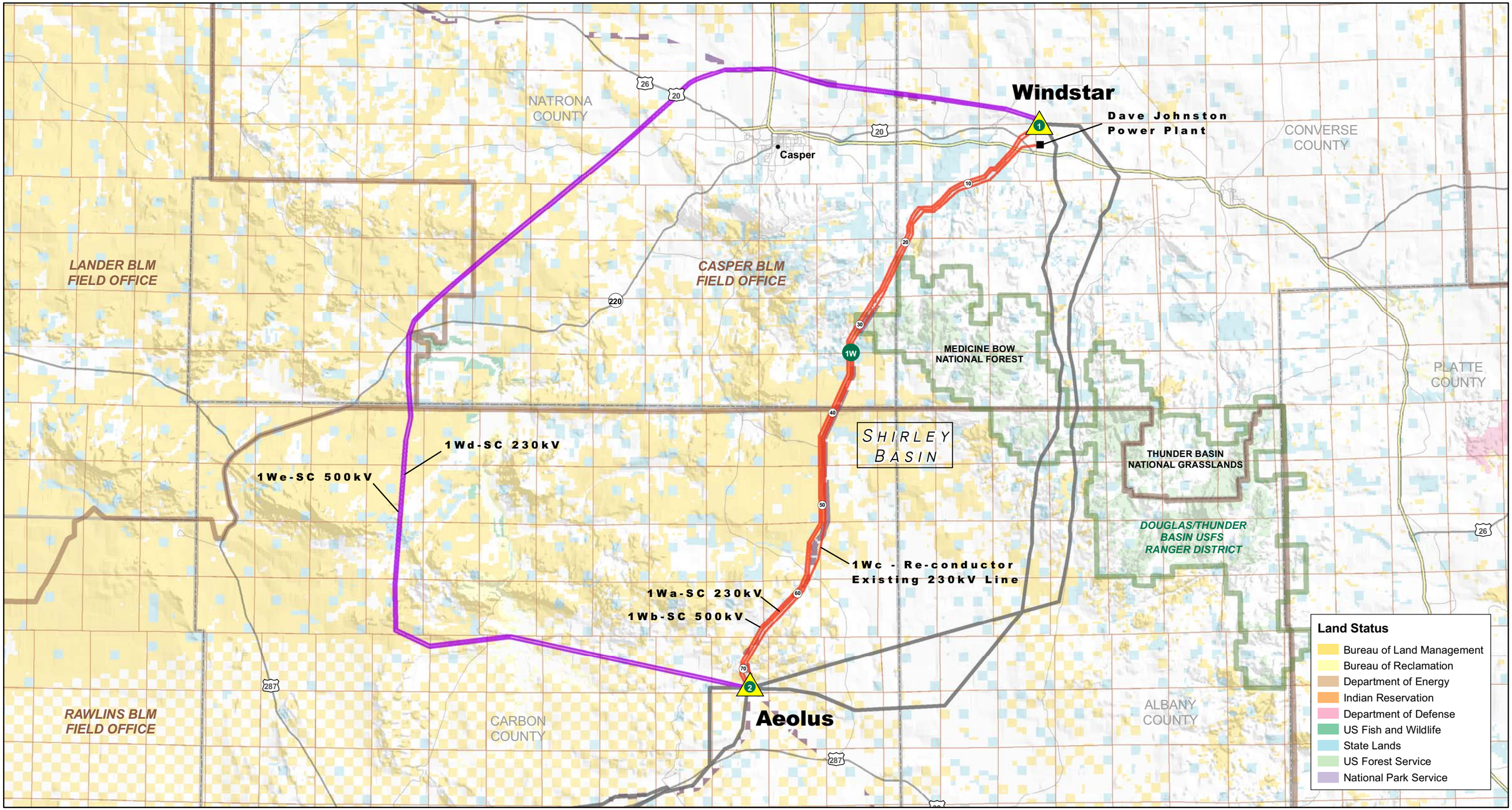
Description of Proposed Corridor

Segment 1 W will comprise one new single-circuit 230kV line (1Wa) and one new single-circuit 500kV line (1Wb) that will run southwest from the new Windstar Substation, located approximately 2 miles north of the Dave Johnston Power Plant at Glenrock, Wyoming, to the new Aeolus Substation near Hanna, Wyoming. Segment 1 W will also include reconductoring of the existing Dave Johnston – Difficulty 230kV line (1Wc) with a higher-capacity conductor to increase the load carrying capacity of this existing line segment. The proposed corridors (1Wa and 1Wb) will proceed parallel to and separated by 1,500 feet from each other and the existing line (1Wc). The 230kV line (1Wa) will be carried on steel H-frame structures between 60 and 90 feet tall, and the 500kV line (1Wb) will be carried on single-circuit lattice steel structures between 145 and 180 feet tall. The existing 230kV line (1Wc) is carried on H-frame wood pole structures with heights varying between 60 and 90 feet above ground. Ten percent of these structures may need to be replaced. The reconductored line segment will extend from the existing terminus in the Dave Johnston Substation to a new line termination bay in the planned Aeolus Substation (Idaho Power Company and Rocky Mountain Power 2008).

1Wc leaves the existing Dave Johnston Substation and proceeds south and west to the vicinity of the Aeolus Substation. Upon reaching the Aeolus Substation, 1Wc will be looped in and back out of the Aeolus Substation, continuing as it now exists on to the next substation. From the vicinity of the Windstar and Dave Johnston Substations, the two new lines (1Wa and 1Wb) proceed southwest across the North Platte River, the Burlington Northern and Chicago and Northwestern railroads, and U.S. Routes 20/26/87 and 25, and then continue for another 16 miles to the vicinity of Barner Mountain. Corridor 1Wc crosses all the same linear features except for the Burlington Northern Railroad and continues for 15 miles to the vicinity of Barner Mountain. At this location, the lines turn more southerly across the west side of this mountain crossing into Natrona County at mile 22. After crossing the Natrona/Converse County line at mile 39.6, the lines proceed parallel to the existing 230kV line across the West Fork of Duck Creek and over the Deer Creek Range. The lines then proceed generally south, passing east of Bates Creek Reservoir before crossing SR 487. The proposed lines parallel the west side of SR 487 for about 14 miles to mile 59.5 where the lines turn southwest and proceed along the northwest side of the Freezeout Mountains before terminating at the proposed Aeolus Substation at mile 72.1 (mile 70.6 for the Dave Johnson – Difficulty line).

Conformance with the WWEC and Other Designated ROW Corridors

The primary objectives during routing of Segment 1 W were to follow the existing utility corridor, the WWEC, and other designated ROW corridors, as directed by the BLM, USFS, and the State of Wyoming. One segment of WWEC is proposed between the Windstar Substation and the Aeolus Substation. The proposed 1Wa, 1Wb, and 1Wc, combined, are within or parallel to the WWEC or projected WWEC (which is also an existing utility corridor in this portion) for a combined total of 206.9 miles out of a combined total corridor length of 215.6 miles. In addition, the proposed 1Wa, 1Wb, and 1Wc, combined, follow a designated BLM ROW corridor for the entire corridor extent, minus a total of 30.8 miles in the Bates Hole Management Area, as described above.



0 10 Miles

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Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 1W

Figure 4 - 2

4.2.3 Segment 2 – Aeolus to Creston (reference points 2 to 3)

Segment 2 is shown on **Figure 4-3**. This corridor will extend from the Aeolus Substation near Hanna, Wyoming to the new Creston Substation, located approximately 5 miles south of Wamsutter, Wyoming. This corridor will consist of two transmission line circuits that will be carried on double-circuit 500kV structures that will be energized at 230kV on one side and 500kV on the other. Segment 2 will generally use 500kV double-circuit lattice towers between 160 and 190 feet tall. .

This corridor comprises two subsegments, the Seven Mile Subsegment to the east and the Rawlins Subsegment to the west. In routing this segment the existing 230kV utility corridor, which is also a WWEC and a BLM-designated ROW corridor, was analyzed using aerial photos, topographic maps, GIS resume overlays, and RMPs to identify constraints that require deviation from the existing corridor.

4.2.3.1 Seven Mile Subsegment (2 to 2c)

Proposed Corridor (2, 2a, 2c)

The proposed corridor within the Seven Mile Subsegment is shown on **Figure 4-3**. The Seven Mile wind park is planned just southwest of the Aeolus Substation site, which precludes paralleling the existing transmission line corridor and the WWEC in this subsegment. The proposed corridor was routed to avoid the wind park and return to the existing corridor as soon as possible. The proposed corridor in the Seven Mile Subsegment will exit the planned Aeolus Substation directly west, crossing County Route 121 and the Medicine Bow River, paralleling the north side of a the proposed wind farm. About 4.3 miles west of the substation, this corridor turns south following the western boundary of the wind farm for about 8.1 miles to the north side of US 30/287 about 3.5 miles east of community of Elmo, Wyoming.

Advantages of the proposed corridor include (**Table 4-5**):

- Avoids the Seven Mile wind park;
- There are few known biological resource constraints;
- Presents no known cultural resource constraints; and
- Presents no significant visual resource concerns (VRM Class I or II).

Disadvantages of the proposed corridor include (**Table 4-5**):

- Adds 2.6 miles total length in order to avoid wind park;
- Does not follow the WWEC;
- Does not follow the existing transmission line;
- Is a greenfield route for its 12.5-mile length;
- Crosses 1.5 miles of active mining area;
- Crosses 5.5 miles big game critical winter range;
- There are many raptor nests in close proximity to the corridor; and
- Crosses one sage grouse lek 0.65-mile buffer.

The proposed corridor was selected because it avoids the wind park, and does not create significant environmental affects.

Alternative Corridor Considered, but Not Proposed (2, 2b, 2c)

One alternative was considered for this subsegment, but it is not proposed for detailed analysis, as shown on **Figure 4-3**. This corridor exits the Aeolus Substation, crosses the Medicine Bow River, and heads south along an existing 230kV utility corridor for approximately 9 miles where it meets US30/287 and the Project proposed corridor.

This corridor was initially considered because it would follow an existing 230kV utility corridor that is also a WWEC corridor and a BLM-designated ROW corridor, and it is a relatively direct route. However, this corridor would interfere with the planned Seven Mile wind park and is therefore not being considered further. This corridor is not proposed for detailed analysis because it is not a feasible alternative, given the constraint of the planned wind park.

Table 4-5 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 2 Seven Mile Subsegment, shown on **Figure 4-3**.

Table 4-5. Corridor Comparisons, Segment 2, Seven Mile Subsegment (2 to 2c)

Attributes	Comparison	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	2, 2a, 2c	2, 2b, 2c
Surface Ownership (miles)		
BLM	3.7	3.4
USFS	0	0
State	1.8	0
Private	6.9	6.5
Total Length	12.5	9.9
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	9.9
Total WWEC	0	9.9
Parallel to Existing Transmission Lines	0	9.9
Environmental Resources (miles)		
Big Game Critical Winter Range	5.5	3.0
Active Mining	1.5	0
Sage Grouse Lek 0.65-mile Buffer	0.2 (1 lek)	0

*Depicted on **Figure 4-3**

4.2.3.2 Rawlins Subsegment (2c to 3)

Proposed Corridor (2c, 2d, 2e, 2f, 2h, 2i, 3)

The proposed corridor within the Rawlins Subsegment is shown on **Figure 4-3**. The proposed corridor in this subsegment begins on the south side of US 30/287, turns southwest and generally parallels the highway for about 21.2 miles, crossing SR 72, Sand Hills, and Dana Ridge. Approximately 3.0 miles northeast of US 80, the proposed corridor angles west across US 30/287 (mile 32.5). The corridor continues for 9.7 miles before crossing US 80 about 6.6 miles east of the community of Sinclair. Proceeding west, the proposed corridor passes south of Graniteville Dome and the State Penitentiary and north of Jefferson Flats before crossing SR 71 about 2.4 miles south of Rawlins. Just west of SR 71, it traverses Coal Creek and Coal Mine Ridge south and parallel to an existing 230kV line. The corridor continues at varying distances from the existing

line to the proposed Creston Substation. In this last 40-mile segment, the corridor crosses Hogback Ridge, Red Rim, and SR 789 before reaching the proposed Creston Substation south of Wamsutter. The proposed 230kV circuit will enter and exit this proposed substation, and the 500kV circuit will bypass the substation on double-circuit steel lattice structures.

This corridor will follow an existing 230kV transmission line that is also a WWEC for 52.4 miles of its 81.2 total miles of length. It diverts from this corridor only in areas where a diversion would avoid sage grouse leks or oil and gas wells and shorten the corridor. In these instances, it follows an existing transportation corridor (US 30/287) instead. The overall approach for the project routing was to avoid a 0.25-mile buffer of all sage grouse leks and attempt to avoid a 0.65-mile buffer around leks unless there was a compelling reason not to. In addition, 250-foot buffers around local oil and gas well heads were avoided.

Advantages of the proposed corridor include (**Table 4-6**):

- Is within or parallel to the WWEC or the projected WWEC (which is also an existing utility corridor) for 52.4 miles out of a total corridor length of 81.2 miles;
- Roughly follows an existing transportation corridor for the remainder of its length;
- Avoids 0.25-mile buffer of all sage grouse leks;
- Has no significant visual resource concerns (VRM Class I or II); and
- Avoids the rural developed areas near Hanna and Fort Steele, Wyoming.

Disadvantages of the proposed corridor include (**Table 4-6**):

- Crosses two 0.65-mile sage grouse lek buffers;
- Many additional sage grouse leks are in proximity to the corridor;
- Crosses 1.3 miles of sage grouse wintering habitat;
- Falls within 0.50-mile buffer of 31 raptor nests;
- Crosses 26.4 miles of big game crucial winter range;
- Traverses 14.0 miles of black-footed ferret non-block clearance area;
- Traverses 1.5 miles of the BLM Continental Divide National Scenic Trail Special Recreation Management Area (SRMA), which includes one crossing of the Continental Divide Trail and one crossing of a second neighboring trail; and
- Traverses 5.4 miles of the BLM Red Rim-Daley Wildlife Habitat Management Area (WHMA).

The proposed corridor was selected because it follows existing linear infrastructure for its entire length, follows the WWEC for most of its length, avoids sage grouse lek 0.25-mile buffers, and generally would result in slightly less effect to visual resources.

Feasible Alternative Corridor (2d, 2f)

One corridor in this subsegment has been determined to be a feasible alternative, as shown on **Figure 4-3**. This alternative is a 28.4-mile corridor that begins at Hanna Junction, just south of the intersection of SR 72 and US 30/287. This alternative follows an existing 230kV transmission line for a total of 23.2 miles beginning at Hanna Junction, crossing to the north side of US 30/287, then heading in a southwesterly direction, crossing Saint Mary's Creek at mile

7.3, running about 1 mile south of Saint Mary's Ridge and crossing Saint Mary's Creek again at mile 14.3, just north of Walcott at mile 17.6. At this point this alternative proceeds due west for 5.7 miles, still following the existing 230kV transmission line, traversing the southern Fort Steele Breaks, crossing Saint Mary's Creek a third time at mile 20.4 and the North Platte River at mile 22.1, to a location south of Fort Steele at mile 23.3. At this point, this alternative departs from the existing transmission line and heads generally southwest, crossing to the south side of US 80 and US 30/287 at mile 25.8, and continuing another 2.5 miles to a location just southeast of Grenville Dome and approximately 2 miles southeast of Sinclair.

This corridor was initially considered because it would follow an existing utility corridor that is also a WWEC corridor and a BLM-designated ROW corridor. However, this alignment is not the proposed corridor because it would encroach upon one 0.25-mile sage grouse lek buffer (as well as two additional 0.65-mile sage grouse lek buffer), and a number of gas or oil well buffers.

Advantages of this alternative corridor include (**Table 4-6**):

- Is within the WWEC or projected WWEC for 17.6 miles more than the proposed corridor;
- Parallels an existing utility corridor for 17.6 miles more than the proposed corridor;
- Avoids the Continental Divide National Scenic Trail SRMA and historic trail crossings, whereas the proposed corridor crosses 1.5 miles of the SRMA with two trail crossings; and
- Crosses 3.4 miles less big game crucial winter range than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-6**):

- Is 0.4 mile longer than the proposed corridor;
- Crosses two sage grouse lek 0.65-mile buffers, whereas the proposed corridor crosses one;
- Crosses 3.1 miles of the Red Rim-Daley WHMA, whereas the proposed corridor avoids this area; and
- Passes through the rural developed areas near Hanna and Fort Steele, Wyoming.

This corridor is considered a feasible alternative because it would follow an existing utility corridor that is also a WWEC corridor and a BLM-designated ROW corridor. However, this alignment is not the proposed corridor because, compared to the proposed corridor, it would have more effect on sage grouse leks, would add 0.4 mile in total line length, and crosses a number of oil and gas well buffers.

Alternative Corridor Considered, but Not Proposed (2h, 2g, 2i)

One alternative was considered but is not proposed for detailed analysis, as shown on **Figure 4-3**. This corridor was identified in order to avoid one sage grouse lek 0.65-mile buffer. It is 0.5 mile longer, diverging south of the proposed corridor (which also follows the existing utility corridor and the WWEC) by up to 2 miles (at reference point 2g). However, the BLM, the State of Wyoming, and the WGFD indicated their preference to follow the existing utility corridor and the WWEC in lieu of creating greenfield routes to avoid every sage grouse lek 0.65-mile buffer; therefore, this corridor is not proposed for detailed analysis.

Table 4-6 presents quantitative comparisons of the characteristics of the sets of corridors analyzed for the Segment 2 Rawlins Subsegment, shown on **Figure 4-3**.

Table 4-6. Corridor Comparisons, Segment 2, Rawlins Subsegment (2c to 3)

	Comparison 1 (No Alternatives)	Comparison 2		Comparison 3 (No Alternatives)	Comparison 4		Comparison 5 (No Alternatives)
	Proposed	Proposed	Feasible Alternative	Proposed	Proposed	Considered Not Proposed	Proposed
	Corridor Reference Points*						
Attributes	2c, 2d	2d, 2e, 2f	2d, 2f	2f, 2h	2h, 2i	2h, 2g, 2i	2i, 3
Surface Ownership (miles)							
BLM	1.9	8.1	10.2	10.4	4.9	6.6	5.5
USFS	0	0	0	0	0	0	0
State	0	2.4	1.7	1.1	1.7	0.1	0
Private	3.2	17.4	16.5	13.0	6.4	6.8	5.0
Total Length	5.2	28.0	28.4	24.4	13.0	13.5	10.6
Corridors (miles)							
Within WWEC (Federal)	0.4	1.5	8.0	7.9	4.9	0	2.5
Within Projected WWEC (Non-Federal)	1.2	4.1	15.2	10.1	8.1	0	4.2
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	3.6	0	0	0	0	0	3.9
Total	5.2	5.6	23.2	18.0	13.0	0	10.6
Parallel to Existing Transmission Lines	5.2	5.6	23.2	18.0	13.0	0	10.6
Environmental Resources (miles)							
Big Game Crucial Winter Range	0	13.7	10.3	12.7	0	0	0
0.50-mile Raptor Nest Buffer	0	0	0	3.3 (10 nests)	6.6 (19 nests)	4.5 (8 nests)	1.7 (2 nests)
Sage Grouse Lek 0.25-mile Buffer	0	0	0	0	0	0	0
Sage Grouse Lek 0.65-mile Buffer	0	0.4 (1 lek)	2.2 (2 leks)	0	0.8 (1 lek)	0	0
Sage Grouse Wintering Area	0	0	0	1.3	0	0	0
Black-footed Ferret Non-Block Clearance	0	0	0	0	3.4	3.3	10.6
Historic Trail buffer/ Continental Divide National Scenic Trail SRMA crossings	0	0	0	1.5 (2 crossings)	0	0	0
Red Rim-Daley WHMA	0	0	3.1	4.0	1.4	0	0

*Depicted on **Figure 4-3**

4.2.3.3 Summary of Segment 2 Corridors

Description of Proposed Corridor

This corridor will extend from the Aeolus Substation near Hanna, Wyoming to the new Creston Substation, located approximately 5 miles south of Wamsutter, Wyoming. This corridor will consist of one double-circuit transmission line that will be carried on double-circuit structures designed for 500kV, but will be energized at 230kV on one side and 500kV on the other. Segment 2 will generally use 500kV double-circuit lattice structures between 160 and 190 feet tall (Idaho Power Company and Rocky Mountain Power 2008).

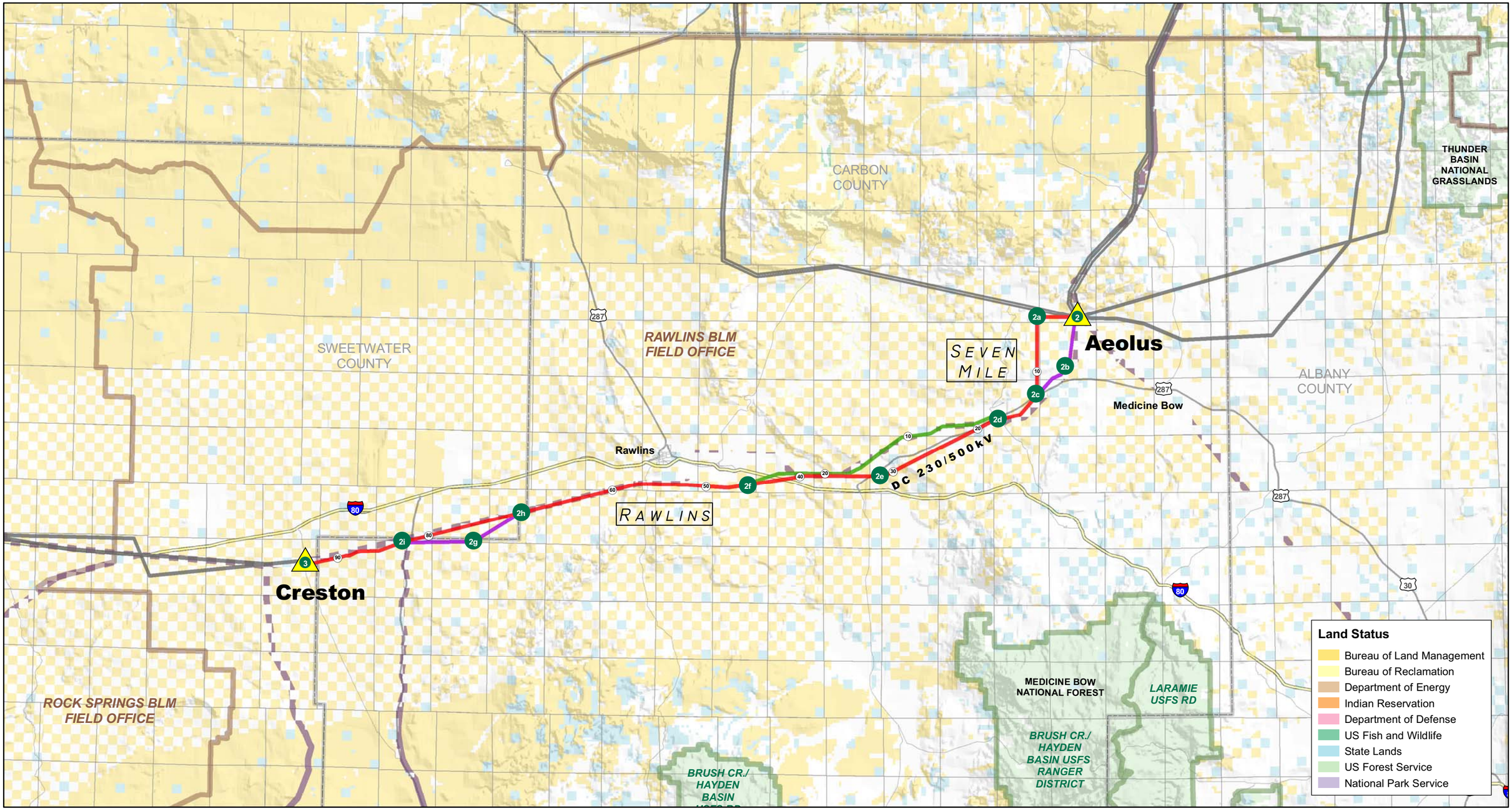
The proposed corridor will exit the planned Aeolus Substation directly west, crossing County Route 121 and the Medicine Bow River, paralleling the north side of a the proposed wind farm. About 4.3 miles west of the substation, this route turns south following the western boundary of the wind farm for about 8.1 miles to the north side of US 30/287 about 3.5 miles east of the community of Elmo, Wyoming. At the south side of US 30/287, it turns southwest and generally parallels the highway for about 21.2 miles, crossing SR 72, Sand Hills, and Dana Ridge. Approximately 3.0 miles northeast of US 80, the proposed corridor angles west across US 30/287 (mile 32.5). The route continues for 9.7 miles before crossing US 80 about 6.6 miles east of the community of Sinclair. Proceeding west, the proposed corridor passes south of the Graniteville Dome and the State Penitentiary and north of Jefferson Flats before crossing SR 71 about 2.4 miles south of Rawlins. Just west of SR 71, it traverses Coal Creek and Coal Mine Ridge south and parallel to an existing 230kV line. The corridor continues at varying distances from the existing line to the proposed Creston Substation. In the last 40-mile segment, the corridor crosses Hogback Ridge, Red Rim, and SR 789 before reaching the proposed Creston Substation south of Wamsutter. The proposed 230kV circuit will enter and exit this proposed substation, and the 500kV circuit will bypass the substation on double-circuit steel lattice structures.

Description of Feasible Alternative Corridor

This alternative is a 28.4-mile corridor that begins at Hanna Junction, just south of the intersection of SR 72 and US 30/287. This alternative follows an existing 230kV transmission line for a total of 23.2 miles beginning at Hanna Junction, crossing to the north side of US 30/287, then heading in a southwesterly direction, crossing Saint Mary's Creek at mile 7.3, running about 1 mile south of Saint Mary's Ridge and crossing Saint Mary's Creek again at mile 14.3, just north of Walcott at mile 17.6. At this point, this alternative proceeds due west for 5.7 miles, still following the existing 230kV transmission line, traversing the southern Fort Steele Breaks, crossing Saint Mary's Creek a third time at mile 20.4 and the North Platte River at mile 22.1, to a location south of Fort Steele at mile 23.3. At this point, this alternative departs from the existing transmission line and heads generally southwest, crossing to the south side of US 80 and US 30/287 at mile 25.8, and continuing another 2.5 miles to a location just southeast of Grenville Dome and approximately 2 miles southeast of Sinclair, where it rejoins the proposed corridor.

Conformance with the WWEC and Other Designated ROW Corridors

The proposed corridor follows the WWEC, which is also a BLM-designated ROW corridor (BLM 2008), where possible. It diverts only to avoid a planned wind park, sage grouse leks, and oil and gas well infrastructure. The proposed corridor is within or parallel to the WWEC or the projected WWEC (which is also an existing utility corridor) for 52.4 miles out of a total corridor length of 81.2 miles.



0 10 Miles

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Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
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Project Routes
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- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 2

Figure 4 - 3

4.2.4 Segment 3 – Creston to Bridger (reference points 3 to 4)

Segment 3 will consist of a double-circuit transmission line from the Creston Substation south of Wamsutter, Wyoming to the new Jim Bridger Substation just west of the Jim Bridger Power Plant (**Figure 4-4**). The line will be designed and constructed to double-circuit 500kV standards, however, one circuit will be energized at 230kV and the other circuit will be energized at 500kV. Segment 3 will use 500kV double-circuit lattice steel towers that are between 160 and 190 feet tall (Idaho Power Company and Rocky Mountain Power 2008).

For Segment 3 the decision framework was consistent across the entire segment; therefore, this segment comprised only one subsegment, the Tipton Subsegment, as shown on **Figure 4-4**.

4.2.4.1 Tipton Subsegment (3 to 4)

Proposed Corridor (3, 3a, 4)

This 55.1-mile-long segment begins at the Creston Substation and proceeds west for 17 miles, at which point it turns northwest and crosses US 80 at mile 19.1. This 17-mile segment parallels US 80 approximately 2 to 3 miles to the south and then to the north of the Delaney Rim. Once north of US 80, the proposed corridor stays north of this highway until it reaches the east side of the Jim Bridger Power Plant access road. In this segment, oil and gas pipelines and wells are significant routing considerations. About 1,500 feet east of the plant access road, this route angles to the north and then northwest on the east side of Deadman Wash. Approximately 2.0 miles north of the turn, the 230kV circuit will leave the 500kV line and continue for about 4.3 miles into the northeast corner of the existing Jim Bridger Substation. Approximately 3.3 miles north of the same turn the proposed 500kV line will enter the proposed Bridger 500kV Substation. From the 500kV yard, a 345kV line will extend north and then west around the existing power plant for about 5.1 miles before connecting into the existing 345kV yard and a 3.1 mile 230kV line will extend to the existing 230kV yard...

The proposed corridor will generally follow I-80 and an existing utility corridor. Portions of the proposed corridor will also fall within the WWEC corridor; however, use of the full extent of the WWEC is not possible in this segment because of constraints presented by existing development associated with roads, railroad, mining, and oil and gas operations. This segment was routed using the LRT with the WWEC and existing utility corridors weighted heavily positive, followed by manual refinement using aerial photography to avoid constraints related to oil and gas wells and active mining. The BLM Rawlins field office has designated utility corridors, which includes a 4-mile-wide stretch along the I-80 corridor (BLM 2008). The entire Segment 3 proposed corridor occurs within or very close to this designated corridor. The BLM Rock Springs field office has not designated utility corridors, but provides the management direction that existing corridors are preferred windows for placement of new major utilities (BLM 2004).

Advantages of the proposed 500kV corridor include (**Table 4-7**):

- Parallels existing transmission lines for 38.5 miles of the total 45.7 miles of proposed corridor, diverging only to cross from the southern existing line to the northern existing line;
- Is within the WWEC or the projected WWEC for 14.1 miles;
- Has no visual resource concerns (VRM Classes I and II);
- Avoids sage grouse leks;
- Avoids active mining operations; and

- Avoids oil and gas wells.

Disadvantages of the proposed 500kV corridor include (**Table 4-7**):

- Requires 7.2 miles of greenfield ROW;
- Crosses 26.6 miles of big game crucial winter range;
- Encroaches upon raptor nest 0.50-mile buffers in six locations;
- Crosses 2.2 miles of historic trail buffer ;
- Traverses 16.7 miles of black-footed ferret non-block clearance zones;
- Traverses 2.3 miles of slope >15%s;
- Crosses 1.5 miles of active mining; and
- Crosses 0.2 mile of wetlands.

The proposed corridor was selected because it follows existing linear infrastructure and the WWEC to the extent possible given the constraints presented by existing mining and oil and gas development.

Table 4-7. Corridor Comparisons, Segment 3, Jim Bridger Subsegment (3 to 4)

Attributes	Comparison 1			
	Proposed 500kV	Considered Not Proposed 500kV	Proposed 230kV	Proposed 345kV
	Corridor Reference Points*			
	3, 3a, 4	3, 3b, 4	4, 3c	4, 4d, 3c
Surface Ownership (miles)				
BLM	22.3	20.5	3.1	3.0
USFS	0	0	0	0
State	1.0	1.0	0	0
Private	22.4	21.7	1.2	2.2
Total Length	45.7	43.2	4.3	5.1
Corridors (miles)				
Within WWEC (Federal)	7.0	19.2	1.1	0.3
Within Projected WWEC (Non-Federal)	7.1	20.3	0.1	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	2.2	0
Total WWEC	14.1	39.5	3.4	0.3
Parallel Existing Transmission Lines	38.5	46.2	2.2	0
Environmental Resources (miles)				
Big Game Crucial Winter Range	26.6	23.7	2.5	3.4
Groundwater Recharge Area	0	0	1.5	1.4
Historic Trail Buffer	2.2	2.2	0.8	0.6
Active Mining	1.5	1.5	0	0.6
Raptor Nest 0.50-mile Buffer	7.7 (6 nests)	8.3 (5 nests)	0.7 (2 nests)	1.5 (2 nests)
NWI Wetland	0.2	0.1	0	0.2
Developed Area	0.3	2.3	0	0
Black-footed Ferret Non-Block Clearance	16.7	16.7	0	0
Slope >15%	2.3	2.9	0.1	0.1

*Depicted on **Figure 4-4**

Alternative Corridor Considered, but Not Proposed (3, 3b, 4)
One 500kV alternative corridor was considered for this subsegment, but is not proposed for detailed analysis (**Figure 4-4**). This alternative diverges from the proposed corridor at mile 4.1, just west of Wamsutter Rim, and extends generally west along the WWEC for approximately 13 miles, passing through Tipton, to meet I-80/US 30 (where it also bisects the proposed corridor). This alternative then crosses to the north side of I-80/US 30 and continues generally west along the WWEC and just north of the I-80/US 30 corridor for about an additional 17 miles, passing north of Table Rock, crossing Patrick Draw, and rejoining the proposed corridor at a location approximately 2.5 miles northwest of the intersection of I-80/US 30 and Bitter Creek Road.

This alternative is not proposed for further consideration because following the WWEC is not practicable in this segment because of constraints presented by existing roads, railroads, mining, and oil and gas operations.

Table 4-7 presents quantitative comparison of the preferred and alternate 500kV corridors and also data on the characteristics of the 230kV and 345kV corridors analyzed for the Segment 3 Subsegment, shown on **Figure 4-4**.

4.2.4.2 Summary of Segment 3 Corridors

Description of Proposed Corridor
Segment 3 will consist of a double-circuit 500kV transmission line from the Creston Substation south of Wamsutter, Wyoming to the new Bridger 500kV Substation just southeast of the Jim Bridger Power Plant. The line will be designed and constructed to double-circuit 500kV standards and will be energized at 230kV on one side and 500kV on the other. Segment 3 will use 500kV double-circuit lattice steel towers that are between 160 and 190 feet tall. (Idaho Power Company and Rocky Mountain Power 2008), except for the last 4.3 miles of 230kV line that will be carried on steel H-frame structures. Also the 345kV connection (5.1 miles) between the proposed substation and the existing Jim Bridger Substation will be carried on single circuit lattice structures.

This segment begins at the Creston Substation and proceeds west for 17 miles, at which point it turns northwest and crosses US 80 at mile 19.1. This 17-mile segment generally parallels US 80 approximately 2 to 3 miles to the south and then to the north of the Delaney Rim. Once north of US 80, the proposed corridor stays north of this highway until it reaches the east side of the Jim Bridger Power Plant access road. In this segment, oil and gas pipelines and wells are significant routing considerations. About 1,500 feet east of the plant access road, this route angles to the north and then northwest on the east side of Deadman Wash. Approximately 2.0 miles north of the turn, the 230kV circuit will leave the 500kV line and continue for about 4.3 miles into the northeast corner of the existing Jim Bridger Substation. Approximately 2.6 miles north of this same turn the proposed 500kV line enters the proposed Bridger 500kV substation.

Conformance with the WWEC and Other Designated ROW Corridors
Of the combined total 55.1 miles of proposed corridor (500kV, 345kV, and 230kV), 15.6 miles are within the WWEC or the projected WWEC, and 2.2 miles are parallel to the WWEC or the projected WWEC. Use of the full extent of the WWEC is not possible in this segment because of constraints presented by existing energy development. The proposed corridor follows the BLM Rawlins field office management direction to place utilities along the I-80 corridor (BLM 2008) and the BLM Rock Springs field office management direction to place major utilities along existing corridors (BLM 2004).

0 10 Miles

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME — Corridor Subsegment
- 2a — Subsegment Reference Point
- 20 — Mile Marker

Project Routes
- Proposed
- Considered, Not Proposed
- Other Segment
- DC — Double Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 3
Figure 4 - 4

4.2.5 Segment 4 – Bridger to Populus (reference points 4 to 5)

Segment 4 will consist of a double-circuit 500kV transmission line extending from the proposed Jim Bridger Substation in Sweetwater County, Wyoming to the new Populus Substation near the town of Downey in Bannock County, Idaho. This corridor proceeds east to west, passes north of the community of Rock Springs, Wyoming, south of the community of Kemmerer, Wyoming, and south of Montpelier, Idaho.

The major factors influencing routing decisions for this segment were:

- the existing 345kV transmission corridor comprises two or three single-circuit 345kV lines along the entire length of the segment;
- Routing contraints posed by north-south oriented NWRs (Seedskadee, Coleville Meadows, and Bear Lake);
- Fossil Butte National Monument;
- Cache National Forest cannot be reasonably avoided and should be traversed within or in proximity to the existing National Forest utility corridor included in the Forest Plan; and
- WWEC to be used where feasible.

Where practical, the proposed double-circuit 500kV line was manually routed to follow the existing 345kV circuits (with a 1,500 foot center line offset from the nearest existing line). Where the existing transmission corridor could not be followed, deviations or refinements were made using the LRT and adjusted manually using aerial photography and topographic maps.

Segment 4 includes five subsegments (**Figure 4-5)**, each having its own set of opportunities and constraints:

a. the Rock Springs subsegment that extends 52.1 miles west from the proposed Jim Bridger Substation (from reference point 4 to 4b);
b. the Kemmerer subsegment that extends 93.4 miles from the vicinity of Seedskadee NWR to the area east of Bear Lake (from reference point 4b to 4k;
c. the Montpelier subsegment that extends 18.6 miles to the vicinity of the eastern boundary of the Cache National Forest (from reference points 4k to 4n;
d. the Cache National Forest subsegment that is 10.2 miles long and extends across this National Forest (from reference point 4n to 4p; and
e. the Populus subsegment that continues 26.3 miles to the Populus Substation from the vicinity of the National Forest (from reference point 4p to 5.

4.2.5.1 Rock Springs Subsegment (4 to 4e)

Topography along this subsegment is generally flat to rolling, with numerous oil and gas wells and considerable coal mining. Routing through this subsegment focused on paralleling the north or south side of the existing 345kV corridor (three existing single-circuit 345kV lines). The most significant constraint in this subsegment is the Seedskadee NWR along the Green River. Other constraints include trona and coal mining, sage grouse leks and buffers, VRM Class II lands, and raptor nests and buffers. The primary routing opportunities are the existing transmission corridor and the WWEC.

Proposed Corridor (4, 4a, 4b)

The proposed corridor in this subsegment would extend from the preferred Jim Bridger Substation site for 52.1 miles to reference point 4b; however for comparison to the only alternative, the comparison has been extended to reference point 4e (mile 63.1), the first common point between those corridors (**Figure 4-5**). The proposed double-circuit 500kV corridor leaves the proposed Jim Bridger 500kV Substation passing south of the Jim Bridger Power Plant and then paralleling the south side of the existing 345kV corridor for 40.5 miles. About 6 miles east of Seedskadee NWR the proposed corridor angles to the south to reference point 4b and then crosses the Green River (**Figure 4-5**). After crossing the river the proposed corridor turns north parallel to the east side of SR 372 for about 3.5 miles where it joins and parallels the south side of the 345kV corridor for about 6.0 miles to reference point 4e.1.

Advantages of the proposed corridor 4, 4a, 4b, 4f, 4e include (Table 4-8):

- Is a relatively direct route, 6.5 miles shorter than the alternative corridor;
- Is located within or adjacent to WWEC for 37.1 miles out of a total proposed corridor length of 63.1 miles;
- Parallels existing 345kV corridor for 46.5 miles out of a total proposed corridor length of 63.1 miles;
- Avoids Seedskadee NWR; and
- Avoids sage grouse leks.

Disadvantages of the proposed corridor include (**Table 4-8**):

- Crosses 7.5 miles of historic trail buffer;
- Crosses 26.0 miles of big game crucial winter range;
- Requires 16.6 miles of greenfield corridor;
- Traverses 2.7 mile of Class II;; and
- Crosses 7.3 miles of trona lease lands.

The proposed corridor was selected because it parallels the existing 345kV corridor to the extent feasible, and minimizes total corridor length and effects to historic trails, big game crucial winter habitat, and trona leased lands, and avoids sage grouse leks.

Alternative Corridor Considered, but Not Proposed (4, 4a, 4d, 4e)

One alternative corridor was considered in this subsegment, but it is not proposed for detailed analysis. This alternative was developed to maximize the use of the proposed WWEC (**Figure 4-5**). This alternative follows the proposed corridor to a location 13.5 miles east of the Green River. The alternative corridor then follows the WWEC for 21.9 miles to the south around the NWR (5 miles to the north) and rejoins the proposed corridor at reference point 4e. As a result of several disadvantages, this alternative corridor was not considered a reasonable alternative and it was eliminated from further consideration.

Advantages of this alternative corridor include (**Table 4-8**):

- Is within or adjacent to the WWEC for 59.9 miles, 21.8 miles more than the proposed corridor;

- Avoids Seedskadee NWR; and
- Parallels the existing 345kV corridor for 38.3 miles.

Disadvantages of this alternative corridor include (**Table 4-8**):

- Is approximately 6.5 miles longer than the proposed corridor;
- Crosses 0.6 miles and 3.4 miles of .25 and .65 sage grouse lek buffers;
- Crosses 1.1 more miles of trona lease lands than the proposed corridor;
- Requires 14.7 miles more greenfield ROW;
- Crosses 9.0 miles more big critical winter habitat than the proposed corridor;
- Crosses 1.2 miles more VRM Class II lands than the proposed corridor; and
- Crosses 3.4 miles more of historic trail buffer than the proposed corridor.

This corridor is not proposed for detailed analysis because following the WWEC and this corridor results in a longer corridor with much more greenfield development and more potential effects to visual resources, historic trail buffer, and sage grouse leks.

Table 4-8 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 4 Rock Springs Subsegment, shown in **Figure 4-5**.

Table 4-8. Corridor Comparisons, Segment 4, Rock Springs Subsegment (4 to 4e)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	4, 4a, 4b, 4f, 4e	4, 4a, 4d, 4e
Surface Ownership (miles)		
BLM	25.7	29.8
U.S. Bureau of Reclamation (BOR)	2.1	2.1
USFS	0	0
State	1.9	0.2
Private	33.3	37.4
Water	0.1	0.1
Total Length	63.1	69.6
Corridors (miles)		
Within WWEC and projected WWEC	25.5	48.3
Within WWEC (Fed only)	11.9	21.9
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	11.6	11.6
Total WWEC	37.1	59.9
Parallel Existing Transmission Lines	46.3 (39.5 DP)	38.3
Environmental Resources (miles)		
Big Game Crucial Winter Range	26.0	35.0
VRM Class II (BLM Land)	2.7	3.9
Historic Trail buffer	7.5 (6 crossings)	10.9 (6 crossings)
Sage Grouse Lek 0.25-mile Buffer	0	0.6
Sage Grouse Lek 0.65-mile Buffer	0	3.4
Slope >15%	12.3	15.4

*Depicted on **Figure 4-5**

4.2.5.2 Kemmerer Subsegment (4b to 4k)

This subsegment has been the subject of considerable discussion concerning resource issues including the sage grouse leks, historic trails, VRM Class II lands, and SMAs. **Figures 4-5** and **4-5a** show the location of alternative corridors considered and major constraints and opportunities evaluated. Major meetings include:

- BLM Scoping Meeting as part of the formal EIS process on June 12, 2008;
- Field visit to historic trail crossings of the existing 345kV lines, which involved Wyoming Historic Trails and the Oregon California Trail Association took place in June 24, 2008;
- Follow-up stakeholder meeting in the Cokeville area attended by WGFD, BLM, Idaho Fish and Game, USFWS, NPS, and Idaho and Wyoming Governor's offices and other interested stakeholders on July 10, 2008;
- BLM Kemmerer Field Office (FO) meeting involving the Companies, BLM, NPS, and FWS on July 22, 2008. Representatives of WGFD provided written comments.

While a better understanding of resource concerns was reached, no route location was agreed on. Of all the potential routes identified and evaluated by the companies and others, four stand out: Companies proposed corridor, BLM Kemmerer FO preferred corridor, Wyoming Office of the Governor identified corridor[5] and Companies feasible (southern) corridor.

Proposed Corridor (4b, 4f, 4e, 4f.2, 4g.1, 4f.3, 4j, 4k)

The Companies proposed corridor would traverse generally rolling to steep topography from reference point 4b on the east side of the Green River to reference point 4k (**Figure 4-5**), just northwest of the Idaho/Wyoming border and 4.0 miles north of US Route 30, a distance of approximately 93.4 miles (**Figure 4-5**). The most significant routing opportunity in this subsegment is the existing 345kV corridor (three 345kV lines that extend the length of this segment).

After crossing the Green River, the proposed corridor turns north parallel to State Route 372 for about 3.5 miles, where it joins the existing 345kV corridor. It then parallels the south side of this existing corridor for 42 miles before crossing to the north side this corridor at about mile 100.6 about 2.3 miles west of Willow Creek. The proposed corridor remains on the north side of the 345kV corridor for about 7.0 miles and crosses Ham's Fork before turning north and leaving the existing 345kV lines. The proposed corridor leaves the existing corridor because of the many constraints in the area of Cokeville including historic trail crossings, BLM SMA, and a potential conservation easement involving the Cokeville Meadows NWR west of US Route 30/89.

For the next approximately 24.0 miles the proposed corridor proceeds on greenfield ROW, crossing Dempsey Ridge, Brunei Creek, and US 30/89 about 2.6 miles north of Cokeville. West of this highway the corridor rejoins the north side of the existing transmission corridor and parallels it to reference point 4j. At point 4j the corridor angles north away from the 345kV lines for about 2.0 miles before turning west to cross US 30/89 again just south of Sheep Creek Reservoir and rejoins the transmission corridor again and parallels its north side to reference point 4k.

[5] The Wyoming Office of the Governor submitted a letter to BLM on August 18, 2008 requesting that a corridor following the existing 345kV transmission lines be evaluated in detail in the DEIS.

Advantages of the proposed corridor include (**Table 4-9**):

- Parallels the existing 345kV corridor for 58.6 miles of the total 93.4 miles of proposed corridor;
- Avoids the Cokeville Meadows NWR;
- Crosses only 1.3 miles of irrigated farmland;
- Avoids active trona mining areas and stays to the north of possible subsidence areas;
- Crosses only 0.2 miles of active mining;
- Avoids BLM SMA;
- Avoids planned Willow Creek Reservoir and crosses Dempsey Ridge Reservoir where it can be easily spanned;
- The one high quality trail that would be crossed is at a location that will be inundated by the proposed reservoir expansion; and
- Passes more than 6.0 miles to the north of the Fossil Butte National Monument Visitors' Center, minimizing potential visual effects.

Disadvantages of the proposed corridor include (**Table 4-9**):

- Crosses 17.1 miles of VRM Class II on BLM land;
- Crosses 2.3 miles of high-quality historic trail buffer;
- Crosses 2.8 miles of wilderness study area 0.5-mile buffer;
- Crosses 1.5 miles of unstable soils; and
- Crosses 31.5 miles of big game crucial winter habitat.

Feasible Alternative Corridor (BLM Kemmerer FO Preferred Alternative - 4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k)

In January 2008, the BLM Kemmerer FO proposed an alternative corridor well to the south of the proposed corridor to avoid environmental constraints along the existing 345kV transmission lines. The initial southern route incorporated segments proposed by both the Companies and Kemmerer FO and is depicted on **Figure 4-5** as 4b, 4b.1, 4b.2, 4b.9, 4b.10, 4b.11, 4b.12, 4j,4k. Concerns from WGFD resulted in the Kemmerer FO adjusting the corridor to the alignment depicted on **Figure 4-5** as 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12.

The overall corridor alternative, including the Kemmerer FO preferred corridor, departs from the proposed corridor just west of Seedskadee NWR and trends west, crossing active trona mines owned by FMC, to the area just west of the Chevron coal mine south of the community of Kemmerer where at reference point 4b.1 this alternative corridor angles north toward US 30/89 and reference point 4b.4. From this location this alternative corridor proceeds west in proximity to and south of US 30/89 for about 12.0 miles. Just southwest of the intersection of US 30/89 and SR 89, this corridor crosses the later highway and turns northerly for 1.5 miles before crossing into Cokeville Meadows NWR on private land, Once across the NWR, this corridor continues for 16.0 miles, generally following the east side of the Wyoming/Utah and then the Wyoming/Idaho state lines. North of Garret Creek, this corridor angles northwest across the state line into Idaho to reference point 4j and the proposed corridor from point 4j to point 4k.

Advantages of this alternative corridor include (**Table 4-9**):

- Parallels existing transmission lines for 31.5 miles;
- Avoids WSAs;
- Avoids prairie dog towns;
- Avoids the Kemmerer SMA immediately adjacent to US 89/30:
- Crosses 1.1 miles less wetland than the proposed corridor;
- Crosses 10.5 miles less VRM Class II land than the proposed corridor; and

Disadvantages of this alternative corridor include (**Table 4-9**)

- Is 13.0 miles longer than the proposed corridor;
- Passes within one mile south of Fossil Butte National Monument and would be visible from the Visitors' Center
- Crosses 35.9 miles of slope >15%;

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- Crosses 5.5 miles more SMA than proposed corridor:
- Requires 29.7 miles more greenfield corridor than proposed corridor;
- Traverses 6.7 miles more of active coal mining area than the proposed corridor;
- Traverses active trona mining area where solution mining may cause subsidence issues in the future;
- Crosses 5.5 miles more of irrigated agriculture than the proposed corridor;
- Crosses 53.9 miles of sage grouse core area, 29.2 miles more than the proposed corridor;
- Crosses a portion of the landing strip airport buffer;
- Crosses 4.6 miles of Cokeville Meadows NWR (on private and state lands);
- Crosses 7.7 miles more big game critical habitat than the proposed corridor; and

While this corridor is preferred by the Kemmerer FO, it is not recommended as the proposed corridor, because of the longer length, crossing of the SMA, amount of sage grouse core area and active coal leases crossed, visual proximity to Fossil Butte National Monument and proximity to the airstrip.

The Companies would recommend two variations to the corridor location if this alternative corridor were selected as the preferred alternative:

1. Modify the alignment to follow reference points 4b.1, 4b.2, 4b.3, 4b.5 rather than 4b.1, 4b.4, 4b.5. This adjustment will: 1. shift the crossing of the coal-mining area to a location identified through an on-site visit with the coal mine owners that later will include site-specific tower placement to avoid present and future mining areas and to ensure sufficient clearance over off-highway mining equipment and 2. move the alignment of the transmission line from the valley bottom south of US 30/89 to over the high point of the

southern ridgeline thereby reducing visibility from the entrance to Fossil Butte National Monument and from the visitor center.

2. Modify the alignment to follow reference points 4b.6, 4b.7, 4b.8 rather than 4b.6, 4b.8. This adjustment would avoid proximity to the airstrip restricted buffer and avoid crossing .25 mile and .65 mile lek buffers.

Feasible Alternative Corridor (Office of the Governor referenced route - 4b, 4f, 4e, 4f.2,4g.1, 4g, 4j, 4k)

This alternative corridor is very similar to the proposed corridor; however, where the proposed corridor leaves the north side of the existing 345kV corridor at reference point 4g.1, this alternative continues to follow the existing transmission lines except for two short deviations in the vicinity of the two US 30/89 crossings. As a result, this corridor only requires 13.0 miles of greenfield ROW, as compared to 34.8 miles for the proposed corridor. However, this alternative corridor crosses a significant area of many resource constraints east of Cokeville, which is of great concern to the BLM Kemmerer FO. This field office strongly recommended that the Companies avoid this area. Also, the crossing south of Cokeville and west of US 30/89 may be permanently blocked by a conservation easement under development.

Advantages of this alternative corridor include (**Table 4-9**):

- Parallels the existing 345kV corridor for 79.7 miles, almost its total length;
- Requires only 13.0 miles of greenfield ROW;
- Crosses 2.3 miles less VRM Class II lands than the proposed corridor;
- Crosses 16.8 miles less sage grouse core area than the proposed corridor;
- Traverses 4.0 miles less prairie dog town than the proposed corridor; and
- Does not traverse a WSA or wilderness buffer.

Disadvantages of this alternative corridor include (**Table 4-9**):

- Crosses 3.4 miles more miles of high-quality Kemmerer historic trail buffer than the proposed corridor;
- Crosses potential conservation easement south of Cokeville;
- Crosses 3.6 miles of SMA; and
- Crosses 4.1 miles more of big game crucial winter habitat than the proposed corridor.

Although this corridor maximizes paralleling of the existing 345kV corridor, minimizes greenfield ROW requirements and affects the least amount of sage grouse core area, this corridor has been strongly opposed by the Kemmerer FO as having more effect on historic trails, visual quality and the SMA. Route feasibility could also be affected by a conservation easement south of Cokeville. However, this alternative is specifically identified by the Wyoming Office of the Governor for further detailed analysis.

Feasible Alternative Corridor (4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13, 4j, 4k,)

The initial BLM proposal that was used as a starting point for development by the Companies of this alternative corridor as depicted on **Figure 4-5.** Concerns from WGFD and USFWS influenced the routing of this alternative. WGFD preferred a route north of the original southern alternative (reference points 4b.2 to 4b.9) and the USFWS identified private land holdings in the northern portion of the Cokeville meadows NWR that might be available for siting. In addition,

the Kemmerer FO was open to considering a corridor alignment on the east side of US 30/89 adjacent to the highway; even though it would be in the SMA.

The corridor departs from the proposed corridor just west of Seedskadee NWR and trends west, crossing active trona mines owned by FMC, to the area south of the intersection of U.S. Routes 30 and 189 south of Kemmerer. It differs from the Kemmerer Field Office's initial proposal by crossing directly over the coal-mining area, as resolved with an on-site visit with the coal mine owners as mentioned above. From this location and for the remainder of this subsegment, this alternative would be located on a new ROW turning north and then proceeding south of U.S. Route 30/89, then turning north beginning at reference point 4b.7 and continuing north and parallel to the east side of this same highway and Cokeville Meadows NWR for 11.5 miles before angling northwest. The corridor then crosses the highway and the NWR before turning north along the Idaho/Wyoming border for about 3.0 miles before again turning west and proceeding to reference points 4j and 4k.

Advantages of this alternative corridor include (**Table 4-9**):

- Parallels existing transmission lines for 31.5 miles;
- Avoids WSAs;
- Avoids prairie dog towns;
- Passes 6.0 miles south of Fossil Butte National Monument and would not be visible from the Visitors' Center; and,
- Crosses 3.1 miles less VRM Class II land than the proposed corridor;

Disadvantages of this alternative corridor include (**Table 4-9**)

- Is 13.0 miles longer than the proposed corridor;
- Is located within the Kemmerer SMA for 8.6 miles mostly adjacent to US 30/89.
- Requires 33.9 miles more greenfield corridor than proposed corridor;
- Traverses 5.2 miles more of active coal mining area than the proposed corridor;
- Traverses active trona mining area where solution mining may cause subsidence issues in the future;
- Crosses 5.5 miles more of irrigated agriculture than the proposed corridor;
- Crosses 60.8 miles of sage grouse core area, 36.1 miles more than the proposed corridor;
- Crosses 2.3 miles of Cokeville Meadows NWR;
- Crosses 1.1 miles more wetland than the proposed corridor

This corridor was identified as a feasible alternative, but not as the proposed corridor, because of it's longer length, amount of greenfield ROW required, amount of sage grouse core area crossed, and crossing of Cokeville Meadows NWR.

Alternative Corridor Considered, but Not Proposed (4b, 4f, 4c, 4g, 4j, 4k)

This alternative corridor, based on avoiding a 0.65-mile buffer around sage grouse leks, a 250-foot buffer around oil and gas wells, and unstable slopes, would require entirely greenfield ROW

from point 4b to its intersection with the 4g alternative corridor portion that runs north of the NWR, a distance of about 61.0 miles.

Advantages of this alternative corridor include (**Table 4-9**):

- Avoids the WSA and Wilderness buffer.

Disadvantages of this alternative corridor include (**Table 4-9**):

- Requires 36.9 miles more greenfield ROW than the proposed corridor;
- May have to cross 2.0 miles of conservation easement south of Cokeville;
- Crosses 6.6 miles more sage grouse core area than the proposed corridor;
- Crosses 3.3 miles more high-quality historic trail buffer than the proposed corridor;
- Crosses 3.3 miles more irrigated farmland than the proposed corridor;
- Crosses 2.6 miles more NWI wetlands than the proposed corridor; and
- Crosses 13.4 more miles of big game crucial winter habitat than the proposed corridor.

This alternative is much less desirable than the proposed or feasible alternative corridors because of the many more miles of greenfield ROW, the possibility of being blocked by a conservation easement south of Cokeville, and more effect to historic trails, farmland, and wetlands. This corridor was therefore dropped from further consideration.

Alternative Corridor Considered, but Not Proposed (4f, 4f.1, 4f.2)

Early in the routing process, the north side of the existing 345kV corridor 4f, 4f.1, 4f.2 was considered for the proposed transmission line, but it was dropped primarily because of issues with sage grouse leks in favor of the south side (proposed corridor).

Table 4-9 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 4 Kemmerer Subsegment, shown on **Figure 4-5**.

Table 4-9. Corridor Comparisons, Segment 4, Kemmerer Subsegment (4b to 4k)

Identified by	Comparison 1				
	Proposed	Feasible Alternative	Feasible Alternative	Feasible Alternative	Considered Not Proposed
	Companies	BLM Kemmerer FO	Office of the Governor	Companies	Companies
Attributes	Corridor Reference Points*				
	4b, 4f, 4e, 4f.2, 4g.1, 4f.3, 4j, 4k	*4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k*	4b, 4f, 4e, 4f.2, 4g.1, 4g, 4j, 4k	*4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13,4j,4k*	4b, 4f, 4c, 4g, 4j, 4k
	Surface Ownership (miles)				
BLM	47.9	50.8	39.5	49.5	40.1
BOR	3.3	.6	2.1	0.6	2.1
State	4.2	9.4	7.3	8.9	7.2
Private	38.0	45.4	43.8	47.5	44.6
Total Length	93.4	106.2	92.7	106.4	94.0
Parallel to Existing Transmission Lines	Corridors (miles)				
	58.6	31.5	79.7	31.5	22.3
	Environmental Resources (miles)				
Sage Grouse Lek – 0.25mi	0	0.5	0	0	0
Sage Grouse Lek – 0.65mi	7.7	3.7	3.3	0.3	0
Sage Grouse Core Area	24.7	53.9	7.9	60.8	31.3
Cokeville NWR	0	4.6	0	2.3	0
Conservation Easement	0	0	.2	0	2.0
Muledeer Winter Range	6.6	6.8	2.0	12.3	6.1
Elk Calving Range	8.2	0	6.1	0	13.5
Elk Winter Range	5.4	4.4	8.2	0	16.7
Moose Winter Range	6.4	0	5.8	12.9	7.4
Antelope Winter Range	1.7	14.3	4.9	13.3	7.9
Other Big Game Crucial Winter	12.4	12.0	12.2	12.0	12.2
Kemmerer FO Big Game Crucial Range	19.1	19.5	23.4	27.2	32.7
VRM 2	20.0	9.5	17.7	16.9	20.0
VRM 2 BLM only	17.1	7.8	12.9	13.8	15.5
Ferret Non Block	24.4	30.2	24.1	30.1	24.1
Fisheries Streams Buffer	16.2	5.3	16.4	7.9	14.5
Kemmerer # Lowqual Trails Crossed	0	4	0	3	0
Kemmerer Lowqual Trail Buffer	1.3	8.0	27.5	7.6	4.5
Kemmerer # Medqual Trails Crossed	2	0	2	0	0
Kemmerer Medqual Trail Buffer	5.7	0	4.5	0	1.7
Kemmerer # Highqual Trails Crossed	1	0	2	0	2

Identified by	Comparison 1				
	Proposed	Feasible Alternative	Feasible Alternative	Feasible Alternative	Considered Not Proposed
	Companies	BLM Kemmerer FO	Office of the Governor	Companies	Companies
	Corridor Reference Points*				
Attributes	4b, 4f, 4e, 4f.2, 4g.1, 4f.3, 4j, 4k	*4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k*	4b, 4f, 4e, 4f.2, 4g.1, 4g, 4j, 4k	*4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13,4j,4k*	4b, 4f, 4c, 4g, 4j, 4k
Kemmerer Highqual Trail Buffer	2.3	0	5.7	2,5	5.5
Irrigated AG	1.3	4.2	2.6	6.8	4.6
Active Mining	0.2	6.7	0.2	5.4	0.7
Raptor Buffer	1.9	1.2	2.5	1.0	2.5
NWI Wetland	1.5	.4	1.9	2.6	4.1
Slope Instability	1.5	.2	2.7	0.3	3.3
Slope >15%	30.8	35.9	31.5	32.6	34.6
Special Management Area	0	5.5	3.6	8.6	3.5
WT Prairie Dog Towns	4.9	0	0.9	0	0.9
WSA and Wilderness Buffer (0.5 mile)	2.8	0	0	0	0

*Depicted on **Figure 4-5**

4.2.5.3 Montpelier Subsegment (4k to 4n)

The Montpelier subsegment extends 18.6 miles from reference point 4k across the Bear River Valley and continuing to reference point 4n near the eastern boundary of the Cache National Forest (**Figure 4-6**). The primary opportunity in this area is the existing 345kV transmission line corridor. Constraints in this area include the community of Montpelier, the Bear Lake County airport, Bear Lake NWR, wetlands and waterbodies, agricultural lands, the Bear River, big game crucial winter habitat, and local development, including residences.

Proposed Corridor (4k, 4m, 4n)

The proposed corridor in this subsegment extends from reference point 4k west and northwest across U.S. Routes 30 and 189 descending into and across the Bear River and its valley more than a mile south of the community of Montpelier and then proceeds up the hills on the west side of the valley to the vicinity of the Cache National Forest and reference point 4n (**Figure 4-6**). The entire 18.6 miles of this subsegment would be offset a minimum of 1,500 feet to the north of the two sets of existing single-circuit steel lattice 345kV structures located on a single ROW.

Advantages of the proposed corridor include (**Table 4-10**):

- Keeps existing 345kV lines and proposed double-circuit 500kV line in a single corridor through all 18.6 miles of this subsegment;
- Is 1.5 miles shorter and requires 54.5 less acres of ROW;
- Traverses 7.3 miles less of slope >15% compared to the alternative corridor;
- Maintains existing corridors across Bear Lake Valley; and
- Crosses only 1.5 miles of big game crucial winter range.

Disadvantages of the proposed corridor include (**Table 4-10**):

- Creates a corridor comprising three sets of structures (two sets of 345kV single-circuit structures and one set of double-circuit 500kV structures) in one large corridor;
- Traverses 3.3 miles more of irrigated agriculture; and
- Traverses 3.6 miles more of wetlands.

The proposed corridor was selected because it avoids the creation of a second major transmission corridor across the portion of the Bear River valley near Montpelier, Idaho.

Alternative Corridor Considered, but Not Proposed (4k, 4l, 4n)

In this subsegment one alternative corridor was evaluated, which would leave the proposed corridor at reference point 4k and follow an existing single 345kV line northwest to reference point 4l (**Figure 4-6**). This corridor would proceed on new ROW offset 1,500 feet from the existing 345kV line and pass east of the community of Montpelier. About 3 miles north of this community the alternative corridor would angle west (leaving the existing 345kV line) and cross U.S. Route 30, the Bear River, and the Bear River Valley before proceeding up the hillside to the west to reference point 4n (**Figure 4-6**), the majority of which would be on greenfield ROW. Constraints along this corridor include a historic trail, big game crucial winter range, agricultural lands, and wetlands. This alternative, which avoids most of these constraints, has the following advantages and disadvantages.

Advantages of this alternative corridor include (**Table 4-10**):

- Crosses 3.3 miles less irrigated farm land compared to the proposed corridor;
- Crosses 3.6 less miles of wetland than the proposed corridor;
- Parallels existing 345kV line for 10.0 miles; and
- Has less visual effect.

Disadvantages of this alternative corridor include (**Table 4-10**):

- Is 1.5 miles longer than the proposed corridor;
- Crosses two scenic highways;
- Travels 7.3 miles more on slope >15%;
- Requires approximately 10.1 miles more of greenfield ROW;
- Crosses 8.8 miles more of big game crucial winter range than the proposed corridor; and
- Adds new transmission crossing of Bear Lake Valley and US Route 30.

Table 4-10. Corridor Comparisons, Segment 4, Montpelier Subsegment (4k to 4n)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	4k, 4m, 4n	4k, 4l, 4n
Surface Ownership (miles)		
BLM	1.6	2.0
USFS	0.4	0.4
State	0	1.5
Private	16.5	16.1
Total Length	18.6	20.1
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0
Total WWEC	0	0
Parallel Existing Transmission Lines	0	0
Environmental Resources (miles)		
Big Game Crucial Winter Range	1.5	10.3
VRM Class III (BLM Land)	0.7	0.9
Irrigated Agriculture	4.2	0.9
NWI Wetland	4.1	0.4
Scenic Highways Buffer	4.8	6.6
Slope >15%	7.3	14.6

*Depicted on **Figure 4-6**

This corridor was eliminated from detailed analysis because of more substantial effects resulting from the introduction of a new transmission corridor across the Bear River Valley.

Table 4-10 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 4 Montpelier Subsegment, shown in **Figure 4-6**.

4.2.5.4 Cache Subsegment (4n to 4p)

Although there is an existing USFS designated utility corridor through this general area, it can not accommodate the proposed 500kV line offset from the existing 345kV lines by the required 1,500 feet. Constraints along this approximately 10-mile subsegment include steep slopes, highly erodible soils, unstable slopes, a USFS visual retention area, and raptor nests.

Proposed Corridor (4n, 4o, 4p)

The proposed corridor in this subsegment extends from reference point 4n, located about 1.5 miles southeast of the Cache National Forest eastern boundary in Bear Lake County for approximately 10.2 miles to reference point 4p located about 1.5 miles east of State Route 34 in Caribou County (**Figure 4-6**). Of the 10.2 miles, 8.4 miles are located in the National Forest where terrain is irregular, steep, and mostly forested.

The proposed corridor was recommended by the USFS and is generally located in the same area as the Companies' alternative corridor (**Figure 4-6**). It would result in a shorter corridor, requiring less ROW, and traversing less erodible slopes. As a result, this alternative was adopted as the proposed corridor.

Alternative Corridor Considered, but Not Proposed (4n, 4p)

This corridor was an initial attempt at routing through the Cache National Forest. It was not selected for further investigation because the USFS, who is very familiar with existing conditions and responsible for the management of this area, recommended the proposed corridor described above, which is a slightly shorter corridor with fewer angle structures, compared to this alternative. Also, the Companies agreed that the proposed corridor would meet all their criteria, and the proposed corridor would result in slightly less effect than this alternative corridor.

Table 4-11 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 4 Cache Subsegment, shown on **Figure 4-6**.

4.2.5.5 Populus Subsegment (4p to 5)

Proposed Corridor (4p, 5)

In this subsequent, the proposed corridor extends from the east side of State Route 34 in Caribou County, approximately 25.7 miles west, terminating at the Populus Substation in Bannock County near the community of Downey (**Figure 4-6**). The topography is generally rolling to steep to flat and mostly open. Localized constraints include numerous sage grouse leks, particularly west of Bear River; the community of Downey; the air ship east of Downey; recreation areas; big game crucial winter habitat; steep topography; and agricultural land.

Table 4-11. Corridor Comparisons, Segment 4, Cache Subsegment (4n to 4p)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	4n, 4o, 4p	4n, 4p
Surface Ownership (miles)		
BLM	0	0
USFS	8.4	8.9
State	0	0
Private	1.7	1.7
Total Length	10.1	10.6
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0
Total WWEC	0	0
Parallel Existing Transmission Lines		
Environmental Resources (miles)		
Highly Erosive Soils	1.4	2.8
Slope Instability	0.4	0.7
Raptor Nest 0.50-mile Buffer	1.9	0
USFS Retention Area	2.4	3.4

*Depicted on **Figure 4-6**

Initially, corridor selection was directed toward the proposed corridor paralleling the existing 345kV corridor (two single-circuit 345kV lines on a single ROW). However, consideration of existing localized constraints, including a resort/recreation area, sage grouse leks, agriculture,

and topography, resulted in a proposed corridor located north of the existing 345kV lines for most of its length (22.2 miles).

Advantages of the proposed corridor include (**Table 4-12**):

- Avoids resort/recreation area;
- Is 0.6 miles shorter and requires less new ROW; and
- Traverses 1.1 less of severe slopes.

Disadvantages of the proposed corridor include (**Table 4-12**):

- Requires 14.7 miles more of greenfield ROW;
- Crosses 1.7 miles more of prime farmland; and
- Crosses 0.8 miles more of irrigated farm land.

Alternative Corridor Considered, but Not Proposed (4p, 4q, 5)
The alternative of paralleling the existing 345kV corridor 1,500 feet to the north was considered but rejected for detailed analysis because it would require more new ROW, cross more big game crucial winter range, pass very close to a local recreation resort area, and traverse one sage grouse lek and three sage grouse lek buffers.

Table 4-12 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 4 Populus Subsegment, shown in **Figure 4-6**.

Table 4-12. Corridor Comparisons, Segment 4, Populus Subsegment (4p to 5)

Attributes	Comparison 1	
	Proposed	Considered Not Proposed
	Corridor Reference Points*	
	4p, 5	4p, 4q, 5
Surface Ownership (miles)		
BLM	0.7	1.0
USFS	0	0
State	5.3	7.0
Private	20.3	17.8
Total Length	26.3	25.8
Corridors (miles)		
Within WWEC (Federal)	0	0
Within Projected WWEC (Non-Federal)	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0
Total WWEC	0	0
Parallel Existing Transmission Lines	0	0
Environmental Resources (miles)		
Big Game Crucial Winter Range	2.0	0
Prime Farmlands	3.0	4.7
Sage Grouse Lek 0.65-mile Buffer	1.3 (1 lek)	3.2 (2 leks)

*Depicted on **Figure 4-6**

4.2.5.6 Summary of Segment 4 Corridors

Description of Proposed Corridor

The proposed corridor exits the proposed Bridger 500kV Substation passing south of the existing power plant joining the existing 345kV corridor at mile 5.5. It parallels the south side of the corridor for 40.5 miles to mile 39.0. The proposed corridor angles southwest away from the existing transmission corridor, turns west at about mile 52.0, crosses the Green River and angles northwest parallel to the east side of and then crosses SR 372 to rejoin the south side of the existing 345kV corridor at mile 58.7. Except for a slight deviation south between mile 70.6 and 77.0, the proposed corridor remains parallel to mile 100.0 where it crosses to the north side and parallels the existing 345kV corridor to mile 107.8 crossing Hams Fork south of Naughton Reservoir. At mile 107.8 the proposed corridor turns northward and at mile 114.0 it turns northwest to cross Dempsey Ridge, Smiths Fork, and US 30/89 before joining the existing corridor at mile 131.7.

The proposed corridor parallels the north side of the existing corridor to mile 139.7, where it angles to the north to avoid a farm, crosses US 30/89, and angles west back to the existing 345kV corridor. This corridor then parallels the north or east side of the existing transmission lines for 18.6 miles across US 30/89, the Bear River, and the hillsides on the northwest side of the Bear River valley to mile 163.0. At mile 163.7 this corridor enters the Cache National Forest and leaves the existing 345kV corridor following a new ROW slightly to the north and rejoins the existing transmission line corridor at mile 174.8. This corridor crosses County Route 34 and then parallels the 345kV corridor to mile 183.0. From this point to mile 197.0, the proposed corridor is located on greenfield ROW. At 197.0 it crosses SR 91 and rejoins the north side of the existing 345kV corridor for the last 3.3 miles into the Populus Substation.

Description of Feasible Alternative Corridors

BLM Kemmerer FO Preferred Alternative - 4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k

The corridor that includes the Kemmerer FO preferred corridor departs from the proposed corridor just west of Seedskadee NWR and trends west, crossing active trona mines owned by FMC, to the area just west of the Chevron coal mine south of the community of Kemmerer where at reference point 4b.1 this alternative corridor angles north toward US 30/89 and reference point 4b.4. From this location this alternative corridor proceeds west in proximity to and south of US 30/89 for about 12.0 miles. Approximately 2.4 miles southwest of the intersection of US 30/89 and SR 89, this corridor crosses the later highway and turns northerly for 1.5 miles before crossing into Cokeville Meadows NWR on private land, reference points 4b.8 to 4b.12. Once across the NWR, this corridor continues for 16.0 miles, generally following the east side of the Wyoming/Utah and then the Wyoming/Idaho state lines. North of Garret Creek, this corridor angles northwest across the state line into Idaho to reference point 4j and the proposed corridor from point 4j to point 4k.

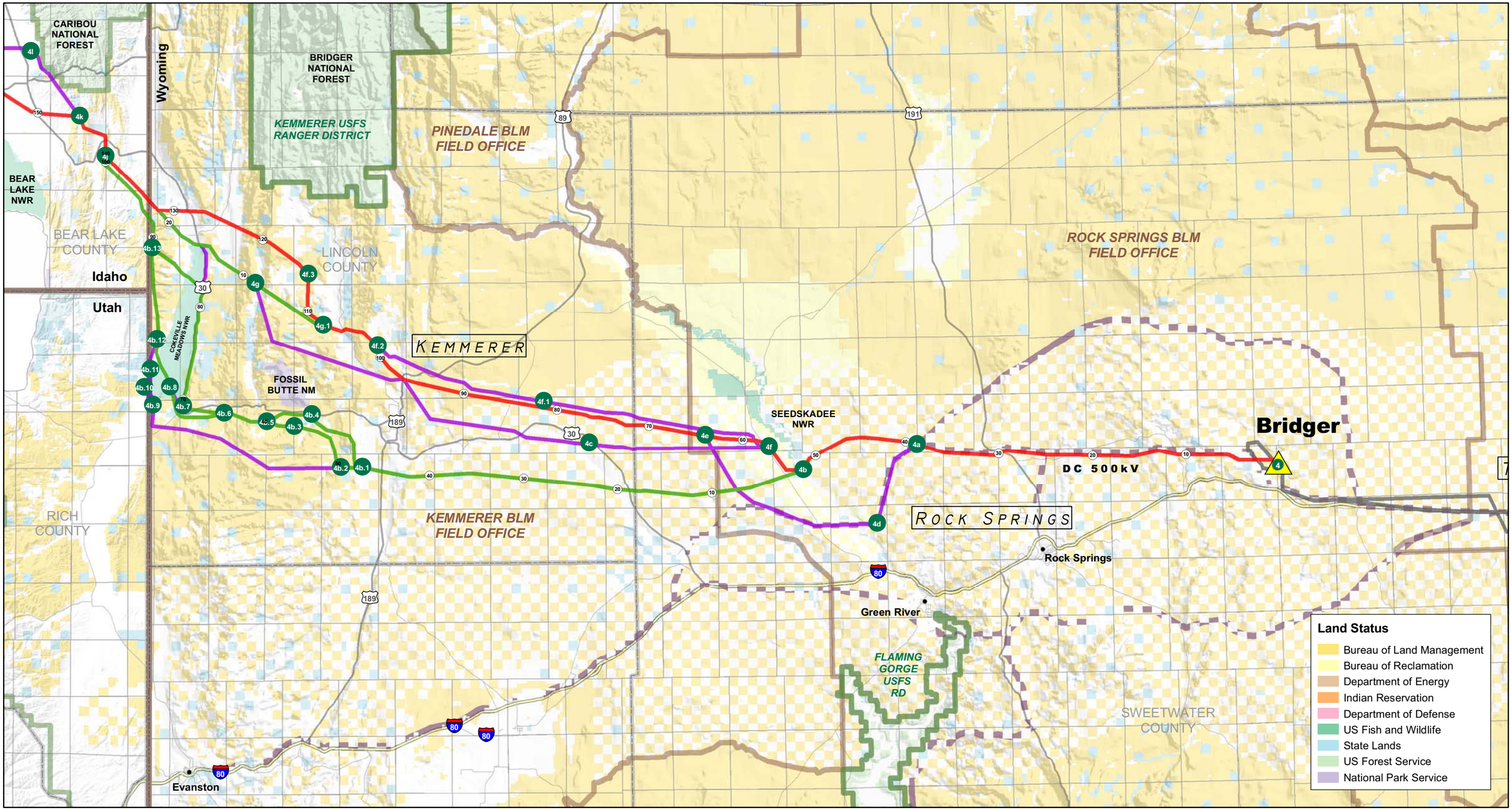
Feasible Alternative Corridor - Office of the Governor referenced route - 4b, 4f, 4e, 4f.2, 4g.1, 4g, 4j, 4k

This alternative corridor is very similar to the proposed corridor; however, where the proposed corridor leaves the north side of the existing 345kV corridor, this alternative continues to follow the existing transmission lines except for two short deviations in the vicinity of the two US 30/89 crossings. As a result, this corridor only requires 13.0 miles of greenfield ROW, as compared to 34.8 miles for the proposed corridor. However, this alternative corridor crosses a significant area of many resource constraints east of Cokeville, which is of great concern to the BLM

Kemmerer FO. This field office strongly recommended that the Companies avoid this area. Also, the crossing south of Cokeville and west of US 30/89 may be permanently blocked by a conservation easement under development.

Feasible Alternative Corridor - 4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13, 4j, 4k,

The corridor departs from the proposed corridor just west of Seedskadee NWR and trends west, crossing active trona mines owned by FMC, to the area south of the intersection of U.S. Routes 30 and 189 south of Kemmerer. It differs from the Kemmerer FO's initial proposal by crossing directly over the coal-mining area, as resolved with an on-site visit with the coal mine owners as mentioned above. From this location and for the remainder of this subsegment, this alternative would be located on a new ROW turning north and then proceeding south of U.S. Route 30/89, then turning north and parallel to the east side of this same highway and Cokeville Meadows NWR for 11.5 miles before angling northwest. The corridor then crosses this highway and the NWR before turning north along the Idaho/Wyoming border for about 3.0 miles before again turning west and proceeding to reference points 4j and 4k.



0 10 Miles

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

IDAHO POWER
An IDACORP Company

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- DC Double Circuit

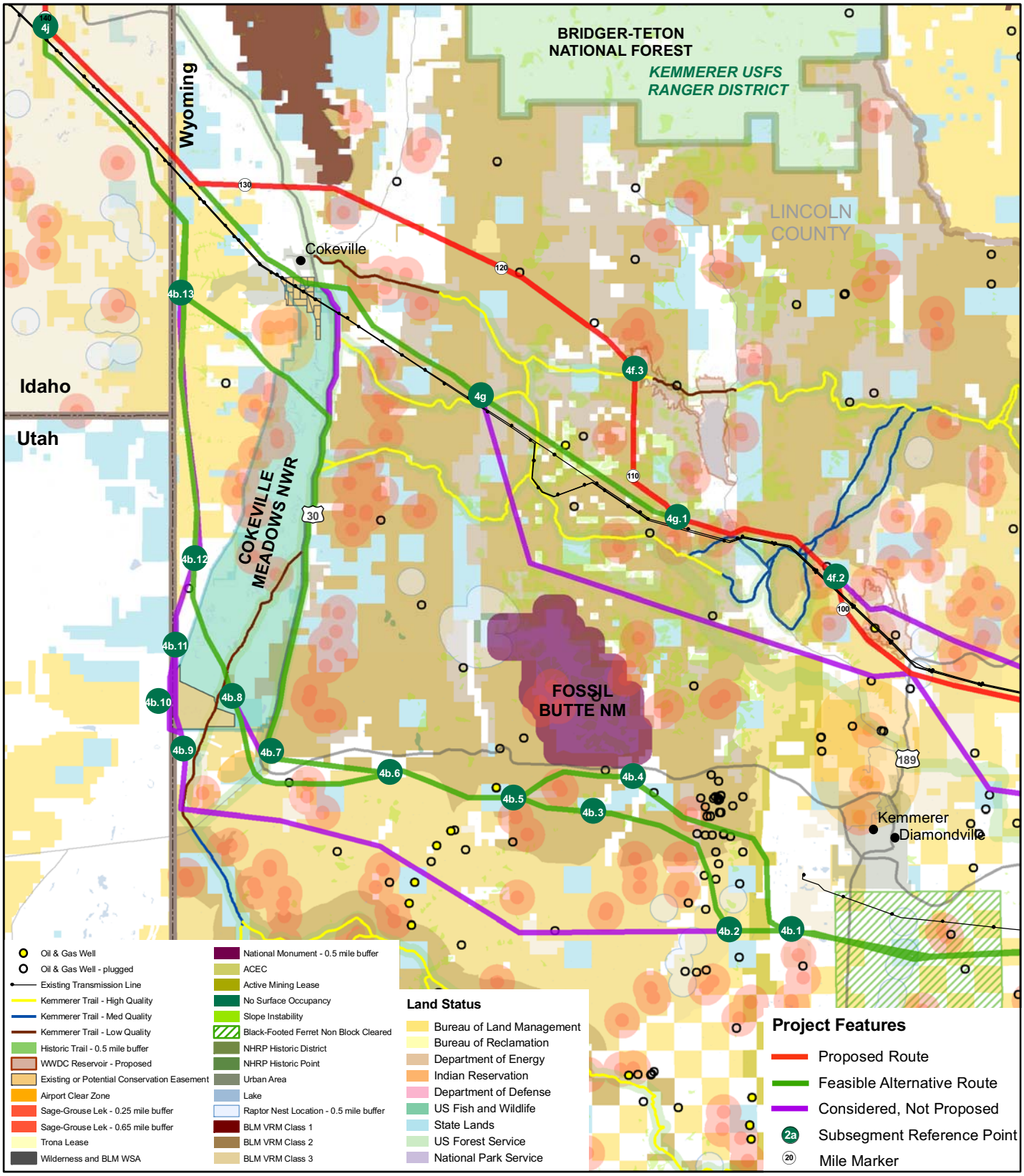
Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

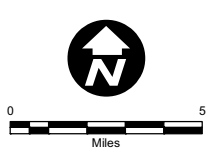
Transportation
- Interstate
- Highway
- Major Road
- Minor Road

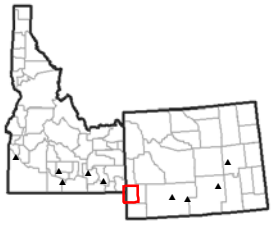
Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 4 - WY

Figure 4 - 5





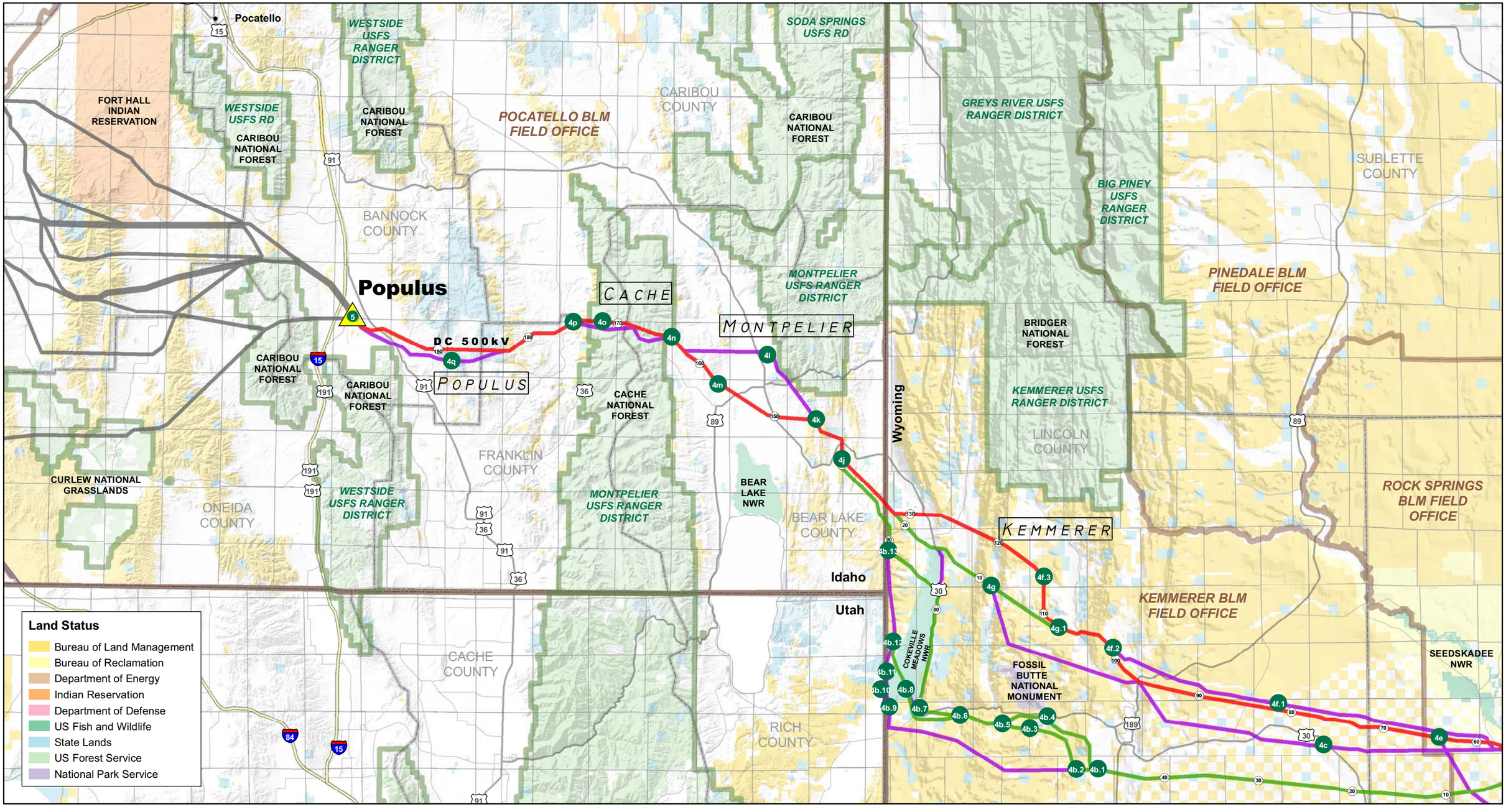


Gateway West
Transmission Line Project
Idaho, Wyoming

Kemmerer Area Corridor Constraints/Opportunities

Figure 4 - 5a

Revised 09-06-08


Pocatello
WESTSIDE USFS RANGER DISTRICT
SODA SPRINGS USFS RD
FORT HALL INDIAN RESERVATION
WESTSIDE USFS RD
CARIBOU NATIONAL FOREST
POCATELLO BLM FIELD OFFICE
CARIBOU COUNTY
GREYS RIVER USFS RANGER DISTRICT
BIG PINEY USFS RANGER DISTRICT
SUBLETTE COUNTY
BANNOCK COUNTY
Populus
CACHE
MONTPELIER
MONTPELIER USFS RANGER DISTRICT
PINEDALE BLM FIELD OFFICE
DC 500kV
POPULUS
BRIDGER NATIONAL FOREST
CACHE NATIONAL FOREST
KEMMERER USFS RANGER DISTRICT
Wyoming
LINCOLN COUNTY
FRANKLIN COUNTY
CURLEW NATIONAL GRASSLANDS
ONEIDA COUNTY
WESTSIDE USFS RANGER DISTRICT
MONTPELIER USFS RANGER DISTRICT
BEAR LAKE NWR
BEAR LAKE COUNTY
ROCK SPRINGS BLM FIELD OFFICE
KEMMERER
Idaho
Utah
KEMMERER BLM FIELD OFFICE
COKEVILLE MEADOWS NWR
FOSSIL BUTTE NATIONAL MONUMENT
SEEDSKADEE NWR
CACHE COUNTY
RICH COUNTY
4p
4o
4n
4q
4l
4m
4k
4j
4b.13
4g
4f.3
4g.1
4f.2
4b.12
4b.11
4b.10
4b.9
4b.8
4b.7
4b.6
4b.5
4b.4
4b.3
4b.2
4b.1
4f.1
4e
4c
Land Status
Bureau of Land Management
Bureau of Reclamation
Department of Energy
Indian Reservation
Department of Defense
US Fish and Wildlife
State Lands
US Forest Service
National Park Service
0
10
Miles
ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP
IDAHO POWER
An IDACORP Company
Revised 09-06-08
Project Features
Approximate Substation Location
Draft West-Wide Energy Corridor
NAME Corridor Subsegment
2a Subsegment Reference Point
20 Mile Marker
Project Routes
Proposed
Feasible Alternative
Considered, Not Proposed
Other Segment
DC Double Circuit
Administrative
City Town
County Boundary
Public Land Survey System
BLM Field Office Boundary
USFS District Boundary
Transportation
Interstate
Highway
Major Road
Minor Road
Gateway West
Transmission Line Project
Idaho, Wyoming
Segment 4 - ID
Figure 4 - 6

4.2.6 Segment 5 – Populus to Borah (reference points 5 to 6)

Segment 5 will consist of a single-circuit 500kV transmission line between the planned Populus Substation near Downey, Idaho to the existing Borah Substation near American Falls, Idaho (**Figure 4-7**). This line will be constructed to 500kV design standards utilizing 500kV single-circuit lattice steel towers between 145 and 180 feet tall, and will be energized at 500kV.

There is only one subsegment in Segment 5, the Deep Creek Subsegment. The primary constraint for routing this segment was the Fort Hall Indian Reservation. Because of the possibility that an easement across tribal lands could be changed or voided by a subsequent tribal council and the difficulty in obtaining long-term agreements, the route across the Reservation was determined to be infeasible. The other significant constraint in this segment is a VRM Class II area mapped for the Deep Creek Mountains that extends south of the Reservation. The objective was to minimize effects to this land classification to the extent practical. Routing decisions also factored in opportunities for co-locating the Segment 5 proposed corridor with the Segment 7 proposed corridor to the extent practical. Corridors within Segment 5 were initially routed using the LRT and then refined manually using topographic maps and aerial photography.

4.2.6.1 Deep Creek Subsegment (5 to 6)

Proposed Corridor (5, 5a, 5b, 5d, 5e, 6)

The Segment 5 proposed corridor, shown on **Figure 4-7**, is approximately 53 miles long. This corridor crosses US 15 about 1.6 miles northwest of the Populus Substation. At mile 14.7, it turns west crossing an existing 345kV corridor and then the Bannock County/Power County line. The proposed Segment 5 corridor continues west parallel to the proposed Segment 7 corridor, crossing Arbon Valley and the Deep Creek Mountains south of the Fort Hall Indian Reservation. At the west side of these mountains, the proposed corridor turns northerly between the Deep Creek Mountains and SR 37. At mile 47.5, it turns north and then west crossing Interstate 84 (I-84), SR 37, and US 30 before crossing the Snake River and entering the Borah Substation.

Two existing 345kV transmission lines extend between the Populus and Borah Substations. The proposed corridor follows the existing lines from Populus northwest for approximately 10 miles to just southeast of reference point 5a (**Figure 4-7**), at which point the proposed corridor is greenfield alignment for the remainder of the corridor, extending northwest through 5a, turning west south of the Indian Reservation, and then north to the existing Borah Substation. The Segment 5 proposed corridor is mostly adjacent, but offset 1,500 feet, to the Segment 7 proposed corridor from reference point 5 to 5d (**Figure 4-7**). None of the region Segment 5 is located in is mapped as WWEC.

Advantages of the proposed corridor include (**Table 4-13**):

- Avoids the Fort Hall Indian Reservation;
- Avoids USFS land;
- Is co-located with the Segment 7 proposed corridor for 36.6 miles;
- Parallels an existing utility corridor for 9.3 miles;
- Avoids 0.25-mile sage grouse lek buffers; and
- Is the shortest route around the Reservation.

Disadvantages of the proposed corridor are presented below. Numbers were compiled from **Table 4-13** by adding Comparison 1 to Comparison 4-Proposed:

- Adds 5.4 miles in length in order to avoid the Fort Hall Indian Reservation;
- Is mostly greenfield corridor;
- Crossed 0.5 mile of 0.65-mile sage grouse lek buffer;
- Crosses 4.1 miles of big game crucial winter range;
- Crosses 1.5 miles of VRM Class II;
- Crosses 2.8 miles of VRM Class III;
- Crosses 1.3 miles of historic trail buffer, but this is unavoidable given the requirement of the line running northwest between the Populus and Borah Substations;
- Crosses 3.9 miles of NWI mapped wetlands;
- Crosses 21.9 miles of slope >15%;
- Crosses 17.7 miles of irrigated agriculture; and
- Crosses some high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains.

The proposed corridor was selected because, while it presents environmental disadvantages, it avoids the Fort Hall Indian Reservation and minimizes effects to environmental resources overall due to the shorter length as compared to the feasible alternative and by being adjacent to the Segment 7 proposed corridor.

Feasible Alternative Corridor (5, 5c, 5d)

One feasible alternative was identified for this segment, as shown in **Figure 4-7**. This alternative diverges from the proposed corridor at mile 9.3 near Hawkins Creek and heads due west for 4 miles to Hawkins Reservoir. It then runs in a southwesterly direction through the very northern portion of Oneida County, continuing just north of Arbon in the Arbon Valley, and entering the Deep Creek Mountains at about mile 18. This alternative traverses the Deep Creek Mountains for approximately 9 miles and then heads north for 7 miles through the Rockland Valley, crossing several drainages, including Dry Hollow and Sand Hollow, and rejoins the proposed corridor at mile 34 of the alternative corridor (and mile 37 of the proposed corridor) at East Fork Rock Creek, approximately 3 miles east of Rockland.

Advantages of this alternative corridor include (**Table 4-13**):

- Avoids VRM Class II areas, compared to the proposed corridor which crosses 1.5 miles;
- Avoids high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains;
- Similar to the proposed corridor, this corridor avoids the Fort Hall Indian Reservation;
- Similar to the proposed corridor, this corridor avoids USFS land;
- Similar to the proposed corridor, this corridor parallels an existing utility corridor for 9.3 miles; and
- Is co-located with the Segment 7 feasible alternative corridor for 33.8 miles.

Disadvantages of this alternative corridor include (**Table 4-13**):

- Is 5.3 miles longer than the proposed corridor;
- Crosses 1.6 more miles of .65 mile lek buffer;
- Crosses 1.3 miles more big game crucial winter range than the proposed corridor;
- Crosses 3.4 miles more VRM Class III than the proposed corridor;
- Crosses 0.1 mile less historic trail buffer compared to the proposed corridor;
- Crosses 0.1 mile more slope >15% area than the proposed corridor;
- Crosses 4.4 miles more irrigated agriculture than the proposed corridor; and
- Crosses 0.1 mile more wetlands than the proposed corridor.

This corridor was not selected as the proposed corridor because it is longer than the proposed corridor. However, it was selected as a feasible alternative because it is able to avoid VRM class II and high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains. In Section 4.2.8.1, an even more southerly crossing of the Deep Creek Mountains suggested by BLM (alternative 5, 7a, 7a.1, 7b, 7d) is described. This alternative was only evaluated for segment 7 between Populus and Cedar Hill. To connect the segment 5 terminus at Borah would add unreasonably to the length of segment 5.

Alternative Corridors Considered, but Not Proposed

Three corridors were considered for this segment but are not proposed for detailed analysis. Each of these corridors is presented below, in order from the southernmost alternative to the northernmost (**Figure 4-7**). **Table 4-13** and the discussions below present these alternatives in relation to their respective comparable portions of the proposed corridor.

Alternative Corridor Considered, but Not Proposed (5, 5d)

This alternative corridor is shown on **Figure 4-7**. It diverges from the proposed corridor at mile 9.3, at which point it heads due west through the Bannock Range, through the Arbon Valley between Pauline and Arbon, and through the Deep Creek Mountains. On the west side of the Deep Creek Mountains, it turns northwest and runs about 3 miles through Rockland Valley, terminating at reference point 5d (and mile 37 of the proposed corridor), approximately 3 miles east of Rockland.

This alternative corridor was put forward by the BLM as a means of avoiding high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains. However, topographic constraints in this area do not allow adequate space to accommodate two transmission lines in this area, and therefore, under this scenario, the Segment 5 corridor would not be co-located with the Segment 7 corridor, resulting in more effects to environmental resources overall. Therefore, this corridor is not proposed for detailed analysis.

Advantages of this alternative corridor include (**Table 4-13**):

- Similar to the proposed corridor, this corridor avoids the Fort Hall Indian Reservation;
- Similar to the proposed corridor, this corridor avoids USFS land;

- Similar to the proposed corridor, this corridor parallels an existing utility corridor for 9.3 miles;
- Avoids sage grouse 0.65-mile sage grouse lek buffers, compared to the proposed corridor, which crosses one;
- Crosses 1.4 miles less VRM Class III than the proposed corridor;
- Crosses 0.1 mile less slope >15% area than the proposed corridor; and
- Crosses 0.1 mile less historic trail buffer than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-13**):

- Is 1.3 miles longer than the proposed corridor;
- Crosses 0.4 mile more big game crucial winter range than the proposed corridor;
- Crosses 1.4 miles more VRM Class II than the proposed corridor;
- Crosses 4.6 miles more irrigated agriculture than the proposed corridor;
- Crosses 0.1 mile more wetlands than the proposed corridor; and
- Would not allow for co-location with Segment 7.

Alternative Corridor Considered, but Not Proposed (5b, 5e)

This alternative corridor, shown on **Figure 4-7**, was designed as a more direct route option than the proposed corridor. It diverges from the proposed corridor at reference point 5b (mile 28.3) and extends northwest through the Deep Creek Mountains, terminating at reference point 5e (proposed corridor mile 42.2). While this alignment shortens the length of the line, it would not create an efficient opportunity to co-locate with the Segment 7 corridor. Furthermore, this corridor would traverse high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains.

Advantages of this alternative corridor include (**Table 4-13**):

- Is 1.7 miles shorter than the proposed corridor;
- Similar to the proposed corridor, this corridor avoids the Fort Hall Indian Reservation;
- Similar to the proposed corridor, this corridor avoids USFS land;
- Similar to the proposed corridor, this corridor avoids a 0.65-mile sage grouse lek buffer;
- Avoids big game crucial winter range, where the proposed corridor crosses 1.2 miles;
- Crosses 2.0 miles less irrigated agriculture than proposed corridor; and
- Similar to the proposed corridor, avoids wetlands.

Disadvantages of this alternative corridor include (**Table 4-13**):

- Similar to the proposed corridor, there is no WWEC proposed within this area;
- Similar to the proposed corridor, this corridor crosses 1.5 miles of VRM Class II areas;
- This corridor creates a second corridor across VRM Class II that is separate from the Segment 7 proposed corridor that crosses VRM Class II;
- Crosses 0.2 mile more VRM Class III than the proposed corridor;

- Crosses 0.4 mile more area of slope >15% than the proposed corridor; and
- Crosses more high-quality forested habitat on BLM land that is located in the northern portion of the Deep Creek Mountains compared to the proposed corridor.

Alternative Corridor Considered, but Not Proposed (5, 5a, 6)

This is the northernmost alternative considered for this segment (**Figure 4-7**). It diverges from the proposed corridor at mile 15.6 in Hawkins Basin where it continues adjacent to an existing utility corridor that runs northwest through the Fort Hall Indian Reservation, to a location approximately 4 miles west of the reservation, at which point it turns due west. Just south of American Falls, it crosses US 32, US 30, and the Snake River, and terminates at the Borah Substation.

This corridor was considered because it is the most direct option between the Populus and Borah Substations, and it follows an existing utility corridor for the entire segment length. However, this corridor was not selected as the proposed corridor or as a feasible alternative because it traverses 12.4 miles through the Fort Hall Indian Reservation. Because of the possibility that an easement across tribal lands could be changed or voided by a subsequent tribal council and the difficulty in obtaining long-term agreements, the route across the Reservation was determined to be infeasible.

Advantages of this alternative corridor include (**Table 4-13**):

- Is 5.4 miles shorter than the proposed corridor;
- Follows an existing utility corridor for the entire segment length (35.6 miles), whereas the proposed corridor follows only 9.3 miles of existing utility corridor;
- Similar to the proposed corridor, this corridor avoids USFS land;
- Crosses 1.3 miles less VRM Class II than the proposed corridor;
- Avoids VRM Class III, whereas the proposed corridor crosses 2.8 miles;
- Crosses 3.8 miles less irrigated agriculture than the proposed corridor;
- Similar to the proposed corridor, this corridor avoids wetlands; and
- Crosses 4.5 miles less slope >15% areas than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-13**):

- Traverses 12.4 miles through the Fort Hall Indian Reservation;
- Similar to the proposed corridor, there is no WWEC proposed within this area;
- Similar to the proposed corridor, this corridor crosses one 0.65-mile sage grouse lek buffer;
- Crosses 2.3 miles more big game crucial winter range than the proposed corridor; and
- Similar to the proposed corridor, this corridor effects 1.3 miles of historic trail buffer.

Table 4-13. Corridor Comparisons, Segment 5, Deep Creek Subsegment (5 to 6)

Attributes	Comparison 1 (No Alternatives)	Comparison 2			Comparison 3		Comparison 4	
	Proposed	Proposed	Feasible Alternative	Considered Not Proposed	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed
	Corridor Reference Points*							
	5, 5a	5, 5a, 5b, 5d	5, 5c, 5d	5, 5d	5b, 5d, 5e	5b, 5e	5a, 5b, 5d, 5e, 6	5a, 6
Surface Ownership (miles)								
BLM	2.9	10.5	9.4	8.7	4.0	4.4	7.7	1.0
BIA	0	0	0	0	0	0	0	12.4
USFS	0	0	0	0	0	0	0	0
State	0	3.7	0	2.0	3.7	4.2	3.7	0.8
Private	8.8	22.7	32.9	27.6	6.2	3.6	29.7	21.4
Total Length	11.7	37.0	42.3	38.3	13.9	12.2	41.0	35.6
Corridors (miles)								
Within WWEC (Federal)	0	0	0	0	0	0	0	0
Within Projected WWEC (Non-Federal)	0	0	0	0	0	0	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0	0	0	0	0	0
Total WWEC	0	0	0	0	0	0	0	0
Parallel to Existing Transmission Lines	9.3	9.3	9.3	9.3	0	0	9.3	35.6
Environmental Resources (miles)								
Sage Grouse Lek 0.65-mile Buffer	0	0.5	2.1	0	0	0	0.5 (1 lek)	0.2 (1 lek)
Big Game Crucial Winter Range	0	4.1	5.4	4.5	1.2	0	4.1	6.4
VRM Class II (BLM Land)	0	1.5	0	2.9	1.5	1.5	1.5	0.2
VRM Class III (BLM Land)	0	2.8	6.2	1.4	2.5	2.7	2.8	0
Historic Trail Buffer	0	0.7	0.6	0.6	0	0	1.3	1.3
Irrigated Agriculture	4.2	9.2	13.6	13.8	3.5	1.5	13.5	9.7
NWI Wetland	3.9	3.9	4.0	4.0	0	0	0	0
Slope >15%	2.6	18.5	18.6	18.4	9.9	10.3	19.3	14.8

*Depicted on **Figure 4-7**

This corridor presents several environmental advantages over the proposed corridor; however, it is not proposed for detailed analysis because it passes through the Fort Hall Indian Reservation, which is considered not feasible.

4.2.6.2 Summary of Segment 5 Corridors

Description of Proposed Corridor

Segment 5 will consist of a single-circuit 500kV transmission line between the new Populus Substation near Downey, Idaho to the existing Borah Substation near American Falls, Idaho. This line will be constructed to 500kV design standards utilizing 500kV single-circuit lattice steel towers between 145 and 180 feet tall, and will be energized at 500kV (Idaho Power Company and Rocky Mountain Power 2008).

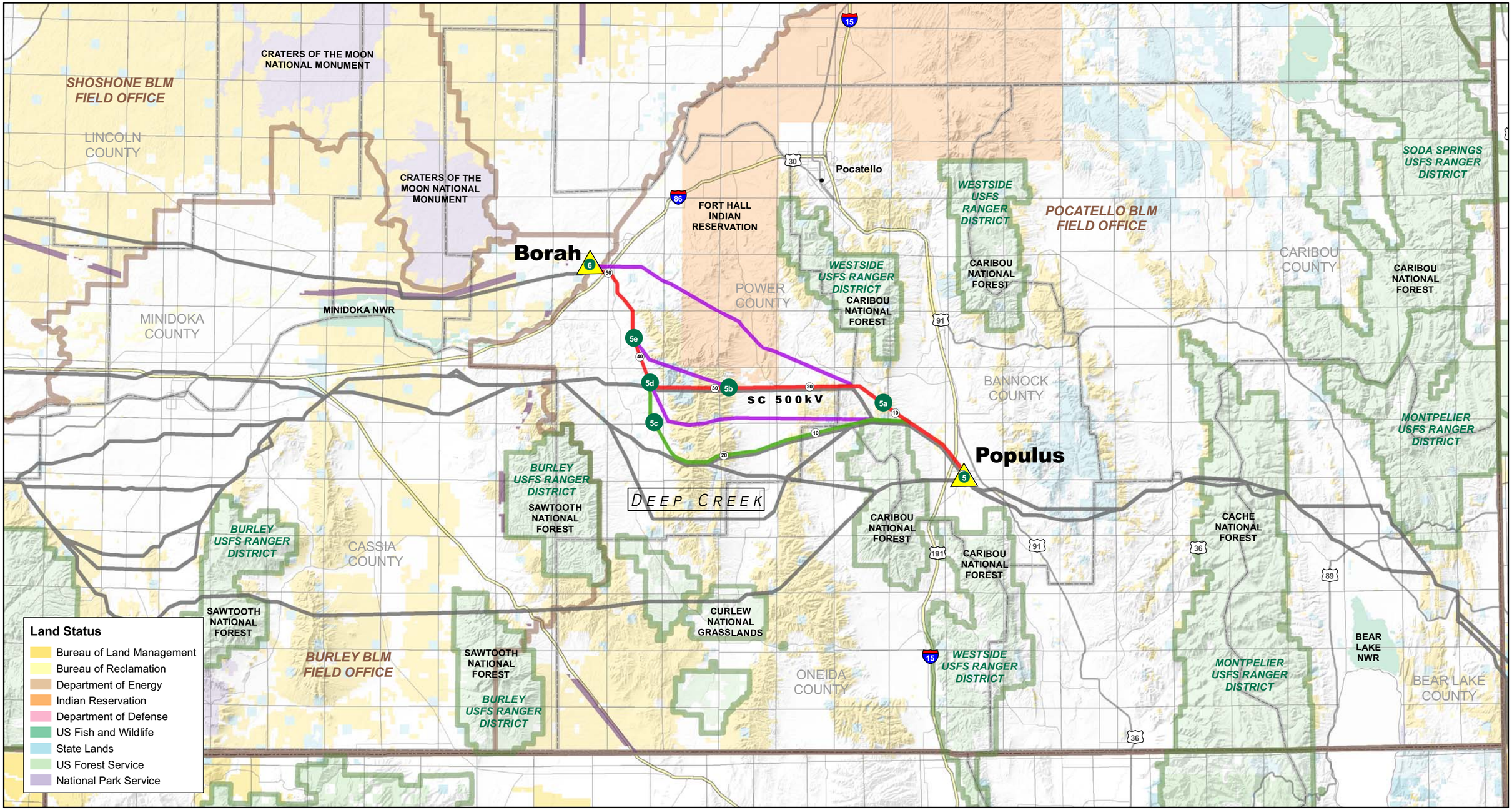
The Segment 5 proposed corridor is approximately 53 miles long. This corridor crosses US 15 about 1.6 miles northwest of the Populus Substation. At mile 14.7, it turns west crossing an existing 345kV corridor and then the Bannock County/Power County line. The proposed Segment 5 corridor continues west parallel to the proposed Segment 7 corridor, crossing Arbon Valley and the Deep Creek Mountains south of the Fort Hall Indian Reservation. At the west side of these mountains, the proposed corridor turns northerly between the Deep Creek Mountains and SR 37. At mile 47.5, it turns north and then west crossing I-84, SR 37, and US 30 before crossing the Snake River and entering the Borah Substation.

Description of Feasible Alternative Corridor

This alternative diverges from the proposed corridor at mile 9.3 near Hawkins Creek and heads due west for 4 miles to Hawkins Reservoir. It then runs in a southwesterly direction through the very northern portion of Oneida County, continuing just north of Arbon in the Arbon Valley, and entering the Deep Creek Mountains around mile 18 of this alternative corridor. This alternative traverses the Deep Creek Mountains for approximately 9 miles and then heads north for 7 miles through the Rockland Valley, crossing several drainages, including Dry Hollow and Sand Hollow, and rejoins the proposed corridor at mile 34 of the alternative corridor (and mile 37 of the proposed corridor) at East Fork Rock Creek, approximately 3 miles east of Rockland.

Conformance with the WWEC and Other Designated ROW Corridors

Within the Segment 5 area, there are no WWEC corridors proposed nor are there other designated ROW corridors. Therefore, the proposed Segment 5 is not able to conform to such corridors.



ROCKY MOUNTAIN POWER
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IDAHO POWER
An IDACORP Company

0 10
Miles

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 5
Figure 4 - 7

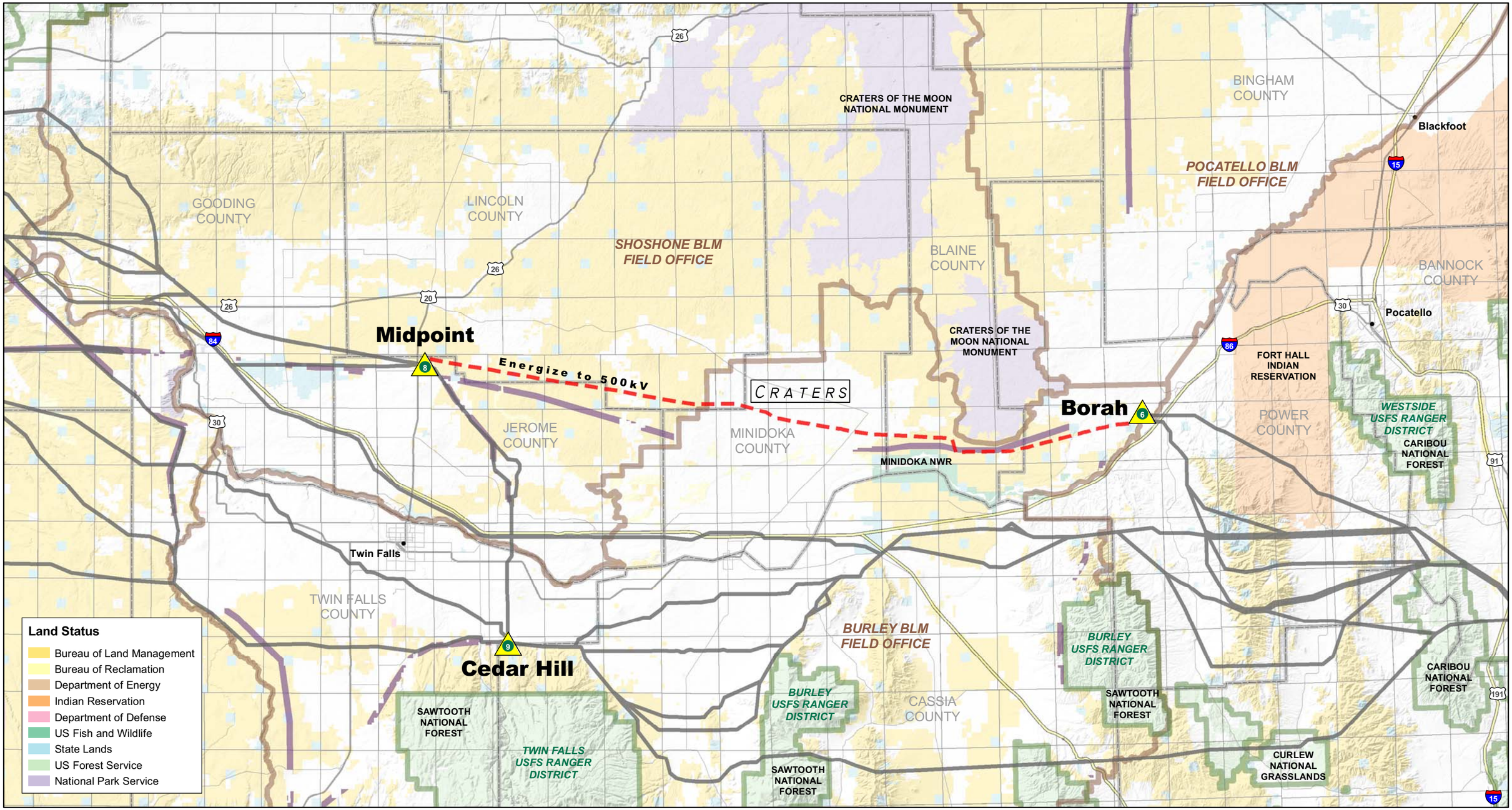
4.2.7 Segment 6 – Borah to Midpoint (reference points 6 to 8)

In Segment 6 (**Figure 4-8**) from the existing Borah Substation to the existing Midpoint Substation located approximately 9 miles south of Shoshone, Idaho, the voltage will be increased to 500kV on the existing Midpoint to Kinport 345kV transmission line. The line will be routed into the proposed 500kV yard at the Borah Substation. The remaining line from Borah to Kinport will be terminated in the existing 345kV yard at the Borah Substation and will remain in operation at 345kV. The structures utilized for the reroutes on each end of this line segment will be 500kV single-circuit lattice steel towers between 145 and 180 feet tall. There is only one subsection in Segment 6, the Craters Subsegment.

4.2.7.1 Summary Craters Subsegment (6 to 8)

Proposed Corridor (6, 8)

Segment 6 is composed of a portion of the existing Midpoint to Kinport 345kV line. When originally constructed, the line segment between Borah and Midpoint was built to 500kV design standards, so no new transmission line construction will be required along Segment 6 to upgrade this line segment to 500kV, except in the vicinity of the Borah and Midpoint Substations. At the Borah and Midpoint Substations, the line will be rerouted and re-terminated from the existing 345kV line bays into the new 500kV line bays at each substation. Several new structures and conductor will be needed at Midpoint Substation to reroute the existing 345kV line from its termination on the north side of the existing station to the proposed 500kV yard expansion on the south side. Several new structures and conductor will also be needed at Borah Substation to reroute the line from the northeast side of the existing station to the proposed 500-kV yard addition on the south side. A new structure will be needed to route the remaining 345kV line from Kinport into the existing 345kV yard on the east side. The line between Borah and Midpoint will then be re-energized from 345kV to 500kV. Because no new construction will occur for this segment, no alternatives warrant consideration.



0 10 Miles

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 6
Figure 4 - 8

4.2.8 Segment 7 – Populus to Cedar Hill (reference points 5 to 9)

Segment 7 will consist of a single-circuit 500kV transmission line along mostly new alignment from the planned Populus Substation near Downey, Idaho to the proposed Cedar Hill Substation southeast of Twin Falls, Idaho (**Figure 4-9**). It will be constructed on 500kV single-circuit lattice steel structures between 145 and 180 feet tall, and will be energized at 500kV.

This proposed corridor follows the Segment 5 corridor from the Populus Substation, reference point 5, to a point approximately 13 miles south of American Falls, Idaho. From this point, the corridor crosses Cassia County and the Raft River Valley continuing along the western toe of the Albion Mountains then across irrigated agriculture lands and into the proposed Cedar Hill Substation site. This segment is divided into two subsegments, the Deep Creek Subsegment in the eastern portion, and the Burley Subsegment in the western portion.

4.2.8.1 Deep Creek Subsegment (5 to 7d)

Proposed Corridor (5, 7a, 7c, 7d)

The Segment 7 Deep Creek Subsegment extends from the Populus Substation to the reference point 7d (**Figure 4-9**). From the expanded Populus Substation, the proposed corridor proceeds about 12.7 miles along the east side of the existing 345kV lines before turning west and crossing these existing lines south of Cedar Mountain. It generally parallels the south side of the existing 345kV corridor around Hawkins Reservoir before turning west and leaving the existing transmission corridor and passing along the south side of Bradley Mountain. Next, the proposed corridor continues west across the Arbon Valley and the Deep Creek Mountains before crossing SR 37 less than 1 mile south of Rockland at mile 40.7. This segment continues west another 6 miles, terminating at reference point 7d, at the eastern foot of the Sublett Range. None of the region within which this segment is located is mapped as WWEC.

Advantages of the proposed corridor include (**Table 4-14**):

- Is co-located with the Segment 5 proposed corridor for 36.6 miles;
- Follows the existing 345kV transmission line corridor coming out of Populus for 8.5 miles;
- Avoids USFS land; and
- Avoids all sage grouse lek 0.25-mile buffers.

Disadvantages of the proposed corridor include (**Table 4-14**):

- Is mostly greenfield alignment (38.2 miles);
- Crosses 5.0 miles of NWI wetlands;
- Crosses 16.3 miles of irrigated agriculture;
- Crosses 17.9 miles of slope >15% areas;
- Crosses 1.3 miles of VRM Class II on BLM land;
- Crosses 0.6 mile of historic trail buffer;
- Crosses two sage grouse lek 0.65-mile buffers; and
- Crosses 4.9 miles of big game crucial winter range.

The proposed corridor was selected because it minimizes total effect to environmental resources and could be co-located with the Segment 5 proposed corridor.

Feasible Alternative Corridor (5, 7a, 7b, 7d)

Within the Deep Creek Subsegment one feasible alternative was identified (**Figure 4-9**). This corridor diverges from the proposed corridor at mile 8.5 of the proposed corridor, at which point it heads due west for 4 miles immediately adjacent to the boundary of the Caribou National Forest. At mile 4 it begins to head generally southwest, passing through 0.7 mile of the Caribou National Forest and about 7 more miles through the very northern portion of Oneida County. At mile 12.0 it enters Power County and continues southwest, crossing Bannock Creek, passing just north of Arbon in the Arbon Valley, and traversing the Deep Creek Mountains for approximately 8 miles. On the west side of the Deep Creek Mountains (near mile 26), this alternative heads northwest through Rockland Valley, crosses US 37 at mile 30.7 and South Fork Rock Creek shortly after, crosses Cedar Ridge, crosses Houtz Canyon at mile 37, and continues for 3 miles to a location 5 miles west of Rockland (reference point 7d) where it meets the proposed corridor.

This corridor was designed to minimize effect to VRM Class II areas and high-quality forested habitat on BLM land located in the northern Deep Creek Mountains.

Advantages of this alternative corridor include (**Table 4-14**):

- Is co-located with the Segment 5 feasible alternative for 33.8 miles;
- Similar to the proposed corridor, this corridor follows the existing 345kV transmission line corridor coming out of Populus for 8.5 miles;
- Crosses 4.9 miles less irrigated agriculture than the proposed corridor; and
- Avoids all sage grouse lek 0.25-mile buffers.

Disadvantages of this alternative corridor include (**Table 4-14**):

- Is 1.4 miles longer than the proposed corridor and is mostly greenfield alignment;
- Crosses 0.7 mile of USFS land;
- Crosses 5.0 miles of NWI wetlands, the same as the proposed corridor;
- Crosses 1.1 miles more slope >15% than the proposed corridor;
- Crosses 0.7 mile of highly erosive soils, whereas the proposed corridor crosses none;
- Similar to the proposed corridor, this corridor crosses 0.6 mile of historic trail buffer;
- Crosses 6.6 miles of sage grouse lek 0.65-mile buffer compared to 2.1 miles along the proposed corridor;
- Crosses 0.6 mile more big game crucial winter range than the proposed corridor; and
- Avoids VRM Class II areas, compared to the proposed corridor that crosses 1.3 miles.

While this corridor minimizes effects to VRM Class II areas and high-quality forested habitat, it was not selected as the proposed corridor. It would still require a new independent ROW be constructed for Segment 5 to reference point 5d. The overall disadvantage of the increased amount of new transmission line construction related to both segments outweigh the advantages.

Table 4-14. Corridor Comparisons, Segment 7, Deep Creek Subsegment (5 to 7d)

Attributes	Comparison 1			
	Proposed	Feasible Alternative	Considered Not Proposed	Considered Not Proposed
	Corridor Reference Points*			
	5, 7a, 7c, 7d	5, 7a, 7b, 7d	5, 7b, 7d	5, 7a, 7a.1, 7b, 7d
Surface Ownership (miles)				
BLM	7.9	8.7	6.6	7.3
USFS	0	0.7	2.5	0.7
State	3.8	1.0	1.0	1.0
Private	35.0	37.7	36.0	48.7
Total Length	46.7	48.1	46.1	57.7
Corridors (miles)				
Within WWEC (Federal)	0	0	0	0
Within Projected WWEC (Non-Federal)	0	0	0	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0	0
Total WWEC	0	0	0	0
Parallel to Existing Transmission Lines	8.5	8.5	0	0
Environmental Resources (miles)				
NWI Wetland	5.0	5.0	1.1	4.9
Irrigated Agriculture	16.3	11.4	9.9	15.8
Slope >15%	17.9	19.0	20.3	24.4
Highly Erosive Soils	0	0.7	0.3	0.7
Slope Instability	0	0	0.7	0
VRM Class II (BLM Land)	1.3	0	0	0
VRM Class III (BLM Land)	3.2	5.9	4.4	6.9
USFS Visual Retention Area	0	0	0.8	0
Historic Trail Buffer	0.6	0.6	0.5	.8
Sage Grouse Lek 0.25-mile Buffer	0	0	0	0
Sage Grouse Lek 0.65-mile Buffer	2.1	6.6	7.7	10.7
Big Game Crucial Winter Range	4.9	5.5	6.5	4.5

*Depicted on **Figure 4-9**

Alternative Corridor Considered, but Not Proposed (5, 7b, 7d)

This alternative, shown on **Figure 4-9**, heads west out of the Populus Substation, crossing Interstate 15, traversing the Bannock Range and 2.5 miles of the Caribou National Forest and the Pleasantview Hills, then passes through the Arbon Valley 2.5 miles south of Arbon, traversing a portion of the Deep Creek Mountains, and terminating where it meets the feasible alternative corridor (mile 21.8).

The alternative corridor is not proposed for detailed analysis because it crosses more slope >15%, high erosive soils, BLM VRM class II and USFS visual retention area than the proposed

corridor. This corridor presents no advantages over the proposed or feasible alternative corridors.

Advantages of this alternative corridor include (**Table 4-14**):

- Is 0.6 mile shorter than the proposed corridor and 2.0 miles shorter than the feasible alternative corridor;
- Crosses 3.9 miles less NWI wetlands compared to the proposed corridor;
- Crosses 6.4 miles less irrigated agriculture than the proposed corridor; and
- Avoids VRM Class II, compared to the proposed corridor that crosses 1.3 miles.

Disadvantages of this alternative corridor include (**Table 4-14**):

- Crosses 2.5 miles of USFS land, 0.8 mile of which is a USFS Visual Retention Area;
- Does not parallel any existing transmission lines;
- Is not co-located with the Segment 5 proposed corridor, and is only co-located with the Segment 5 feasible alternative for 3.9 miles;
- No WWEC is mapped in this area;
- Crosses 2.4 more miles of slope >15% areas than the proposed corridor;
- Crosses 0.3 mile of highly erosive soils, whereas the proposed corridor crosses none;
- Crosses 0.7 mile of areas of slope instability, whereas the proposed corridor crosses none;
- Crosses 0.1 mile less historic trail buffer than the proposed corridor;
- Crosses 5.6 miles more 0.65-mile lek buffer compared to the proposed corridor (two); and
- Crosses 1.6 miles more big game crucial winter range than the proposed corridor.

Alternative Corridor Considered, but Not Proposed (5, 7a, 7a.1, 7b, 7d)

This alternative, shown on **Figure 4-9**, was suggested by BLM to further avoid quality forested habitat. This corridor diverges from the feasible alternative corridor at reference point 7a. From this point it heads southwest and west of the boundary of the Caribou National Forest. At mile 9 it enters Power County and continues southwest west crossing Bannock Creek and the Deep Creek Mountains. On the west side of the Deep Creek Mountains, this alternative heads northwest through Rockland Valley, crosses US 37 and intersects with the feasible alternative corridor at reference point 7b.

The alternative corridor is not proposed for detailed analysis because it is significantly longer then either the proposed corridor or feasible alternative. This corridor presents no advantages over the proposed or feasible alternative corridors.

Disadvantages of this alternative corridor include (**Table 4-14**):

- Is 11.0 miles longer than the proposed corridor;
- Crosses 4.9 miles of NWI wetlands, the same as the proposed corridor;

- Crosses 24.4 miles more slope >15% than the proposed corridor;
- Crosses 0.7 mile of highly erosive soils, whereas the proposed corridor crosses none;
- Crosses 10.7 miles of sage grouse lek 0.65-mile buffer compared to 2.1 miles along the proposed corridor;
- Avoids VRM Class II areas, compared to the proposed corridor that crosses 1.3 miles; and

4.2.8.2 Burley Subsegment (7d to 9)

The Burley Subsegment refers to the remainder of Segment 7, which includes all Segment 7 corridors west of reference point 7d, which terminate at the proposed Cedar Hill Substation location in Cassia County (**Figure 4-9**).

Proposed Corridor (7d, 7e, 7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9)

The proposed corridor in this subsegment begins at mile 46.7 (reference point 7d), which is at the eastern foot of the Sublett Range. At mile 47.6, it crosses into Cassia County before crossing the north side of the Sublett Range. It then proceeds across the Raft River Valley, where it turns southwest along the western toe of the Albion Mountains before angling west for about 22 miles. Between mile 73 and 88 the proposed corridor crosses steep terrain north of the Sawtooth National Forest before crossing irrigated cropland between miles 88 and 107.

Because this corridor is entirely greenfield alignment, it was routed using the LRT initially, followed by revisions using study of constraints and opportunities mapping, aerial photography, and topographic maps. None of the region Segment 7 is located in is mapped as WWEC.

Advantages of the proposed corridor include (**Table 4-15**):

- Avoids USFS land;
- Avoids VRM Class II areas on BLM land;
- Avoids urban/developed areas;
- Is shorter, thereby reducing effects to resources overall while crossing irrigated cropland in an area that allows for strategic transmission structure placement to minimize agricultural effects; and
- Avoids residential development.

Disadvantages of the proposed corridor are presented below. Numbers were compiled from **Table 4-15** by adding Comparison 1, Comparison 2-Proposed, and Comparison 3-Proposed.

- Is entirely greenfield alignment (70.7 miles);
- Crosses 6.7 miles of big game crucial winter range;
- Encroaches upon two raptor nest 0.50-mile buffers;
- Crosses 23.8 miles of irrigated agriculture;
- Crosses 16.8 miles of areas of slope >15%;
- Crosses 5.1 miles of historic trail buffer;
- Crosses 4.6 miles of VRM Class III areas on BLM land;

- Crosses 3.3 miles of a designated scenic highway buffer; and
- Encroaches upon two sage grouse lek 0.65-mile buffers.

The proposed corridor was selected because it is the shortest route identified to minimize adverse effect to a range of resources including, agriculture, biological and land use.

Feasible Alternative Corridors

Several corridors were considered for this subsegment in an attempt to minimize adverse effects to environmental resources, and three minor deviations are proposed as feasible alternatives (**Figure 4-9**). The environmental advantages and disadvantages of these alternatives are similar to those of their respective comparable portions of the proposed corridor (**Table 4-15**); therefore, only the differences compared to the proposed corridor are presented below.

Feasible Alternative Corridor (7e, 7f, 7g)

This alternative, shown in **Figure 4-9**, diverges from the proposed corridor at mile 51 of the proposed corridor, approximately 10 miles west of Rockland, Idaho. It runs southwest through the Sublett Range for approximately 8 miles. It then proceeds west for 2 miles through Heglar Canyon and then northwest through the Raft River Valley for 11 miles, terminating at mile 21 where it rejoins the proposed corridor. This alternative swings south of the proposed corridor to avoid three sage grouse lek 0.65-mile buffers along the proposed corridor. This corridor was identified as a feasible alternative because it is constructible and is similar to the proposed corridor in terms of resulting environmental effects. However, this corridor was not selected as the proposed corridor because it presents only one advantage over the proposed corridor (avoidance of three sage grouse lek 0.65-mile buffers). There are no other advantages to this corridor (**Table 4-15**).

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 0.3 mile longer than the proposed corridor;
- Crosses 2.2 miles more big game range than the proposed corridor;
- Crosses 0.6 mile more irrigated agriculture than the proposed corridor;
- Crosses 0.7 mile more slope >15% than the proposed corridor; and
- Crosses 0.6 mile more historic trail buffer than the proposed corridor.

Feasible Alternative Corridor (7e, 7u, 7g)

This alternative, shown in **Figure 4-9**, diverges from the proposed corridor at mile 56.4 of the proposed corridor, approximately 15 miles west of Rockland, Idaho. It proceeds northwest for 2 miles and then southwest for 1 mile back to the proposed corridor. This alternative diverges slightly from the proposed corridor to avoid one sage grouse lek 0.65-mile buffer. Another advantage of this corridor is 0.3 mile less effect to slope >15% areas than the proposed corridor (**Table 4-15**).

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 0.5 mile longer than the proposed corridor;
- Crosses 0.3 mile more irrigated agriculture than the proposed corridor; and
- Crosses 1.2 miles more historic trail buffer than the proposed corridor.

This corridor was identified as a feasible alternative because it is constructible and avoids affecting a lek 0.65-mile buffer, but is similar to the proposed corridor in terms of other environmental characteristics. However, this corridor was not selected as the proposed corridor because it adds to total length but does not provide significant advantages compared to the proposed corridor.

Feasible Alternative Corridor (7j, 7l)

The third feasible alternative, shown in **Figure 4-9**, diverges from the proposed corridor at mile 80.3 of the proposed corridor, approximately 4.5 miles north of Albion. It proceeds southeast for 1 mile and then southwest for 3 miles back to the proposed corridor for a distance of 0.7 mile. This alternative diverges slightly east from the proposed corridor to avoid 1.6 miles of 0.65-mile lek buffer. Compared to the proposed corridor, it does not provide significant additional advantages (**Table 4-15**).

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 0.7 mile longer than the proposed corridor;
- Encroaches upon one more raptor nest 0.50-mile buffers than the proposed corridor;
- Crosses 0.9 mile more slope >15% than the proposed corridor;
- Crosses approximately 0.3 mile more VRM Class II on BLM land compared to the proposed corridor; and
- Crosses 0.7 mile more designated scenic highway buffer than the proposed corridor.

This corridor was identified as a feasible alternative because it avoids 1.6 miles of sage grouse buffer. However, it is 0.7 mile longer with several disadvantages.

Alternative Corridors Considered, but Not Proposed

Five alternative corridors were considered but are not proposed for detailed analysis. A discussion of each of these corridors follows, organized geographically from the southernmost alternative to the northernmost, as shown on **Figure 4-9**. The final alternative corridor considered but not proposed (7g, 9h), crosses two segments (7 and 9), and is presented in this section for consistency when discussing the project from east to west.

Alternative Corridor Considered, but Not Proposed (5, 7r, 7q, 7t, 7s)

The southernmost alternative spans both the Deep Creek and Burley Subsegments. This corridor extends from the Populus Substation to the Cedar Hill Substation proposed site in Cassia County (**Figure 4-9**). This corridor exits the Populus Substation heading west and crosses the Bannock Range of the Caribou National Forest. It then proceeds southwest through the Pleasantview Hills. It enters the Arbon Valley and travels west through the Curlew National Grasslands, the Sublett Range of the Sawtooth National Forest, the Raft River Valley, the Jim Sage Mountains, and the Albion Mountains of the Sawtooth National Forest. The corridor then dips south of Oakley and then turns northwest. It proceeds northwest along the eastern foot of the Sawtooth National Forest until it meets the proposed corridor at mile 109, just southeast of Artesian City.

This corridor was considered because it is more direct route between these two points; however, there are potential significant environmental effects that preclude it from being selected as the proposed corridor or as a feasible alternative for the Project.

Advantages of this alternative corridor include (**Table 4-15**):

- Crosses 3.8 miles less big game crucial winter range than the proposed corridor;
- Crosses 22.7 miles less irrigated agriculture than the proposed corridor;
- Crosses 22.2 miles less of slope >15% than the proposed corridor;
- Crosses no historic trail buffer, whereas the proposed corridor affects 4.1 miles;
- Avoids VRM Class II areas, whereas the proposed corridor affects 1.3 miles;
- Crosses no designated scenic highway buffer, whereas the proposed corridor affects 3.3 miles; and
- Crosses no urban areas, whereas the proposed corridor affects 5.0 miles.

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 4.4 miles longer than the proposed corridor;
- Is all greenfield ROW (114.6 miles);
- Crosses USFS land for 16.9 miles, in multiple locations;
- Crosses 2.9 miles more of sage grouse lek 0.65-mile buffer than the proposed corridor;
- Crosses 18 raptor nest 0.50-mile buffers, whereas the proposed corridor crosses two; and
- Crosses through a substantial amount of high-quality habitat in the Bannock Range of the Caribou National Forest, Curlew National Grasslands, the Sublett Range of the Sawtooth National Forest, the Albion Mountains of the Sawtooth National Forest, and additional mountainous habitat of the Sawtooth National Forest.

This corridor is not proposed for detailed analysis because it would cross USFS land for 16.9 miles, in multiple locations, most of which is high-quality habitat, and the corridor would be all greenfield ROW. Also, this corridor would result in substantially more effect to raptors and sage grouse compared to the proposed corridor.

Alternative Corridor Considered, but Not Proposed (7m, 7p, 7o, 7q, 7t, 7s)

Moving northward, this is the next alternative considered but not proposed for detailed analysis (**Figure 4-9**). This corridor diverges from the proposed corridor at mile 87.7, about 5 miles west of Albion. It proceeds southwest along the western foot of the Albion Mountains of the Sawtooth National Forest, crossing several creeks and washes. After approximately 11 miles, it turns west, passes 2 miles north of Oakley, and continues to the eastern foot of the Sawtooth National Forest. At that point it travels northwest for approximately 11 miles where it meets the proposed corridor at mile 109 of the proposed corridor, just southeast of Artesian City at Point 7s.

The only identified advantage of this alternative corridor over the proposed corridor (**Table 4-15**) is that it passes through 4.3 miles less agricultural areas than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 9.3 miles longer than the proposed corridor;

- Is all greenfield ROW (31.9 miles);
- Crosses 4.0 miles more big game crucial winter range than the proposed corridor;
- Crosses four raptor nest 0.50-mile buffers, whereas the proposed corridor crosses none;
- Crosses 3.5 miles more of slope >15% than the proposed corridor;
- Crosses 4.4 more miles of historic trail buffer than the proposed corridor;
- Crosses 5.6 miles of VRM Class III, whereas the proposed corridor crosses none; and
- Crosses one sage grouse lek 0.65-mile buffer, whereas the proposed corridor crosses none.

This corridor is not proposed for detailed analysis because, compared to the proposed corridor, it offers only one advantage and has several disadvantages.

Alternative Corridor Considered, but Not Proposed (7m, 7p, 7q, 7t, 7s)

Moving northward, this is the next alternative considered but not proposed for detailed analysis (**Figure 4-9**). This corridor diverges from the proposed corridor at mile 87.7, about 5 miles west of Albion. It travels southwest along the western foot of the Albion Mountains of the Sawtooth National Forest, crossing several creeks and washes. After approximately 8 miles it turns west, passing 3.5 miles north of Oakley, and continuing to the eastern foot of the Sawtooth National Forest. At that point it travels northwest for approximately 6 miles where it meets the proposed corridor at mile 109, just southeast of Artesian City.

Advantages of this alternative corridor include (**Table 4-15**):

- Crosses 3.7 miles less irrigated cropland than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-15**):

- Is 6.2 miles longer than the proposed corridor;
- Is all greenfield ROW (28.8 miles);
- Crosses 3.0 miles more big game crucial winter range than the proposed corridor;
- Crosses four raptor nest 0.50-mile buffers, whereas the proposed corridor crosses none;
- Traverses 2.9 miles more of slope >15% than the proposed corridor; and
- Crosses 3.6 miles more historic trail buffer than the proposed corridor.

This corridor is not proposed for detailed analysis because, compared to the proposed corridor, it offers no advantages and has several disadvantages.

Alternative Corridor Considered, but Not Proposed (7h, 7n, 7s)

Moving northward, this is the next alternative considered but not proposed for detailed analysis (**Figure 4-9**). This corridor diverges from the proposed corridor at mile 78, at the northern edge of the Albion Mountains. It travels generally southwest through Cassia County, paralleling the Snake River. It passes 2.5 miles south of Burley and continues to the Cassia/Twin Falls County

line. It proceeds an additional 2 miles where it joins the proposed corridor at mile 110.3, at the northern edge of the Sawtooth National Forest.

Advantages of this alternative corridor include (**Table 4-15**):

- Is 1.7 miles shorter than the proposed corridor;
- Parallels an existing transmission line for 7.1 miles;
- Avoids big game crucial winter range;
- Crosses no raptor nest 0.50-mile buffers;
- Traverses 7.5 miles less slope >15% than the proposed corridor;
- Crosses 1.2 miles less historic trail buffer than the proposed corridor; and
- Does not cross a designated scenic highway, whereas the proposed corridor does.

Disadvantages of this alternative corridor include (**Table 4-15**):

- Passes through 5.9 miles more irrigated agriculture lands than the proposed corridor.

While this corridor offers some advantages over the proposed corridor, it is not proposed for detailed analysis because it passes through 5.9 miles more irrigated agriculture lands than the proposed corridor.

Alternative Corridor Considered, but Not Proposed (7g, 9h)

The fifth, and northernmost, corridor that was considered but is not proposed for detailed analysis is an alternative that was designed to follow the I-84 corridor (**Figures 4-9 and 4-11**). This corridor diverges from the proposed corridor at mile 72.6 and travels west, parallel to I-84 on the south side between I-84 and the Snake River. It dips north of I-84 at one location to avoid the town of Burley, and the returns to the south side. It continues west until it reaches reference point 7i, 2.5 miles southwest of Eden. It proceeds northwest parallel to the south side of I-84, passing north of Twin Falls and south of Jerome and Wendell. It then turns west just northeast of Hagerman and crosses US 30, the Gooding/Twin Falls County line, and the Snake River. It continues west through the remainder of Twin Falls County, enters Elmore County, and then joins the feasible alternative corridor at reference point 9g approximately 5 miles west of the Twin Falls/Elmore County line.

Advantages of this alternative corridor include (**Table 4-15**):

- Results in relatively less effect from greenfield alignment because is adjacent to an existing developed transportation corridor;
- Is 13.9 miles shorter than the proposed corridor;
- Crosses no big game crucial winter range;
- Avoids raptor nest 0.50-mile buffers;
- Crosses 12.9 miles less slope >15% than the proposed corridor;
- Crosses 1.6 miles less historic trail buffer than the proposed corridor;
- Has 19.7 more miles within the WWEC corridor; and

- Avoids sage grouse lek 0.65-mile buffer, whereas the proposed corridor crosses 1.2 miles.

Disadvantages of this alternative corridor include (**Table 4-15**):

- May affect developed land uses (residential, agricultural, industrial, and commercial) along the existing transportation corridor;
- Crosses 45.7 miles more irrigated agriculture compared to the proposed corridor;
- Crosses 5.4 miles of VRM Class II;
- Encroaches upon the town of Burley; and
- Encroaches upon an airport zone for the town of Burley.

While this corridor offers some advantages over the proposed corridor, it is not proposed for detailed analysis because it passes through more irrigated agriculture lands than the proposed corridor and it would likely affect other developed land uses (residential, industrial, and commercial) along the existing transportation corridor.

Table 4-15. Corridor Comparisons, Segment 7, Burley Subsegment

Attributes	Comparison 1 (No Alternatives)	Comparison 2			Comparison 3		Comparison 4		Comparison 5			Comparison 6		Comparison 7		Comparison 8	
	Proposed	Proposed	Feasible Alternative	Feasible Alternative	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed	Feasible Alternative	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed
	Corridor Reference Points*																
	7d, 7e	7e, 7g	7e, 7f, 7g	7e, 7u, 7g	7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9	7g, 7i	7h, 7k, 7l, 7m, 7t, 7s	7h, 7n, 7s	7m, 7t, 7s	7m, 7p, 7o, 7q, 7t, 7s	7m, 7p, 7q, 7t, 7s	7j, 7k, 7l	7j, 7l	5, 7a, 7c, 7d, 7e, 7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s	5, 7r, 7q, 7t, 7s	7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9, 9a, 9b, 9c, 9f, 9h	7g, 7i, 9g, 9h
Surface Ownership (miles)																	
BLM	0.7	9.1	7.2	9.2	10.3	0.05	3.6	<0.1	1.3	11.5	9.7	0.3	1.8	23.1	47.0	72.0	23.3
USFS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.9	0	0
State	0	0	1.0	0	0.5	3.3	0	1.1	0	0	0	0	0	4.2	3.4	1.1	5.4
Private	3.6	11.6	12.8	12.0	34.9	36.1	28.7	29.5	21.3	20.4	19.1	3.0	2.2	82.9	47.3	50.7c	81.2
Total Length	4.3	20.7	21	21.2	45.7	39.4	32.3	30.6	22.6	31.9	28.8	3.3	4	110.2	114.6	123.8	109.9
Corridors (miles)																	
Within WWEC (Federal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.8	21.3
Within Projected WWEC (Non-Federal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.4	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.1	11.7
Total WWEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13.3	33.0
Parallel to Existing Transmission Lines	0	0	0	0	0	0	0	7.1	0	0	0	0	0	0	0	31.3	23.6
Environmental Resources (miles)																	
Big Game Crucial Winter Range	0.4	0.5	2.7	0.5	5.8	0	1.7	0	0.4	4.4	3.4	0	0	7.5	3.7	14.2	0
Raptor Nest 0.50-mile Buffer	0	0	0	0	1.1 (2 nests)	0	1.1 (2 nests)	0	0	2.9 (4 nests)	2.9 (4 nests)	1.0 (2 nests)	1.4 (3 nests)	1.1 (2 nests)	16.2 (18 nests)	5.3	0
Irrigated Agriculture	1.7	4.8	5.4	5.1	17.3	32.6	15	20.9	14.2	10.5	9.9	0	0	38.7	16	24.8	70.5
Slope >15%	3.9	2.6	3.3	2.3	10.3	<0.1	7.7	0.2	0.5	4	3.4	2.8	3.7	42.9	20.7	15.1	2.2
Historic Trail Buffer	0	1.2	1.8	2.4	3.9	1.2	1.6	0.4	1.6	6	5.2	0	0	4.1	0	3.9	2.3
VRM Class II (BLM Land)	0	0	0	0	<0.1	0	<0.1	0	0	0	0	<0.1	0.3	1.3	0	0	5.4

Attributes	Comparison 1 (No Alternatives)	Comparison 2			Comparison 3		Comparison 4		Comparison 5			Comparison 6		Comparison 7		Comparison 8	
	Proposed	Proposed	Feasible Alternative	Feasible Alternative	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed	Feasible Alternative	Proposed	Considered Not Proposed	Proposed	Considered Not Proposed
	Corridor Reference Points*																
	7d, 7e	7e, 7g	7e, 7f, 7g	7e, 7u, 7g	7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9	7g, 7i	7h, 7k, 7l, 7m, 7t, 7s	7h, 7n, 7s	7m, 7t, 7s	7m, 7p, 7o, 7q, 7t, 7s	7m, 7p, 7q, 7t, 7s	7j, 7k, 7l	7j, 7l	5, 7a, 7c, 7d, 7e, 7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s	5, 7r, 7q, 7t, 7s	7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s, 9, 9a, 9b, 9c, 9f, 9h	7g, 7i, 9g, 9h
VRM Class III (BLM Land)	0	0	0	0	4.6	0	0	0	0	5.6	4	0	0	2.6	0	9.4	0.3
Scenic Highway	0	0	0	0	3.3	0	3.3	0	0	0	0	2.2	2.9	3.3	0	3.3	4.2
Urban Area	0	0	0	0	0	0.3	0	0	0	0	0	0	0	5	0	0	0.3
Airport Zone	0	0	0	0	0	0.3	0	0	0	0	0	0	0	9.7	0	0	0.3
Sage Grouse Lek 0.25-mile Buffer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sage Grouse Lek 0.65-mile Buffer	0	1.3	0	0	1.2	0	1.2	0	0	0.5	0.4	0	1.2	4	6.9	1.2	0

*Depicted on **Figure 4-9**

4.2.8.3 Summary of Segment 7 Corridors

Description of Proposed Corridor

Segment 7 will consist of a single-circuit 500kV transmission line along mostly new alignment from the existing Populus Substation near Downey, Idaho to the new Cedar Hill Substation southeast of Twin Falls, Idaho. It will be constructed on 500kV single-circuit lattice steel towers between 145 and 180 feet tall, and will be energized at 500kV (Idaho Power Company and Rocky Mountain Power 2008).

This segment is approximately 117 miles long. From the expanded Populus Substation, the proposed corridor proceeds about 8.5 miles along the east side of the existing 345kV lines before turning west and crossing these existing lines south of Cedar Mountain. The proposed corridor generally parallels the south side of the existing 345kV corridor around Hawkins Reservoir before turning west, leaving the existing transmission corridor, and passing along the south side of Bradley Mountain. Next, it continues west across the Arbon Valley and the Deep Creek Mountains before crossing SR 37 less than 1 mile south of Rockland at mile 40.7. At mile 47.6, it crosses into Cassia County before crossing the north side of the Sublett Range. This corridor then proceeds across the Raft River Valley, where it turns southwest along the western toe of the Albion Mountains before angling west for about 22 miles. Between mile 73 and 88 the corridor crosses steep terrain north of the Sawtooth National Forest before crossing irrigated cropland between miles 88 and 107.

Description of Feasible Alternative Corridor (5, 7a, 7b, 7d)

This corridor diverges from the proposed corridor at mile 8.5 of the proposed corridor, at which point it heads due west for 4 miles immediately adjacent to the boundary of the Caribou National Forest. At mile 4 it begins to head generally southwest, passing through 0.7 mile of the Caribou National Forest and about 7 more miles through the very northern portion of Oneida County. At mile 12.0 it enters Power County and continues southwest, crossing Bannock Creek, passing just north of Arbon in the Arbon Valley, and traversing the Deep Creek Mountains for approximately 8 miles. On the west side of the Deep Creek Mountains (near mile 26), this alternative heads northwest through Rockland Valley, crosses US 37 at mile 30.7 and South Fork Rock Creek shortly after, crosses Cedar Ridge, crosses Houtz Canyon at mile 37, and continues for 3 miles to a location 5 miles west of Rockland (reference point 7d) where it meets the proposed corridor.

Description of Feasible Alternative Corridor (7e, 7u, 7g)

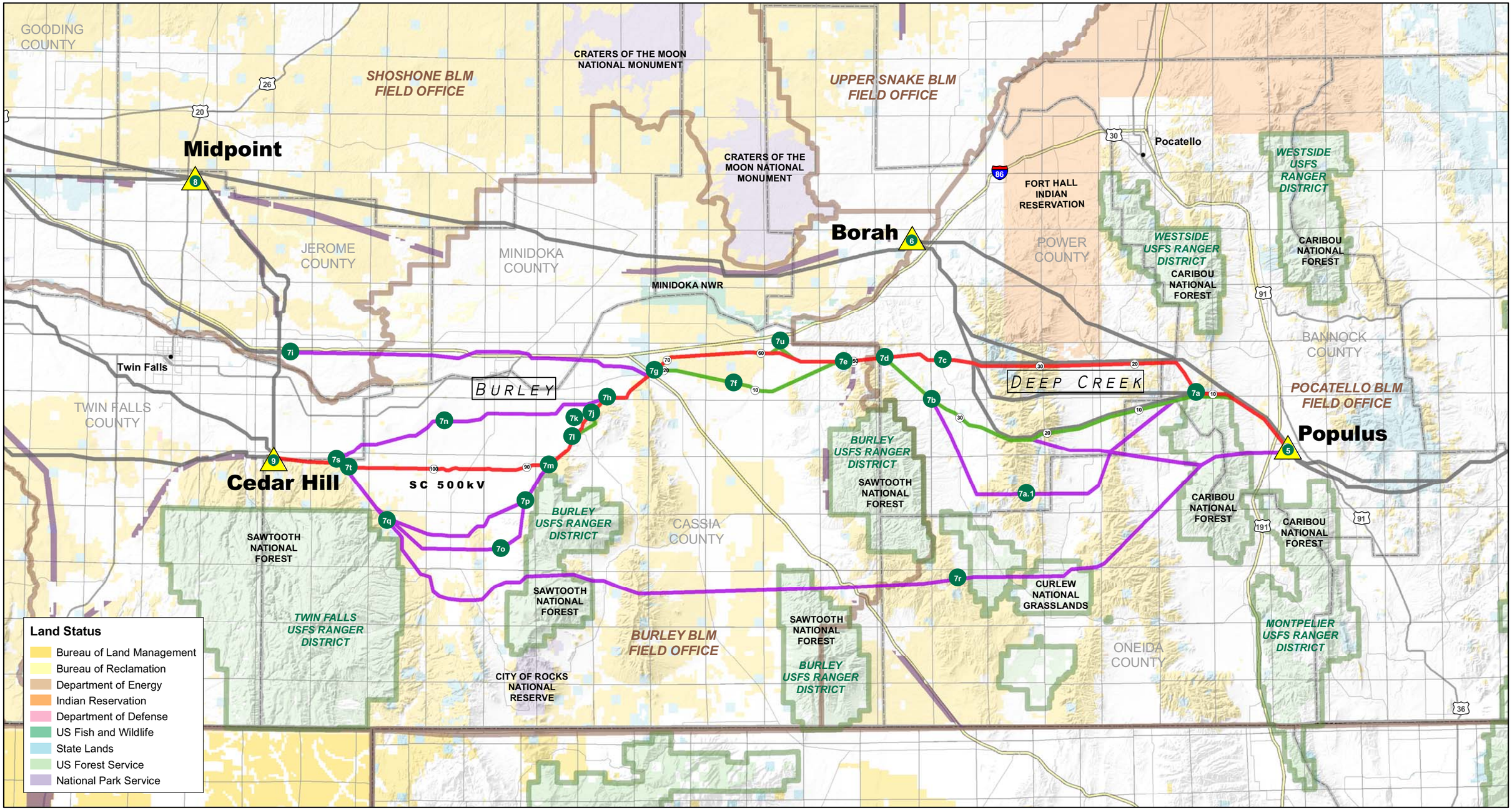
This alternative diverges from the proposed corridor at mile 56.4, approximately 15 miles west of Rockland, Idaho. It proceeds northwest for 2 miles and then southwest for 1 mile back to the proposed corridor.

Description of Feasible Alternative Corridor (7j, 7l)

This alternative diverges from the proposed corridor at mile 80.3, approximately 4.5 miles north of Albion. It proceeds southeast for 1 mile and then southwest for 3 miles back to the proposed corridor.

Conformance with the WWEC and Other Designated ROW Corridors

The WWEC is not mapped within Segment 7; therefore, neither the proposed nor the alternative corridors utilize the WWEC.



0 10 Miles

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 7
Figure 4 - 9

4.2.9 Segment 8 – Midpoint to Hemingway (reference points 8 to 10)

Segment 8 will consist of a single-circuit 500kV transmission line extending from the Midpoint Substation to the Hemingway Substation near the town of Melba, Idaho (**Figure 4-10**). This segment will be constructed on 500kV single-circuit lattice steel towers between 145 and 180 feet tall and will be energized at 500kV.

The two primary parameters that affected high-level routing decisions for this segment were: 1) that the Snake River Birds of Prey NCA be avoided to the extent practical to be consistent with BLM's RMP, and 2) that the new corridor follow an existing utility corridor or the WWEC where possible. A majority of this corridor was initially routed manually based on the identified opportunities for avoiding the NCA and opportunities for co-locating along existing corridors and the WWEC. In the portions of the corridor where refinement was needed due to environmental constraints, the LRT and manual adjustment using aerial photography and topographic maps were employed.

Segment 8 is discussed below as two subsegments that have a different set of opportunities and constraints: 1) the North Snake River Subsegment comprises the eastern portion of Segment 8, and 2) the Treasure Valley Subsegment comprises the western portion of Segment 8.

4.2.9.1 North Snake River Subsegment (8 to 8g)

Proposed Corridor (8, 8a, 8b, 8c, 8c.1, 8o, 8g)

This subsegment runs north of and approximately parallel to the Snake River and I-84, initiating at the Midpoint Substation and terminating just east of the Snake River Birds of Prey NCA (**Figure 4-10**). The Segment 8 proposed corridor proceeds west-northwest, passing just north of the juncture of the Jerome, Lincoln, and Gooding County lines near mile 9. This corridor continues in the same direction, passing between Gooding and Wendell and south of the Gooding Municipal Airport before crossing the Malad River at mile 9.3. It passes along the north and east sides of US 80 N, then US 80/84 for about 12 miles. South of Pioneer Reservoir, it angles northwest crossing the Gooding County/Elmore County line at mile 36.1. The proposed corridor then continues 5 miles along the route of the existing 230kV line, passing about 4.5 miles east of Mountain Home on the east side of US 80/84. It crosses US 20 at mile 67.5, turns west, crossing PacifiCorp's existing 500kV line at mile 88.9 and the Elmore-Ada County line at mile 90.2. At mile 96, near the Union Pacific Railroad, it turns northwest along another existing transmission line. Mile 96 is the terminus for the North Snake River Subsegment.

The relative placement of this subsegment's proposed corridor along existing utility corridors was based on the location of the WWEC and the presence of environmental constraints. In the southern portion of this subsegment (reference points 8 to 8c.1), while the WWEC provides a feasible option, it presents substantially more constraints than the existing utility corridor that is north of the Snake River; therefore, the proposed corridor follows the northern utility corridor rather than the WWEC. Within the existing utility corridor that is north of the Snake River, the proposed corridor was placed in an attempt to avoid transmission congestion that occurs in the southern portion and avoid constraints farther north in the Mount Bennett Hills area, such as higher-quality habitat and difficult construction due to terrain and lack of existing access. In comparison, in the northern portion of this subsegment (reference points 8c.1 to 8g), the proposed corridor is positioned in a location that was identified by the BLM as a new proposed WWEC. The BLM has chosen to propose this location, south of the currently mapped WWEC in order to minimize effects to historic trails. No significant constraints were identified along the

new BLM proposed WWEC; therefore, it was selected as the location for this Project's proposed corridor.

Advantages of the proposed corridor include (**Table 4-16**):

- Follows an existing utility corridor for 94.1 miles of the total 95.8 miles of proposed corridor;
- Crosses 2.0 miles of the Snake River Birds of Prey NCA; however, those areas are within the new BLM proposed WWEC;
- Is within the new BLM proposed WWEC for 36.2 miles (is within the current WWEC for 3.3 miles) out of a total proposed corridor length of 95.8 miles;
- Has relatively few biological constraints;
- Has no Snake River crossing;
- Avoids sage grouse leks and their protective buffers;
- Avoids the Hagerman Fossil Beds National Monument; and
- Following the new BLM proposed WWEC would create more distance between the WWEC and the Oregon Trail segments.

Disadvantages of the proposed corridor include (**Table 4-16**):

- Crosses 22.5 miles of big game crucial winter range;
- Crosses 6.4 miles of historic trail buffer; however, existing transmission lines cross and parallel trails in this region; therefore, it was assumed that staying adjacent to the existing transmission ROW would be preferred over the greenfield options that minimize trail crossings in the area;
- Crosses 3.2 miles of VRM Class I (all but 0.9 mile within the WWEC) adjacent to existing transmission lines and 8.2 miles of VRM Class II;
- Crosses 13.1 miles of irrigated agriculture;
- Crosses 5.2 miles of slope >15%; and
- Crosses 0.9 mile of a designated scenic highway buffer, Highway 30.

The proposed corridor was selected because it follows an existing utility corridor, follows the WWEC to the extent practical, and minimizes environmental constraints, particularly those associated with the Snake River area, the Hagerman Fossil Beds National Monument, and the Mount Bennett Hills area.

Feasible Alternative Corridor (8, 8c.1)

One corridor was identified as a feasible alternative in this subsegment (**Figure 4-10**). This alternative corridor begins at the Midpoint Substation located approximately 9 miles south of Shoshone, Idaho, and extends due west for 9.6 miles through northern Jerome County and 15 miles through Gooding County, passing approximately 3.5 miles north of Wendell, 5.5 miles south of Gooding, and 1 mile north of Hagerman. At the Gooding/Twin Falls County line (at mile 26.6), this alternative crosses the Snake River and continues west to the Twin Falls/Elmore County line (at mile 31.2). At this point the corridor begins heading in a northwest direction, and beginning at mile 36.2, this alternative joins an existing transmission corridor. This alternative corridor parallels the Snake River within approximately 0.5 mile in some locations, as it follows

the existing transmission corridor for 10 miles, crossing Black Mesa and crossing the Snake River again at mile 46.5 just north of Glenns Ferry. This alternative corridor continues to follow the heavily congested existing transmission corridor to reference point 8c.1 (mile 53.5), where it meets the proposed corridor, about 1 mile west of Alkali Creek.

The intent of this alternative corridor is to follow the WWEC for the full extent.

Advantages of this alternative corridor include (**Table 4-16**):

- Is within or parallel to the current WWEC or projected WWEC for 47.2 miles of its 53.6 mile length, whereas the comparable portion of the proposed corridor does not use the WWEC;
- Similar to the proposed corridor, this corridor avoids sage grouse leks and their protective buffers;
- Crosses 21.7 miles less big game crucial winter range than the proposed corridor;
- Avoids VRM Class II areas, whereas the proposed corridor crosses 8.2 miles;
- Crosses 3.5 miles less VRM Class III than the proposed corridor; and
- Crosses 1.5 miles less historic trail buffer compared to the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-16**):

- Is 2.2 miles longer than the proposed corridor;
- Parallels existing transmission lines for 7.9 miles less than the proposed corridor;
- Crosses 3.4 miles more VRM Class I than the proposed corridor; however, all of those locations are in the current WWEC;
- Crosses 3.5 miles more irrigated agriculture than the proposed corridor;
- Crosses 1.2 miles more slope>15% than the proposed corridor;
- Crosses the Snake River twice;
- Crosses 1.8 miles of the Hagerman Fossil Beds National Monument buffer but avoids the monument boundary by 0.5 mile; and
- Crosses 3.3 miles more scenic highway buffer compared to the proposed corridor.

This corridor alternative is considered a feasible option because it follows the proposed WWEC and an existing utility corridor for much of its length. However, it was not selected as the proposed corridor because it presents more sensitive constraints, particularly related to visual effect including visual proximity to the Hagerman Fossil Beds National Monument and two crossings of the Snake River.

Alternative Corridors Considered, but Not Proposed

Several additional corridors were considered for this subsegment, but none are proposed for detailed analysis. Each of these corridors is described below, with the advantages and disadvantages presented in relation to the comparable portion of the proposed corridor.

Alternative Corridor Considered, but Not Proposed (8, 8c, 8c.1)
The intent of this alternative is to follow the I-84 corridor to the extent possible. This corridor diverges from the feasible alternative at mile 20 and heads northwest, paralleling the south side of I-84 and the north side of the Snake River. It passes just south of Bliss and then turns west, still paralleling I-84 and the river. In Elmore County, this corridor crosses the Snake River twice and then meets the proposed corridor at reference point 8c, approximately 4 miles northwest of King Hill (**Figure 4-10**).

Advantages of this alternative corridor include (**Table 4-16**):

- Similar to the proposed corridor, this corridor avoids sage grouse leks and their protective buffers;
- Crosses 18.3 miles less big game crucial winter range than the proposed corridor;
- Crosses 1.8 miles less VRM Class I than the proposed corridor, and the VRM Class I that is crossed is within the WWEC;
- Similar to the proposed corridor, has relatively few biological constraints;
- Crosses 6.4 miles less VRM Class II than the proposed corridor;
- Crosses 2.6 miles less historic trail buffer than the proposed corridor;
- Similar to the proposed corridor, avoids the Hagerman Fossil Beds National Monument; however, it is in closer proximity to this resource compared to the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-16**):

- Parallels the Snake River in relatively close proximity, and has two Snake River crossings;
- Is 2.2 miles longer than the proposed corridor;
- Similar to the proposed corridor in this portion, this corridor does not follow the WWEC;
- Parallels 24.3 miles less existing transmission lines compared to the proposed corridor;
- Crosses 7.1 miles more of scenic US 30 buffer than does the proposed corridor; and
- Is in close proximity to developed land uses (agricultural, residential, commercial, recreational), to a much greater extent than the proposed corridor.

This corridor is not proposed for detailed analysis because it encroaches upon the residential, commercial, recreational, and agricultural development associated with the Snake River corridor.

Alternative Corridor Considered, but Not Proposed (8, 8a, 8c, 8c.1)
This corridor is a slight variation of the previously discussed alternative. This option diverges from the proposed corridor at mile 26 and travels generally west for 3 miles north of I-84 and the town of Bliss, crosses I-84, and then 3 miles west of Bliss joins the primary I-84 alternative discussed above (**Figure 4-10**). The environmental advantages and disadvantages of this corridor are the same as those presented for the previously discussed alternative, with the exceptions that it affects more VRM Class III and less VRM Class II.

Alternative Corridor Considered, but Not Proposed (8c1, 8d, 8e, 8f, 8o)
This alternative was designed to follow the currently proposed WWEC for the full corridor extent and was initially selected as the proposed corridor in this area. However, as discussed above,

BLM subsequently provided preliminary information identifying a new corridor to the south as the new WWEC proposal brought forward by BLM. Therefore, in response to this input from BLM, this alternative, which follows the current WWEC, was changed from proposed corridor status to alternative considered but not proposed for detailed analysis.

This alternative corridor diverges from the proposed corridor at mile 53.3 and continues northwest, parallel to the proposed corridor and adjacent to existing transmission lines and follows the currently mapped WWEC. It rejoins the proposed corridor at a location a few miles east of Indian Creek Reservoir (**Figure 4-10**).

Advantages of this alternative corridor include (**Table 4-16**):

- Similar to the proposed corridor, this corridor avoids sage grouse leks and their protective buffers;
- Similar to the proposed corridor, this corridor avoids big game crucial winter range;
- Similar to the proposed corridor, this corridor avoids VRM Class II;
- Crosses 1.4 miles less historic trail buffer than the proposed corridor; and
- Avoids the Snake River Birds of Prey NCA.

Disadvantages of this alternative corridor include (**Table 4-16**):

- Is 1.0 mile longer than the proposed corridor;
- Is within or parallels the current WWEC or projected WWEC for 36.7 miles; however, it is only within 0.7 mile of the new WWEC;
- Parallels an existing transmission line for 0.9 mile less than the proposed corridor;
- Crosses 3.1 miles of VRM Class I on BLM land, whereas the proposed corridor crosses none; however, these 3.1 miles are within the current WWEC;
- Crosses 0.8 mile more VRM Class III than the proposed corridor;
- Crosses 0.3 mile more irrigated agriculture than the proposed corridor; and
- Similar to the proposed corridor, crosses 1.1 miles of slope >15%.

This corridor was considered because it is constructible, follows existing transmission lines, and has relatively few environmental constraints. However, it is not proposed for detailed analysis because it does not reflect the most up-to-date information regarding the location of the proposed WWEC, whereas the proposed corridor does.

Alternative Corridor Considered, but Not Proposed (8c, 8d, 8e, 8f, 8o)

This alternative is a slight variation of the previously discussed alternative. This option diverges from the proposed corridor at mile 47.7, just south of Blair Trail Reservoir. It travels just northeast of the previously discussed alternative for approximately 11 miles, and rejoins that alternative just northwest of Hot Springs Reservoir (Figure **4-10**).

Advantages of this alternative corridor include (Table **4-16**):

- Parallels an existing transmission line for 1.2 miles more than the proposed corridor;
- Similar to the proposed corridor, this corridor avoids big game crucial winter range; and

- Similar to the proposed corridor, this corridor avoids VRM Class II.

Disadvantages of this alternative corridor include (**Table 4-16**):

- Is 4.1 miles longer than the proposed corridor;
- Is within or parallels the current WWEC or projected WWEC for 35.7 miles; however, it is only within 0.7 mile of the new WWEC;
- Affects three sage grouse leks, including both the 0.65-mile and 0.25-mile buffers;
- Crosses 5.1 miles of VRM Class I, whereas the proposed corridor crosses none in this area;
- Crosses 0.9 mile more irrigated agriculture than the proposed corridor;
- Crosses 0.4 mile more slope>15% than the proposed corridor; and
- Crosses 2.4 miles more historic trail buffer than the proposed corridor.

This alternative is not proposed for detailed analysis because it presents several disadvantages compared to the proposed corridor.

Alternative Corridor Considered, but Not Proposed (8b, 8e, 8f, 8o)

This alternative was designed in an attempt to reduce effects to historic trails. This corridor was routed manually to avoid trails where possible; to avoid other environmental constraints such as sage grouse leks, the King Hill WSA, the King Hill Creek ACEC, and topography near King Hill and King Hill Creek (steep drainages and wide canyons); and to follow an existing utility corridor where possible.

This corridor diverges from the proposed corridor at mile 29.6 and extends in a northwest direction, generally paralleling the north side of the proposed corridor (**Figure 4-10**). It passes north of Pioneer Reservoir, past the Gooding/Elmore County line, and north of Blair Trail Reservoir. It then continues along the very southern foot of the Mount Bennett Hills, and rejoins another alternative where the WWEC is currently mapped.

Advantages of this alternative corridor include (**Table 4-16**):

- Crosses 0.5 mile less big game crucial winter range than the proposed corridor;
- Crosses 2.0 miles less VRM Class II than the proposed corridor;
- Crosses 2.0 miles less irrigated agriculture than the proposed corridor;
- Crosses 3.3 miles less historic trail buffer than the proposed corridor; and

Disadvantages of this alternative corridor include (**Table 4-16**):

- Is within or parallel to the current WWEC or projected WWEC for 15.6 miles; less than the proposed corridor;
- Parallels an existing transmission line for 20.6 miles less than the proposed corridor;
- Crosses 6.2 miles more slope >15% areas than the proposed corridor.

This corridor is not proposed for detailed analysis because its disadvantages outweigh its advantages, compared to the proposed corridor.

Alternative Corridor Considered, but Not Proposed (8b, 8f, 8o)

The northernmost alternative, shown on **Figure 4-10**, was designed to minimize effects to historic trails. The LRT was used to find the best route taking into account these criteria. This alternative corridor diverges from the proposed corridor at mile 29.6 and extends in a northwest direction and then west, extending much farther north than the other alternatives considered for this subsegment in order to avoid constraints such as the King Hill WSA. The majority of this corridor traverses the Mount Bennett Hills. It then rejoins another alternative where the WWEC is currently mapped.

Advantages of this alternative corridor include (**Table 4-16**):

- Similar to the proposed corridor, avoids sage grouse leks and their protective buffers;
- Crosses 6.8 miles less big game crucial winter range than the proposed corridor;
- Crosses 1.6 miles less VRM Class II than the proposed corridor;
- Crosses 2.9 miles less irrigated agriculture than the proposed corridor; and
- Crosses 5.0 miles less historic trail buffer than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-16**):

- Is 5.0 miles longer than the proposed corridor;
- Crosses 0.8 mile more VRM Class I area than the proposed corridor;
- Is within or parallel to the current WWEC or projected WWEC for 18.1 miles; however, the current and BLM new proposed corridor is within the new WWEC for 39.3 miles;
- Parallels existing transmission lines for 37.8 miles less than the proposed corridor does;
- Is greenfield corridor through the Mount Bennett Hills, which is high quality habitat and presents construction difficulty due to topography and lack of existing access; and
- Crosses 32.4 miles more slope >15% areas than does the proposed corridor.

This corridor is not proposed for detailed analysis because its disadvantages outweigh its advantages, compared to the proposed corridor.

Table 4-16 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 8 North Snake River Subsegment, shown in **Figure 4-10**.

Table 4-16. Corridor Comparisons, Segment 8, North Snake River Subsegment (8 to 8g)

Attributes	Comparison 1				Comparison 2			Comparison 3			Comparison 4 (No Alternatives)
	Proposed	Feasible Alternative	Considered Not Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed
	8, 8a, 8b, 8c, 8c.1	8, 8c.1	8, 8c, 8c.1	8, 8a, 8c, 8c.1	8c.1, 8o	8c.1, 8d, 8e, 8f, 8o	8c, 8d, 8e, 8f, 8o	8b, 8c, 8c.1, 8o	8b, 8e, 8f, 8o	8b, 8f, 8o	8o, 8g
	Corridor Reference Points*										
Surface Ownership (miles)											
BLM	29.1	25.1	25.6	32.2	17.4	22.2	27.2	32.2	41.0	35.8	1.8
BOR	0	0	0	0	0.9	0.6	0.6	0.9	0.6	0.6	0
USFS	0	0	0	0	0	0	0	0	0	0	0
State	2.3	6.3	8.0	1.3	6.2	1.5	1.0	8.2	4.3	5.8	1.0
Private	20.0	22.2	18.4	19.2	13.5	14.7	13.3	18.6	14.0	22.76	3.6
Total Length	51.4	53.6	53.6	52.7	38.0	39.0	42.1	59.9	59.9	64.9	6.4
Corridors (miles)											
Within WWEC (Federal)	0	25.9	4.2	<0.1	3.3 (current WWEC); 36.0 (new WWEC);	26.0 (current WWEC); 0.7 (new WWEC)	16.4 (current WWEC)	3.3 (current WWEC)	12.6 (current WWEC)	7.4 (current WWEC)	0.2 (new WWEC)
Within Projected WWEC (Non-Federal)	0	1.6	1.6	0	0	0	8.6 (current WWEC); 0.7 (new WWEC)	36.0 (new WWEC)	0.5 (current WWEC)	0.1 (current WWEC)	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	19.7	7.4	0	0	10.7 (current WWEC)	10.7 (current WWEC)	0	10.6 (current WWEC)	10.6 (current WWEC)	0
Total WWEC	0	47.2 (current WWEC)	13.2 (current WWEC)	<0.1 (current WWEC)	3.3 (current WWEC); 36.0 (new WWEC)	36.7 (current WWEC); 0.7 (new WWEC)	35.7 (current WWEC); 0.7 (new WWEC)	3.3 (current WWEC); 36.0 (new WWEC)	23.7 (current WWEC)	18.1 (current WWEC)	0.2 (new WWEC)

Attributes	Comparison 1				Comparison 2			Comparison 3			Comparison 4 (No Alternatives)
	Proposed	Feasible Alternative	Considered Not Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed	Considered Not Proposed	Considered Not Proposed	Proposed
	8, 8a, 8b, 8c, 8c.1	8, 8c.1	8, 8c, 8c.1	8, 8a, 8c, 8c.1	8c.1, 8o	8c.1, 8d, 8e, 8f, 8o	8c, 8d, 8e, 8f, 8o	8b, 8c, 8c.1, 8o	8b, 8e, 8f, 8o	8b, 8f, 8o	8o, 8g
	Corridor Reference Points*										
Parallel to Existing Transmission Lines	49.7	41.8	25.4	31.6	38.0	37.1	39.2	55.9	35.3	18.1	6.4
Environmental Resources (miles)											
Sage Grouse Lek 0.25-mile buffer	0	0	0	0	0	0	.4	0	0	0	0
Sage Grouse Lek 0.65-mile Buffer	0	0	0	0	0	0	3.2	0	0	0	0
Big Game Crucial Winter Range	22.5	0.8	4.2	10.4	0	0	0	15.6	15.1	8.8	0
VRM Class I (BLM Land)	3.2	6.8	1.4	1.4	0	3.1	5.1	3.2	2.7	4.0	0
VRM Class II (BLM Land)	8.2	0	1.8	1.4	0	0	0	8.2	6.2	6.6	0
VRM Class III (BLM Land)	5.6	2.1	11.9	15.6	15.0	15.8	16.8	15.0	21.4	8.3	1.8
Irrigated Agriculture	12.1	15.6	12.4	11.1	1.0	1.3	1.9	3.1	1.1	0.2	0
Slope >15%	3.8	5.0	4.1	3.7	1.1	1.1	1.5	4.9	11.1	37.3	0.3
Historic Trail Buffer	3.8	2.3	2.9	1.2	2.6	1.2	5.0	6.4	3.1	1.4	0
National Monument	0	1.8	0	0	0	0	0	0	0	0	0
Scenic Highway Buffer	0.9	4.2	8.0	3.8	0	0	0	0	0	0	0
BOP NCA	2.0	0	0	0	2.0	0	0	2.0	0	0	0
NWI Wetlands	0	0.1	0	0	0	0	0	0	0	0	0

*Depicted on **Figure 4-10**

4.2.9.2 Treasure Valley Subsegment (8g to 11)

The second subsegment in Segment 8 is the Treasure Valley Subsegment, which extends from just east of the Snake River Birds of Prey NCA to the Hemingway Substation (Figure 4-10). The primary routing decision for this subsegment was whether or not to consider a new corridor within the BLM-administered Snake River Birds of Prey NCA. An additional significant constraint in this subsegment is the agricultural activity and commercial and residential development that has occurred and continues to occur in this area. The proposed corridor in this subsegment was routed manually in order to address the specific concerns of this region.

Proposed Corridor (8g, 8h, 8j, 8k, 8l, 8m, 8n, 8p, 11)

The proposed corridor is shown on Figure 4-10. It begins at mile 96, a few miles west of Indian Creek Reservoir. It travels northwest, then at mile 108 it turns west across the railroad and traverses the north side of Kuna Butte before turning generally southwest at mile 117, passing south of Powers Butte and McElroy Butte and north of the community of Melba. At mile 125.1 it crosses SR 45 and the Snake River at mile 128 before entering the planned Hemingway substation at mile 131.

The eastern portion of the proposed corridor in this subsegment (8g, 8h, 8j, **Figure 4-10**) was designed to avoid the Snake River Birds of Prey NCA entirely by skirting its northern boundary. The remaining proposed corridor in this subsegment (8j, 8k, 8l, 8m, 8n,11) was developed based on Idaho Power's preference to use existing county road ROWs where possible, avoiding diagonally crossing irrigated agricultural land where possible.

Advantages of the proposed corridor include (**Table 4-17**):

- Complies with BLM's management direction by avoiding the Snake River Birds of Prey NCA;
- Has few to no biological constraints;
- Follows existing electric, roadway, and rail corridors when feasible; and,
- Avoids existing residential, commercial, and publicly disclosed planned developments.

Disadvantages of the proposed corridor include (**Table 4-17**):

- Adds approximately 3.8 miles in total length to avoid the NCA;
- Is a greenfield corridor within a developing commercial and residential area;
- May be in conflict with planned, but not approved, county and private development projects;
- Final siting may require alternative transmission structures to avoid development or reduce visual effect;
- Crosses 4.0 miles of a designated scenic highway buffer, Swan Falls Road;
- Very little WWEC is mapped within this region; the proposed corridor uses only 0.8 mile of WWEC and projected WWEC;
- Does not parallel an existing transmission line;
- Has less flexibility to avoid residences and other structures located along county roads;
- Spans the Snake River between islands that are part of the Deer Flat NWR;
- Crosses 0.5 mile of historic trail buffer; and

- Crosses 13.1 miles of irrigated agriculture.

The eastern portion of the proposed corridor subsegment was selected because it avoids the Snake River Birds of Prey NCA. The western portion of the proposed corridor was selected because it is considered to be the more logistically feasible option from the Companies' perspective, given the constraints presented by the substantial amount of existing, planned, and potential development in the area crossed.

Feasible Alternative Corridors

Three alternatives to the proposed action were considered in order to avoid developing residential areas north and west of the Snake River Birds of Prey NCA. Two of the alternatives would cross through the NCA, though the nature of these alternatives differs significantly. The third alternative presents a variation on the approach to routing across mixed agricultural and developing residential area. Each of these alternatives is identified as feasible and is described below in relation to the comparable portion of the proposed corridor.

Feasible Alternative Corridor (8g to 11)

This is the southernmost alternative in this subsegment. This corridor would consist of building a new single-circuit 500kV line parallel to and 1,500 feet north of an existing PacifiCorp 500kV transmission line through 19.8 miles of the Snake River Birds of Prey NCA and then continuing west to the Hemingway Substation (**Figure 4-10**). This corridor diverges from the proposed corridor at mile 96 of the proposed corridor, approximately 3 miles west of Indian Creek Reservoir, where it then parallels the north side of an existing 500kV line. It travels west, crosses the Union Pacific Railroad, and enters the Snake River Birds of Prey NCA. It continues west through the NCA and paralleling the existing 500kV line, passing north of the Ada County National Guard Maneuver Area. At mile 11.5 this alternative turns southwest, continuing to follow the existing transmission line through the NCA, and then crossing the Ada/Canyon County line and the NCA boundary at mile 22.6. This corridor then runs west, paralleling the existing line for another 3 miles, at which point it begins to head northwest, diverging from the existing line. It crosses the Snake River at mile 27 and then continues for 4.2 miles to the Hemingway Substation.

The RMP (BLM 2008) for the NCA was recently completed. The RMP restricts new transmission lines to designated utility corridors. The designated corridor in the RMP is located south of the Snake River and doesn't include the existing 500kV transmission line. However, the addition of a second 500kV transmission line following the existing 500kV transmission line is an alternative identified in the Treasure Valley Electrical Plan developed by Idaho Power as part of community based planning effort (October 2006). The planning leading to the identification of this alternative is the basis for identifying it for more detailed analysis.

Advantages of this alternative corridor include (**Table 4-17**):

- Is 3.8 miles shorter than the proposed corridor;
- Follows an existing utility corridor for 25.6 miles more than the proposed corridor;
- Presents better constructability opportunities than the proposed corridor because it affects less agriculture and potential residential development area as compared to the proposed corridor;
- Crosses 5.8 miles less irrigated agriculture than the proposed corridor; and
- Is a corridor identified in the Treasure Valley Electrical Plan.

Disadvantages of this alternative corridor include (**Table 4-17**):

- Requires a 19.8 mile new ROW through the Snake River Birds of Prey NCA; is not consistent with the NCA RMP (BLM 2006); would require an RMP amendment;
- Creates a new ROW through the NCA raising concerns regarding habitat loss, fragmentation, and degradation;
- Crosses 4.6 miles of a designated scenic highway buffer, Swan Falls Road; and
- Similar to the proposed corridor, this corridor spans the Snake River between islands that are part of the Deer Flat NWR.

This corridor was identified as a feasible alternative because it is a corridor identified in the Treasure Valley Electrical Plan (Idaho Power 2006) and follows a similar voltage transmission line for almost all of its length. This corridor was not selected as the proposed corridor because it requires a new ROW through the Snake River Birds of Prey NCA.

Feasible Alternative Corridor (8h, 8i, 8j)

The northernmost alternative in this subsegment, shown on Figure 4-10, would consist of rebuilding a portion of an existing 138kV transmission line to 230kV (planned for another project) plus the 500kV Gateway West Transmission Line Project line on to a double-circuit 230/500kV structure. This corridor diverges from the proposed corridor at mile 110.7, approximately 3.5 miles east of Kuna Butte. It travels southwest for 3 miles, and then due west for 3.5 more miles, passing just south of Kuna Butte. It then extends 1 mile southwest, where it rejoins the proposed corridor at mile 119 of the proposed corridor, just southeast of Powers Butte. These activities would be implemented through 7.0 miles of the Snake River Birds of Prey NCA, out of a total corridor length of 7.6 miles.

Advantages of this alternative corridor include (**Table 4-17**):

- Is 0.8 mile shorter than the proposed corridor;
- Is within an existing utility ROW for all 6.5 miles; and
- While a new utility project may not be compliant with the Snake River Birds of Prey NCA RMP, management at the NCA has indicated that this alternative would be feasible because it would be a rebuild of an existing line versus creation of a new utility corridor within the NCA.

Disadvantages of this alternative corridor include (**Table 4-17**):

- Creates new habitat and wildlife disturbance through 7.0 miles of the Snake River Birds of Prey NCA during construction activities, whereas the proposed corridor avoids the NCA;
- An RMP amendment is required for new development within the NCA;
- Crosses less potential residential development compared to the proposed corridor;
- Crosses 1.1 mile less irrigated agriculture than the proposed corridor; and
- Crosses 0.3 mile more of a designated scenic highway, Swan Falls Road, compared to the proposed corridor.

This corridor was identified as a feasible alternative because it has the potential to avoid more agricultural and developing residential areas, and crosses less steep slopes. This corridor was

not selected as the proposed corridor because it requires new construction through the Snake River Birds of Prey NCA.

Feasible Alternative Corridors (8j, 8l, 8n, 11)

This alternative consists of three linked corridor variations to the proposed corridor, shown in **Figure 4-10**. The key decision for this portion of the corridor was determining the approach to greenfield design in an environment of active agricultural use, increasingly residential development, and additional planned infrastructure projects. Overall, the approach for the alternatives in this portion involved developing a more direct corridor as compared to the proposed corridor resulting in diagonal crossings of farms and parcels instead of following county roads. These alternative corridors were developed using the LRT initially, followed by manual refinement using these assumptions.

This alternative diverges from the proposed corridor at mile 119 of the proposed corridor. It extends southwest, passing just south of Powers Butte and McElroy Butte and north of Melba. It continues southwest, crossing the Snake River at mile 7.3 and terminating at the Hemingway Substation at mile 10.

The three alternative corridor variations are presented separately in **Table 4-17**, where they are compared to the corresponding portion of the proposed corridor. The environmental advantages and disadvantages summarized in the bulleted lists below, present this alternative approach as one comparison to the proposed corridor, using the three alternative corridor variations combined.

Advantages of this alternative include (**Table 4-17**):

- Is 1.7 miles shorter than the proposed corridor;
- Crosses about the same amount of irrigated agriculture;
- Reduces construction costs by avoiding large angle tower structures; and
- Has few to no known biological constraints.

Disadvantages of this alternative include (**Table 4-17**):

- Diagonally crosses existing parcel boundaries;
- Crosses more complex topography (crossing buttes) compared to the proposed corridor; and
- Similar to the proposed corridor, this corridor spans between islands that are part of the Deer Flat NWR.

This approach was identified as a feasible alternative because it minimizes effects to residential and agricultural development, and it was not selected as the proposed corridor because it would have more potential effect on future development patterns.

Table 4-17 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 8 Treasure Valley Subsegment, shown in **Figure 4-10**.

Table 4-17. Corridor Comparisons, Segment 8, Treasure Valley Subsegment (8g to 11)

Attributes	Comparison 1		Comparison 2		Comparison 3		Comparison 4		Comparison 5	
	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative
	8g, 8h, 8j, 8k, 8l, 8m, 8n, 8p, 11	8g, 11	8h, 8j	8h, 8i, 8j	8j, 8k, 8l	8j, 8l	8l, 8m, 8n	8l, 8n	8n, 8p, 11	8n, 11
	Corridor Reference Points*									
Surface Ownership (miles)										
BLM	7.3	15.7	3.0	4.1	0	0	0	4.5	0.2	0
BOR	1.3	1.0	0	0	0	0	0	0	0	0
USFS	0	0	0	0	0	0	0	0	0	0
State	1.8	2.1	0	0	0	0	0	0	0	0
Private	24.7	12.5	5.4	3.5	4.2	3.1	4.7	0	2.7	2.5
Total Length	35.1	31.3	8.4	7.6	4.2	3.1	4.7	4.5	2.9	2.5
Corridors (miles)										
Within WWEC (Federal)	0.2	0.2	0	0	0	0	0	0	0.2	0.4
Within Projected WWEC (Non-Federal)	0.6	0.7	0	0	0	0	0	0	0.6	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0	0	0	0	0	0	0	0
Total WWEC	0.8	0.9	0	0	0	0	0	0	0.8	0.4
Parallel to Existing Transmission Lines	0	25.6	0	6.5	0	0	0	0	0	0

Attributes	Comparison 1		Comparison 2		Comparison 3		Comparison 4		Comparison 5	
	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative	Proposed	Feasible Alternative
	8g, 8h, 8j, 8k, 8l, 8m, 8n, 8p, 11	8g, 11	8h, 8j	8h, 8i, 8j	8j, 8k, 8l	8j, 8l	8l, 8m, 8n	8l, 8n	8n, 8p, 11	8n, 11
	Corridor Reference Points*									
Environmental Resources (miles)										
VRM Class III (BLM Land)	0.3	4.7	0	2.1	0	0	0	0	0	0
BOP NCA	0	19.8	0	6.3	0	0	0	0	0	0
Irrigated Agriculture	13.1	7.3	4.2	3.1	3.1	2.4	2.3	3.0	1.7	1.9
Scenic Highway Buffer	4.0	4.6	4.0	4.3	0	0	0	0	0	0
Historic Trail Buffer	0.5	0.8	0	0	0	0	0	0	0.5	0.7
Slope >15%	1.4	0.2	0.5	0	0.1	0	0.8	0.2	0	0

*Depicted on **Figure 4-10**

4.2.9.3 Summary of Segment 8 Corridors

Description of Proposed Corridor

Segment 8 will consist of a single-circuit 500kV transmission line extending from the Midpoint Substation to the Hemingway Substation near the town of Melba, Idaho. This segment will be constructed on 500kV single-circuit lattice steel towers between 145 and 180 feet tall and will be energized at 500kV (Idaho Power Company and Rocky Mountain Power 2008).

The 131-mile long Segment 8 corridor proceeds west-northwest, passing just north of the juncture of the Jerome, Lincoln, and Gooding County lines near mile 9. This corridor continues in the same direction, passing between Gooding and Wendell and south of the Gooding Municipal Airport before crossing the Malad River at mile 9.3. It passes along the north and east sides of US 80 N, then US 80/I-84 for about 12 miles. South of Pioneer Reservoir, it angles northwest crossing the Gooding County/Elmore County line at mile 36.1. The proposed corridor then continues 5 miles along the existing route of the 230kV line, passing about 4.5 miles east of Mountain Home on the east side of US 80/I-84. It crosses US 20 at mile 67.5, turns west, crossing PacifiCorp's existing 500kV line at mile 88.9 and the Elmore-Ada County line at mile 90.2. East of the Union Pacific Railroad it turns northwest along another existing transmission line for about 6 miles, where at mile 102 it turns west across the railroad along the north side of Kuna Butte before turning generally southwest passing south of Power Butte and McElroy Butte and north of the community of Melba. At mile 125.1 it crosses SR 45 and the Snake River before entering the expanded Hemingway Substation at mile 131.

Description of Feasible Alternative Corridor (8, 8c.1)

This feasible alternative begins at the Midpoint Substation located approximately 9 miles south of Shoshone, Idaho, and extends due west for 9.6 miles through northern Jerome County and 15 miles through Gooding County, passing approximately 3.5 miles north of Wendell, 5.5 miles south of Gooding, and 1 mile north of Hagerman. At the Gooding/Twin Falls County line (at mile 26.6), this alternative crosses the Snake River and continues west to the Twin Falls/Elmore County line (at mile 31.2). At this point the corridor begins heading in a northwest direction, and beginning at mile 36.2, this alternative joins an existing transmission corridor. This alternative corridor parallels the Snake River within approximately 0.5 mile in some locations, as it follows the existing transmission corridor for 10 miles, crossing Black Mesa and crossing the Snake River again at mile 46.2 just north of Glenns Ferry. This alternative corridor continues to follow the heavily congested existing transmission corridor to reference point 8c.1 (mile 53.5), where it meets the proposed corridor, about 1 mile west of Alkali Creek.

Description of Feasible Alternative Corridor (8g, 11)

This alternative would consist of building a new single-circuit 500kV line paralleling 1,500 feet north of an existing PacifiCorp 500kV transmission line. This corridor diverges from the proposed corridor at mile 96 of the proposed corridor, approximately 3 miles west of Indian Creek Reservoir, where it parallels the north side of an existing 500kV line. It travels west, crosses the Union Pacific Railroad, and enters the Snake River Birds of Prey NCA. It continues west through the NCA and paralleling the existing 500kV line, passing north of the Ada County National Guard Maneuver Area. At mile 11.5 this alternative turns southwest, continuing to follow the existing transmission line through the NCA, and then crossing the Ada/Canyon County line and the NCA boundary at mile 22.6. This corridor then runs west, paralleling the existing line for another 3 miles, at which point it begins to head northwest, diverging from the existing line. It crosses the Snake River at mile 27 and then continues for 4.2 miles to the Hemingway Substation.

Description of Feasible Alternative Corridor (8h, 8i, 8j)

This alternative would consist of rebuilding a portion of an existing 138kV transmission line to 230kV (planned for another project) plus the 500kV Gateway West Transmission Line Project line on to a double-circuit 230/500kV structure. This corridor diverges from the proposed corridor at mile 110.7 of the proposed corridor, approximately 3.5 miles east of Kuna Butte. It travels southwest for 3 miles, and then due west for 3.5 more miles, passing just south of Kuna Butte. It then extends 1 mile southwest where it rejoins the proposed corridor at mile 119 of the proposed corridor, just southeast of Powers Butte.

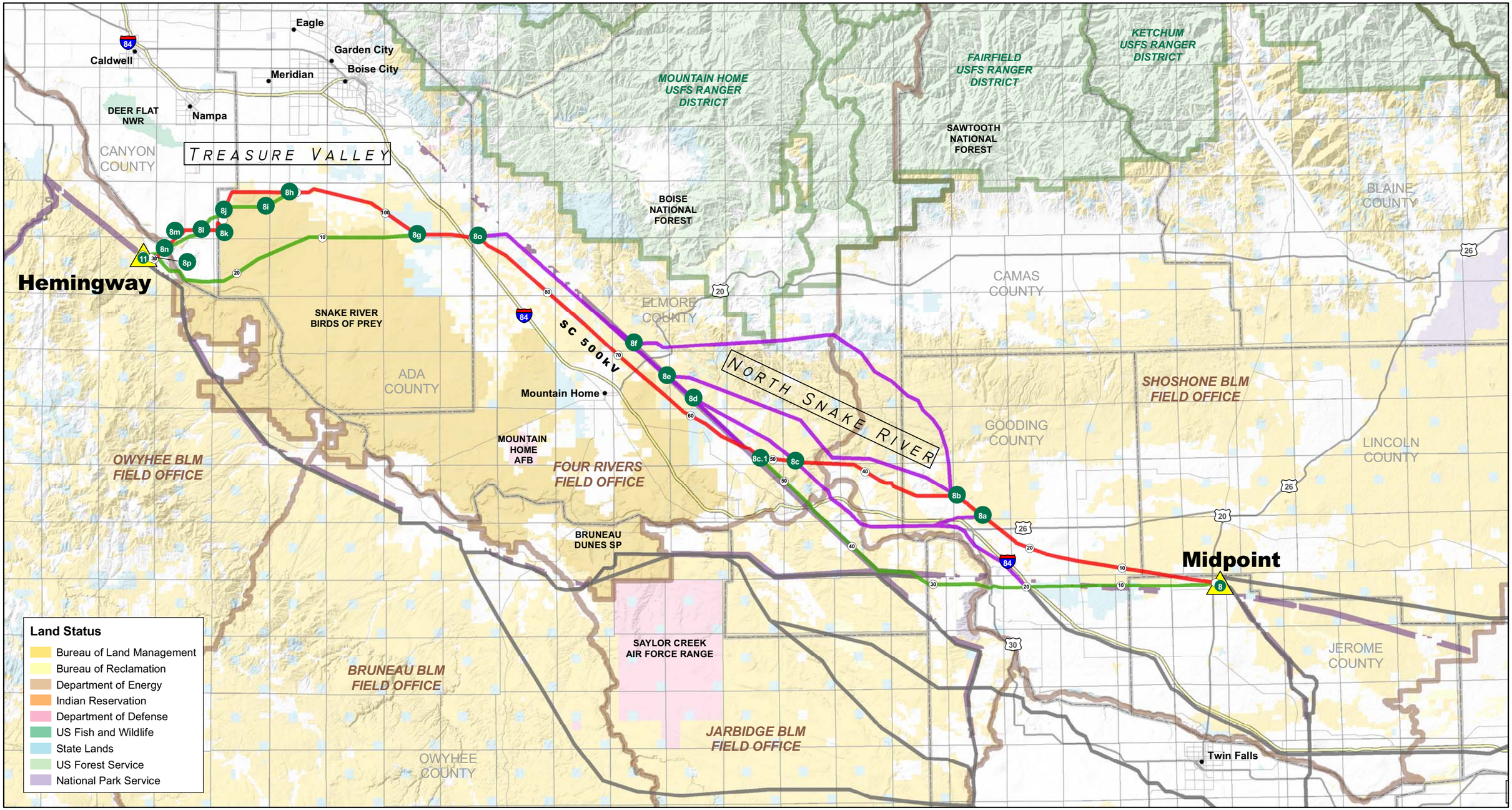
Description of Feasible Alternative Corridor (8l, 8n, 11)

This alternative consists of three corridor variations to the proposed corridor. This alternative diverges from the proposed corridor at mile 119 of the proposed corridor. It extends southwest, passing just south of Powers Butte and McElroy Butte and north of Melba. It continues southwest, crossing the Snake River at mile 7.3 and terminating at the Hemingway Substation at mile 10.

Conformance with the WWEC and Other Designated ROW Corridors

The relative placement of the Segment 8 North Snake River Subsegment's proposed corridor along existing utility corridors was based on the location of the current WWEC and the presence of environmental constraints. In the southern portion of this subsegment (reference points 8 to 8c.1), WWEC provides a feasible option but presents substantially more environmental constraints than the existing utility corridor that is north of the Snake River; therefore, the proposed corridor follows the northern utility corridor rather than the WWEC. Within the existing utility corridor that is north of the Snake River, the proposed corridor was placed in an attempt to avoid severe transmission congestion that occurs in the southern portion and avoid constraints farther north in the Mount Bennett Hills area, such as higher-quality habitat and difficult construction due to terrain and lack of existing access. In comparison, in the northern portion of this subsegment (reference points 8c1 to 8g), the proposed corridor is positioned in a location that was identified by the BLM as a new proposed WWEC. The BLM has chosen to propose this location, south of the currently mapped WWEC, in order to minimize effects to historic trails. No significant constraints were identified along the new WWEC; therefore, it was selected as the location for this Project's proposed corridor in the northern portion of this subsegment. In total, the proposed corridor for this subsegment is within the current and new BLM proposed WWEC for 39.3 miles out of a total proposed corridor length of 95.8 miles.

In the Segment 8 Treasure Valley Subsegment, the only small area where the WWEC has been proposed is immediately adjacent to the Hemingway Substation; therefore, the WWEC is not an available routing opportunity in this portion of the proposed corridor.



0 10 Miles

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ROCKY MOUNTAIN POWER
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An IDACORP Company

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 8
Figure 4 - 10

4.2.10 Segment 9 – Cedar Hill to Hemingway (reference points 9 to 11)

Segment 9 will consist of a single-circuit 500kV transmission line from the new Cedar Hill Substation southeast of Twin Falls, Idaho to the new Hemingway Substation southwest of Boise, Idaho (**Figure 4-11**). It will use single-circuit lattice steel towers between 145 and 180 feet tall and will be energized at 500kV (Idaho Power Company and Rocky Mountain Power 2008).

Segment 9 is broken into three subsegments each with its own set of opportunities and constraints: 1) the Magic Valley Subsegment comprises the eastern portion of this segment, 2) the Saylor Creek Subsegment comprises the central portion, and 3) the Owyhee Subsegment comprises the western portion.

4.2.10.1 Magic Valley Subsegment (9 to 9h)

The Magic Valley Subsegment extends from the new Cedar Hill Substation to reference point 9h (mile 78) (**Figure 4-11**). A variety of corridor alternatives was considered for this subsegment. The primary environmental factors taken into account during routing in this subsegment were long spans of uninterrupted irrigated agriculture; commercial, residential, and industrial development; the WWEC; and effects to visual resources.

Proposed Corridor (9, 9a, 9b, 9c, 9f, 9h)

The proposed corridor proceeds generally west adjacent to agricultural land. It continues west about 2.2 miles south of Twin Falls military reservation and crosses US 93 at about mile 17.5. It then turns northwest about one mile east of Salmon Falls Creek and continues parallel the east side of Salmon Falls Creek adjacent to an existing 138kV transmission line for about 13.4 miles before turning more westward and crossing this creek. Approximately 5.2 miles west of Salmon Falls Creek, it crosses into Owyhee County. Traversing Owyhee County for about 20 miles, the proposed corridor parallels the Blue Ridge and enters Elmore County at mile 67.4. In Elmore County the line continues northwest east of Saylor Creek Air Force Range. It then crosses back into Owyhee County, where the Magic Valley Subsegment terminates (mile 78) (**Figure 4-11**).

The proposed corridor was developed using the LRT followed by manual refinement using constraints layers, aerial photography, and topographic maps.

Advantages of the proposed corridor include (**Table 4-18**):

- Parallels existing transmission lines for 25.0 miles;
- Crosses only 7.5 miles of irrigated agriculture;
- Also minimizes effects to rural residential development;
- Avoids VRM Class I and II;
- Has no known effects to cultural resources or historic trails;
- Has few known biological resource constraints; and
- Is within or parallel to the WWEC or projected WWEC for 15.0 miles.

Disadvantages of the proposed corridor include (**Table 4-18**):

- Crosses 4.7 miles of slope >15% areas;
- Encroaches upon 0.50-mile buffer of four raptor nests; and

- Crosses 8.4 miles of big game crucial winter range.

The proposed corridor was selected because it presents fewer challenges associated with development in areas of irrigated agriculture and rural residential development and follows existing transmission line corridors.

Feasible Alternative Corridor (9c, 9d, 9e, 9g, 9h)

One corridor was identified as a feasible alternative to a corresponding segment of the proposed corridor (9c, 9f, 9h) (**Figure 4-11**). This alternative segment was routed to follow the WWEC and an existing utility corridor over the majority of its length. This alternative diverges from its corresponding segment of the proposed corridor at mile 41.4, where it joins an existing transmission corridor, about 3.5 miles northwest of Castleford. It runs north, crossing Salmon Falls Creek at about mile 1.0, and parallels the existing line within about 0.25 mile and paralleling Salmon Falls Creek within roughly 1 to 4 miles, until reaching mile 14. At that point it turns northwest, continuing to parallel the existing transmission line within approximately 1.5 miles, and generally paralleling the Snake River on the southwest side, crossing the Twin Falls/Elmore County line at mile 21.3, and continuing in this manner for another 6.5 miles. At this point the corridor turns due west and proceeds, crossing Rosevear Gulch and then Deadman Flat. Finally, it proceeds another 6 or 7 miles through Deadman Flat, traveling generally northwest, and terminating just west of the Owyhee/Elmore County line about 3 miles south of the Snake River at mile 78, where it joins the proposed corridor.

Advantages of this alternative corridor segment include (**Table 4-18)**:

- Is within the WWEC or projected WWEC for 44.6 miles, 44.3 miles more than the corresponding proposed corridor segment;
- Parallels existing transmission lines for 21.7 miles, 17.5 miles more than the proposed corridor segment;
- Similar to the proposed corridor, this corridor avoids historic trails; and
- Similar to the proposed corridor, this corridor has no known effects biological resources.

Disadvantages of this alternative corridor segment include (**Table 4-18**):

- Is 7.9 miles longer than the proposed corridor segment;
- Crosses 8.7 miles more irrigated agriculture than the proposed corridor segment;
- Crosses 1.6 miles of VRM Class I on BLM land;
- Similar to the proposed corridor, this corridor segment crosses 2.5 miles of slope >15% areas; and
- Crosses in close proximity to the Hagerman Fossil Beds National Monument.

This corridor is considered a feasible alternative because it is constructible and it is consistent with the overall Project intent to follow the WWEC to the extent possible. It was not selected as the proposed corridor because it is longer than the proposed corridor and it crosses in close proximity to the Hagerman Fossil Beds National Monument and would have more visual and agricultural effects.

Table 4-18. Corridor Comparisons, Segment 9, Magic Valley Subsegment (9 to 9h)

Attributes	Comparison 1		Comparison 2	
	Proposed	Considered Not Proposed	Proposed	Feasible Alternative
	Corridor Reference Points*			
	9, 9a, 9b, 9c, 9f, 9h	9, 9e, 9f, 9h	9c, 9f, 9h	9c, 9d, 9e, 9g, 9h
Surface Ownership (miles)				
BLM	61.7	29.4	31.8	28.3
BOR	0	2.7	0	0
USFS	0	0	0	0
State	0.6	0	0.6	1.0
Private	15.8	42.2	4.3	15.3
Total Length	78.1	74.3	36.7	44.6
Corridors (miles)				
Within WWEC (Federal)	6.4	0.9	0.3	33.1
Within Projected WWEC (Non-Federal)	6.1	0	0	11.5
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	2.5	0	0	0
Total WWEC	15.0	0.9	0.3	44.6
Parallel to Existing Transmission Lines	25.0	0	4.2	21.7
Environmental Resources (miles)				
Big Game Crucial Winter Range	8.4	0.1	0	0
Irrigated Agriculture	7.5	36.8	1.7	10.4
VRM Class I (BLM Land)	0	0	0	1.6
VRM Class II (BLM Land)	0	0.3	0	0
Slope >15%	4.7	3.4	2.5	2.5
Raptor Nest 0.50-mile Buffer	4.2 (4 nests)	0	0	0
Airport Zone	0	3.8	0	0
National Monument	0	0	0	0
Historic Trail Buffer	0	0	0	0
Scenic Highway Buffer	0	15.8	0	0

*Depicted on **Figure 4-11**

Alternative Corridors Considered, but Not Proposed

One alternative corridor was considered for this subsegment, but is not proposed for detailed analysis.

Alternative Corridor Considered, but Not Proposed (9, 9e, 9f)

This alternative corridor, shown on **Figure 4-11**, exits the Cedar Hill Substation in a northwesterly direction, generally paralleling the Snake River. It passes through the Pleasant Valley, crosses Rock Creek, passes about 3 miles south of Twin Falls, continues through the Melon Valley, crosses Salmon Falls Creek, and reaches reference point 9e. From this point it continues northwest through the remainder of Twin Falls County, through northern Owyhee County, and into southern Elmore County, where it meets the proposed corridor at reference point 9f.

This alternate corridor was designed to create a more direct route compared to the proposed corridor. However, this alternative passes through much more irrigated agricultural land (primarily center pivot), and is in proximity to more rural residential development.

Advantages of this alternative corridor include (**Table 4-18):**

- Is 3.9 miles shorter than the proposed corridor;
- Avoids raptor nests;
- Has no known cultural resource or historic trail constraints;
- Crosses 8.3 miles less big game crucial winter range than the proposed corridor;
- Has few known biological resource constraints; and
- Crosses 1.3 miles less slope >15% area than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-18**):

- Is within or parallel to the WWEC or projected WWEC for only 0.9 mile, compared to 15.0 miles for the proposed corridor;
- Does not parallel existing transmission lines, whereas the proposed corridor does so for 25.0 miles;
- Passes through 29.3 more miles of irrigated agricultural lands (primarily center pivot) than the proposed corridor;
- Is in proximity to rural residential development;
- Crosses 0.3 mile of VRM Class II, whereas the proposed corridor avoids this resource;
- Encroaches upon an airport buffer zone; and
- Crosses 15.8 miles of a designated scenic highway, Highway 30.

This corridor is not proposed for detailed analysis because it passes through dense irrigated agricultural lands (primarily center pivot), is in proximity to rural residential development, and it offers no significant advantage over the proposed corridor.

Table 4-18 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 9 Magic Valley Subsegment, shown in **Figure 4-11**.

4.2.10.2 Saylor Creek Subsegment (9h to 9m)

The Saylor Creek Subsegment is shown on **Figure 4-11**. The primary routing opportunity within this subsegment is the WWEC. The primary constraints within this subsegment are the Saylor Creek Air Force Range, which must be avoided, the Bruneau Dunes State Park and the Snake River Birds of Prey NCA, which should be avoided except in locations that are also within a designated corridor.

Proposed Corridor (9h, 9i, 9k, 9l, 9m)

The proposed corridor in this subsegment begins at mile 78.1, at which point it turns due west and then southwest staying north of the northern boundary of Saylor Creek Air Force Range and south of Bruneau Dunes State Park. From this point it proceeds generally southwest

across the Bruneau River and Bruneau Valley. On the west side of this valley the route turns northwest, crosses SR 51, and then continues northwesterly on the southwest side of the Snake River and SR 78. This subsegment terminates at mile 107.5.

The proposed corridor between the State Park and the Air Force Range was routed to minimize visual effects from the State Park, avoid crossing the State Park, and avoid conflicts with the Air Force Range. West of this point, the objective was to stay within the WWEC.

Advantages of the proposed corridor include (**Table 4-19**):

- Is within or parallel to the proposed WWEC or projected WWEC for 23.5 miles out of a total proposed corridor length of 29.1 miles; 9.0 of these miles are through the Snake River Birds of Prey NCA, but this is not considered a disadvantage in this case because it is within the WWEC;
- Presents few biological constraints;
- Is the most direct route possible, given the constraints and opportunities;
- Avoids lands managed by the State Park;
- Minimizes visual effects from the State Park;
- Avoids VRM Class I; and
- Has no known biological constraints.

Disadvantages of the proposed corridor include (**Table 4-19**):

- Crosses 1.7 miles of VRM Class II;
- Traverses 4.0 miles of slope >15%s;
- Crosses 5.3 miles of irrigated agriculture; and
- Crosses 0.5 mile of historic trail buffer.

This corridor was selected as the proposed corridor because it avoids crossing the State Park, avoids conflicts with the Air Force Range, follows the WWEC, and is the most direct route possible, given the constraints and opportunities.

Alternative Corridor Considered, but Not Proposed (9i, 9j, 9l)

This alternative corridor segment was an initial design for the constriction point between the State Park and the Air Force Range that was based on a larger buffer from the Air Force Range (**Figure 4-11**). It deviates slightly from the proposed corridor, beginning at mile 83.6, heads due west, then due south, then southwest to avoid conflicts with the Air Force Range.

However, several disadvantages of this corridor were identified in comparing it to the proposed corridor in this area. The alternative is 1.5 miles longer and would pass through the State Park for 0.3 miles, affect the view from the park more so than would the proposed corridor, and would cross VRM Class II land, which the proposed corridor would not. Upon further consultation with the Air Force Range, this alternative was dropped from consideration because the proposed corridor was agreed upon as a means to avoid conflicts with the Air Force Range and the State Park.

Table 4-19. Corridor Comparisons, Segment 9, Saylor Creek Subsegment (9h to 9m)

Attributes	Comparison 1 (No Alternatives)	Comparison 2		Comparison 3 (No Alternatives)	Comparison 4	
	Proposed	Proposed	Considered Not Proposed	Proposed	Proposed	Considered Not Proposed
	Corridor Reference Points*					
	9h, 9i	9i, 9k, 9l	9i, 9j, 9l	9l, 9m	9b, 9c, 9f, 9h, 9i, 9k, 9l, 9m	9b, 9m
Surface Ownership (miles)						
BLM	5.1	7.4	9.7	6.5	51.1	60.1
USFS	0	0	0	0	0	0
State	0	1.1	0.3	0	1.7	1.0
Private	0.4	0.6	0.6	8.0	16.1	6.7
Total Length	5.5	9.1	10.6	14.5	68.9	67.8
Corridors (miles)						
Within WWEC (Federal)	5.5	0.2	10.0	5.1	12.9	0
Within Projected WWEC (Non-Federal)	5.5	0	10.6	7.2	12.7	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0	0	0	0
Total WWEC	5.5	0.2	10.6	7.2	12.9	0
Parallel to Existing Transmission Lines	0	0	0	0	0	0
Environmental Resources (miles)						
VRM Class I (BLM Land)	0	0	0	0	0	3.5
VRM Class II (BLM Land)	1.7	0	1.7	0	3.5	0.3
WSA	0	0	0	0	0	3.6
ACEC	0	0	0	0	0	2.0
Snake River NCA	0	9.0	10.4	0	9.0	0
State Park	0	0	0.3	0	0	0
Slope >15%	1.5	2.0	2.0	0.5	6.5	2.5
Irrigated Agriculture	0.4	0.1	<0.1	4.8	8.8	4.2
Historic Trail Buffer	0	0.5	0.5	0	0.5	0.6

*Depicted on **Figure 4-11**

Alternative Corridor Considered, but Not Proposed (9b to 9m)

An additional corridor was considered that spans both the Magic Valley and Saylor Creek Subsegments (**Figure 4-11**). This corridor was designed to create more distance from both the Saylor Creek Air Force Range and the Bruneau Dunes State Park and to avoid the area between these two properties by extending much farther south than the other corridors considered.

This alternative initiates with a crossing of Salmon Falls Creek and then extends westward for approximately 33 miles through the Bruneau Desert, then crosses the East Fork of the Bruneau River, proceeds about 5 miles through the Inside Desert, crosses Bruneau Canyon/Bruneau River, and proceeds 5 miles through the Blackstone Desert. At this point it turns northwest and travels approximately 25 miles, between Big Hill and Bruneau Canyon/Bruneau River. This

alternative corridor then terminates at a location approximately 6 miles west of Strike Reservoir, where it joins the proposed corridor at mile 107.5 of the proposed corridor.

Advantages of this alternative corridor include (**Table 4-19**):

- Avoids lands managed by the State Park;
- Avoids lands managed by the Saylor Creek Air Force Range;
- Crosses 3.2 miles less VRM Class II than the proposed corridor;
- Crosses 4.0 miles less slope >15% area than the proposed corridor; and
- Crosses 4.6 miles less irrigated agriculture than the proposed corridor.

Disadvantages of this alternative corridor include (**Table 4-19**):

- Is greenfield corridor for the entire length of line;
- Is not within the WWEC;
- Crosses 3.6 miles of the Sheep Creek WSA associated with the Bruneau River in Bruneau Canyon;
- Crosses 2.0 miles of an ACEC associated with the Bruneau River in Bruneau Canyon. This area is designated as an ACEC because of bighorn sheep and cultural resources in the area;
- Crosses 3.5 miles of VRM Class I on BLM land associated with Bruneau Canyon; and
- Crosses 0.6 mile of historic trail buffer.

This corridor is not proposed for detailed analysis because it presents more significant effects to environmental resources compared to the proposed corridor, particularly to VRM Class I, a WSA, and an ACEC.

Table 4-19 presents quantitative comparisons of the characteristics of the set of corridors analyzed for the Segment 9 Saylor Creek Subsegment, shown in **Figure 4-11**.

4.2.10.3 Owyhee Subsegment (9m to 11)

Proposed Corridor (9m, 11)

Figure 4-11 shows the Owyhee Subsegment, which picks up at mile 107.5. The proposed corridor continues northwest on the southwest side of the Snake River and SR 78. At mile 136.1 this corridor crosses SR 78 and stays east of this highway for about 7.5 miles before crossing again to the west side of this highway and traversing a 6.5 mile segment of the Snake River Birds of Prey NCA and then entering the expanded Hemingway Substation at mile158.

The alternatives analysis for this subsegment was limited in scope because between these two reference points a clear corridor opportunity exists along the WWEC.

Advantages of the proposed corridor include (**Table 4-20**):

- Is within or parallel to the WWEC or projected WWEC for 48.0 miles out of a total proposed corridor length of 50.6 miles; 9.1 of these miles crosses through the NCA, but

this is not considered a disadvantage in this case because it is within the proposed federally designated energy corridor;

- Parallels an existing transmission line for 4.4 miles;
- Has few known biological constraints; and
- Has no known effects to cultural resources or historic trails.

Disadvantages of the proposed corridor include (**Table 4-20**):

- Crosses 0.2 miles of VRM Class II;
- Is within 2 miles of a designated scenic highway buffer, Shoofly Road; and
- Crosses one sage grouse lek 0.65-mile buffer.

The proposed corridor was selected because it is within the WWEC for the entire corridor and has few known effects to environmental resources.

Table 4-20 presents quantitative data on of the characteristics of the corridor analyzed for the Segment 9 Owyhee Subsegment, shown in **Figure 4-11**.

Table 4-20. Corridor Comparisons, Segment 9, Owyhee Subsegment (9m to 11)

Attributes	Proposed Corridor Reference Points* 9m, 11
Surface Ownership (miles)	
BLM	34.0
BOR	2.1
USFS	0
State	1.1
Private	13.2
Total Length	50.4
Corridors (miles)	
Within WWEC (Federal)	31.5
Within Projected WWEC (Non-Federal)	5.1
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	11.4
Total WWEC	48.0
Parallel to Existing Transmission Lines	4.4
Environmental Resources (miles)	
VRM Class II (BLM Land)	0.2
NCA	9.1
Scenic Highway	4.3
Sage Grouse Lek 0.65-mile Buffer	1.1

*Depicted on **Figure 4-11**

4.2.10.4 Summary of Segment 9 Corridors

Description of Proposed Corridor

Segment 9 will consist of a single-circuit 500kV transmission line from the new Cedar Hill Substation southeast of Twin Falls, Idaho to the new Hemingway Substation southwest of Boise, Idaho. It will use single-circuit lattice steel towers between 145 and 180 feet tall and will be energized at 500kV (Idaho Power Company and Rocky Mountain Power 2008).

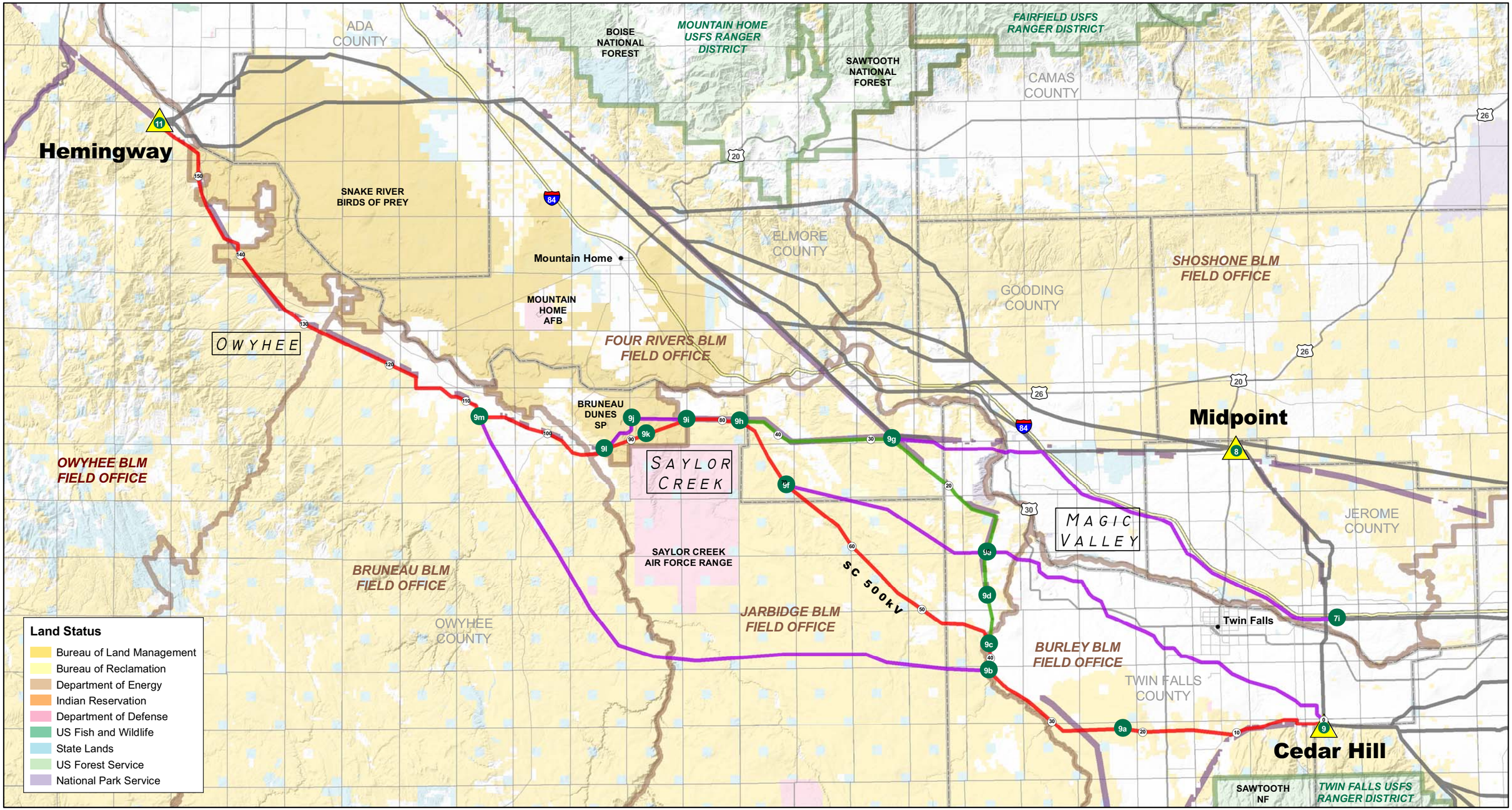
The proposed corridor proceeds generally west adjacent to agricultural land. The corridor continues west about 2.2 miles south of Twin Falls military reservation, crosses US 93 at about mile 17.5. It then turns northwest about one mile east of Salmon Falls Creek and continues parallel the east side of Salmon Falls Creek adjacent to an existing 138kV transmission line for about 13.4 miles before turning more westward and crossing this creek. Approximately 5.2 miles west of Salmon Falls Creek, it crosses into Owyhee County. Traversing Owyhee County for about 20 miles, the corridor parallels the Blue Ridge and enters Elmore County at mile 67.4. In Elmore County the line continues northwest east of Saylor Creek Air Force Range. Upon crossing back into Owyhee County at mile 77.6, the corridor turns due west and then southwest staying north of the northern boundary of Saylor Creek Air Force Range and east of Bruneau Dunes State Park. From this point it proceeds generally southwest across the Bruneau River and Bruneau Valley. On the west side of this valley it turns northwest, crosses SR 51, and then continues northwesterly on the southwest side of the Snake River and SR 78. At mile 136.1 it crosses SR 78 and stays east of this highway for about 7.5 miles before crossing again to the west side of this highway and traversing a 9.0 mile segment of the Snake River Birds of Prey NCA and then entering the expanded Hemingway Substation at mile 158.

Description of Feasible Alternative Corridor

This alternative diverges from the proposed corridor at mile 41.4 of the proposed corridor, where it joins an existing transmission corridor, about 3.5 miles northwest of Castleford. It runs north, crossing Salmon Falls Creek at mile 1, paralleling the existing line within about 0.25 mile and paralleling Salmon Falls Creek within a few miles, until reaching mile 14. At that point it turns northwest, continuing to parallel the existing transmission line within approximately 1.5 miles, and generally paralleling the Snake River on the southwest side, crossing the Twin Falls/Elmore County line at mile 21.3, and continuing in this manner for another 6.5 miles. At this point the corridor turns due west and proceeds crossing Rosevear Gulch and then Deadman Flat. Finally, it proceeds another 6 or 7 miles through Deadman Flat, traveling generally northwest, and terminating just west of the Owyhee/Elmore County line about 3 miles south of the Snake River at mile 78, where it joins the proposed corridor.

Conformance with the WWEC and Other Designated ROW Corridors

For routing the eastern half of Segment 9, the WWEC was used in an opportunistic fashion rather than it driving routing decisions overall. In the Magic Valley Subsegment, the proposed corridor is within or parallel to the WWEC or projected WWEC for 15.0 miles out of a total proposed corridor length of 78.1 miles. However, in the western half of Segment 9, the WWEC was the primary or one of the primary elements used for routing the proposed corridor. In the Saylor Creek Subsegment, the proposed corridor is within or parallel to the WWEC or projected WWEC for 12.9 miles out of a total proposed corridor length of 29.1 miles, and in the Owyhee Subsegment, the proposed corridor is within or parallel to the WWEC or projected WWEC for 48.0 miles out of a total proposed corridor length of 50.4 miles.



0 10 Miles

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IDAHO POWER
An IDACORP Company

Revised 09-06-08

Project Features
- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes
- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative
- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation
- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 9
Figure 4 - 11

4.2.11 Segment 10 – Cedar Hill to Midpoint (reference points 8 to 9)

Segment 10 will consist of a single-circuit 500kV transmission line carried on steel lattice structures, extending from the existing Midpoint Substation near Jerome, Idaho, south to the new Cedar Hill Substation southeast of Twin Falls, Idaho (**Figure 4-12**). There is only one subsegment in Segment 10, the Minidoka Subsegment.

4.2.11.1 Minidoka Subsegment (8 to 9)

Proposed Corridor (8, 10a, 10c, 9)

This 32.7-mile long proposed corridor exits the Midpoint Substation in a southeast direction for approximately 10.1 miles. At mile 13.5, it turns south crossing the North Side Main Canal, and angles southeast again before turning south again at mile 16.0. The corridor continues south across Goose Lake west of the community of Eden, and then crosses I-84, the Snake River, the Jerome County/Twin Falls County line, and US 30 before entering the proposed Cedar Hill Substation at mile 32.7.

For most of its distance, the proposed corridor would parallel the existing State Line to the midpoint 345kV transmission line. The WWEC is mapped coincident with the existing transmission line except where it deviates to the west to avoid the Minidoka Internment National Monument. In this location, the proposed corridor would follow the WWEC.

Advantages of the proposed corridor include (**Table 4-21**):

- Parallels an existing utility corridor for 25.2 miles out of a total corridor length of 32.9 miles;
- Is within the WWEC or projected WWEC for 31.0 miles out of a total corridor length of 32.9 miles;
- Does not cross areas mapped by BLM as VRM Class I or II;
- Avoids the Minidoka Internment National Monument; and
- Avoids sage grouse lek 0.25-mile buffers.

Disadvantages of the proposed corridor include (**Table 4-21**):

- Has one crossing of the Snake River;
- Crosses 1.1 miles of historic trail buffer;
- Crosses 14.4 miles of irrigated agriculture;
- Is within 2 miles of a designated scenic highway buffer, Highway 30; and
- Crosses 2.0 miles of sage grouse lek 0.65-mile buffer.

The proposed corridor was selected because it follows an existing utility corridor and the WWEC to the extent possible while also avoiding the Minidoka Internment National Monument and minimally affecting other environmental resources.

Alternative Corridor Considered, but Not Proposed (10a, 10b, 10c)

One alternative corridor segment was considered but is not proposed for detailed analysis (**Figure 4-12**). This corridor segment was designed to fully follow the existing transmission line, which runs adjacent to the Minidoka Internment National Monument. This alternative corridor segment diverges from the proposed corridor at mile 11 of the proposed corridor, northwest of

Eden, and generally parallels 1 to 2 miles east of the corresponding segment of proposed corridor and just east of the North Side Main Canal. The existing line is immediately adjacent to the east boundary of the National Monument such that any new transmission line on the west side and within the corridor would have to cross the national monument.

Advantages of this alternative corridor segment include (**Table 4-21**):

- Follows an existing transmission line for 8.7 miles more than the corresponding proposed corridor segment;
- Similar to the proposed corridor segment in this portion of the segment, this corridor has no BLM/VRM visual resource concerns; and
- Similar to the proposed corridor segment in this portion of the segment, this corridor has no biological resource concerns.

Disadvantages of this alternative corridor segment include (**Table 4-21**):

- Would cross the within the National Monument;
- Is 1.2 miles longer than the proposed corridor segment;
- Is within the WWEC or projected WWEC for 6.9 miles less compared to the proposed corridor segment; and
- Crosses 0.5 miles more irrigated agriculture than the proposed corridor segment.

This corridor segment is not proposed for detailed analysis because its disadvantages outweigh the advantages.

Table 4-21 presents quantitative comparisons of the characteristics of the set of corridor segments analyzed for the Segment 10 Minidoka Subsegment, shown in **Figure 4-12**.

Table 4-21. Corridor Comparisons, Segment 10, Minidoka Subsegment (8 to 9)

Attributes	Comparison 1 (No Alternatives)	Comparison 2	
	Proposed	Proposed	Considered Not Proposed
	8, 10a, 10c, 9	10a, 10c	10a, 10b, 10c
	Corridor Reference Points*		
Surface Ownership (miles)			
BLM	12.8	3.4	3.4
USFS	0	0	0
State	0	0	0
Private	20.1	4.1	5.3
Total Length	32.9	7.5	8.7
Corridors (miles)			
Within WWEC (Federal)	11.1	3.4	0.6
Within Projected WWEC (Non-Federal)	19.5	4.1	0
Parallel to WWEC and Projected WWEC (Federal and Non-Federal)	0	0	0
Total WWEC	31.06	7.5	0.6
Parallel Existing Transmission Lines	25.2	0	8.7
Environmental Resources (miles)			
Irrigated Agriculture	14.4	2.3	2.8
Scenic Highway	4.2	0	0
Historic Trail Buffer	1.1	0	0
Sage Grouse Lek 0.65-mile Buffer	2.0	0	0

*Depicted on **Figure 4-12**

4.2.11.2 Summary of Segment 10 Corridors

Description of Proposed Corridor

Segment 10 will consist of a single-circuit 500kV transmission line carried on steel lattice structures, extending from the existing Midpoint Substation near Jerome, Idaho, south to the new Cedar Hill Substation southeast of Twin Falls, Idaho (Idaho Power Company and Rocky Mountain Power 2008).

This 32.7-mile long proposed corridor exits the Midpoint Substation in a southeast direction for approximately 10.1 miles. At mile 13.5, it turns south crossing the North Side Main Canal, and angles southeast again before turning south again at mile 16.0. The corridor continues south across Goose Lake west of the community of Eden, and then crosses I-84, the Snake River, the Jerome County/Twin Falls County line, and US 30 before entering the proposed Cedar Hill Substation at mile 32.7.

Conformance with the WWEC and Other Designated ROW Corridors

The proposed corridor is within the WWEC or projected WWEC for 30.6 miles out of a total corridor length of 32.7 miles. The only instance in which it does not follow the WWEC is where WWEC mapping is absent. No other ROW corridors are designated in this area.

Mountain Home

MOUNTAIN HOME AFB

FOUR RIVERS BLM FIELD OFFICE

BRUNEAU DUNES SP

SAYLOR CREEK AIR FORCE RANGE

GOODING COUNTY

JARBIDGE BLM FIELD OFFICE

TWIN FALLS COUNTY

SHOSHONE BLM FIELD OFFICE

CRATERS OF THE MOON NATIONAL MONUMENT

UPPER SNAKE BLM FIELD OFFICE

JEROME

MINIDOKA COUNTY

MINIDOKA Nwr

CASSIA COUNTY

BURLEY BLM FIELD OFFICE

BURLEY USFS RANGER DISTRICT

SAWTOOTH NATIONAL FOREST

TWIN FALLS USFS RANGER DISTRICT

BURLEY USFS RD

POCATELLO BLM FIELD OFFICE

CITY OF ROCKS NATIONAL RESERVE

Midpoint

Borah

Twin Falls

Cedar Hill

MINIDOKA

SC 500kV

10a

10b

10c

Land Status

- Bureau of Land Management
- Bureau of Reclamation
- Department of Energy
- Indian Reservation
- Department of Defense
- US Fish and Wildlife
- State Lands
- US Forest Service
- National Park Service

0 10 Miles

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

IDAHO POWER
An IDACORP Company

Revised 09-06-08

Project Features

- Approximate Substation Location
- Draft West-Wide Energy Corridor
- NAME Corridor Subsegment
- 2a Subsegment Reference Point
- 20 Mile Marker

Project Routes

- Proposed
- Feasible Alternative
- Considered, Not Proposed
- Other Segment
- SC Single Circuit

Administrative

- City Town
- County Boundary
- Public Land Survey System
- BLM Field Office Boundary
- USFS District Boundary

Transportation

- Interstate
- Highway
- Major Road
- Minor Road

Gateway West
Transmission Line Project
Idaho, Wyoming

Segment 10

Figure 4 - 12

5.0 TRANSMISSION LINE CORRIDOR SUMMARY

Based on the analyses presented in this document, each of the corridors considered for the Project was placed into one of three categories:

1. Proposed Corridor (Red) – The Companies' proposed corridor;
2. Feasible Alternative Corridor (Green)– Alternative that is feasible but not preferred; or
3. Alternative Corridor Considered, but Not Proposed (Purple)– Alternative considered but not proposed for detailed analysis because it presents no environmental advantages or has substantial constraints.

Table 5-1 presents a comprehensive list of the corridor determinations for the Project.

Table 5-1. Comprehensive Summary of Project Corridors

Subsegment	Figure	Corridor Reference Points	Determination
Segment 1 E – Windstar to Aeolus			
Thunder Basin	4-1	1, 1Eb	**Proposed**
		1, 1Ea, 1Eb	**Considered Not Proposed**
Medicine Bow	4-1	1Eb, 1Ec, 2	**Proposed**
		1Eb, 2	**Considered Not Proposed**
Segment 1 W – Windstar to Aeolus			
Shirley Basin	4-2	1, 1W, 2 (3 total corridors)	**Proposed**
		1, 2 (3 total corridors)	**Considered Not Proposed**
Segment 2 – Aeolus to Creston			
Seven Mile	4-3	2, 2a, 2c	**Proposed**
		2, 2b, 2c	**Considered Not Proposed**
Rawlins	4-3	2c, 2d, 2e, 2f, 2h, 2i, 3	**Proposed**
		2d, 2f	**Feasible Alternative**
		2h, 2g, 2i	**Considered Not Proposed**
Segment 3 – Creston to Bridger			
Tipton	4-4	3, 3a, 4	**Proposed**
		4, 3c	**Proposed**
		4, 4d, 3c	**Proposed**
		3, 3b, 4	**Considered Not Proposed**
Segment 4 – Bridger to Populus			
Rock Springs	4-5	4, 4a, 4b, 4f, 4e	**Proposed**
		4, 4a, 4d, 4e	**Considered Not Proposed**
Kemmerer	4-5	4b, 4f, 4e, 4f.2, 4f.3, 4j, 4k	**Proposed**
		4b, 4b.1, 4b.4, 4b.5, 4b.6, 4b.8, 4b.12, 4b.13, 4j, 4k	**Feasible Alternative**
		4b, 4f, 4e, 4f.2, 4g.1, 4g, 4j, 4k	**Feasible Alternative**
		4b, 4b.1, 4b.2, 4b.3, 4b.5, 4b.6, 4b.7, 4b.13, 4j, 4k	**Feasible Alternative**
		4b, 4f, 4c, 4g,4j,4k	**Considered Not Proposed**
Montpelier	4-6	4k, 4m, 4n	**Proposed**
		4k, 4l, 4n	**Considered Not Proposed**
Cache	4-6	4n, 4o, 4p	**Proposed**
		4n, 4p	**Considered Not Proposed**
Populus	4-6	4p, 5	**Proposed**
		4p, 4q, 5	**Considered Not Proposed**
Segment 5 – Populus to Borah			
Deep Creek	4-7	5, 5a, 5b, 5d, 5e, 6	**Proposed**
		5, 5c, 5d	**Feasible Alternative**
		5, 5d	**Considered Not Proposed**

Subsegment	Figure	Corridor Reference Points	Determination
		5b, 5e	Considered Not Proposed
		5a, 6	Considered Not Proposed
Segment 6 – Borah to Midpoint			
Craters	4-8	6, 8	Proposed
Segment 7 – Populus to Cedar Hill			
Deep Creek	4-9	5, 7a, 7c, 7d	Proposed
		7a, 7b, 7d	Feasible Alternative
		5, 7b, 7d	Considered Not Proposed
		5, 7a, 7a.1, 7b, 7d	Considered Not Proposed
Burley	4-9	7d, 7e, 7g, 7h, 7j, 7k, 7l, 7m, 7t, 7s,9	Proposed
		7e, 7f, 7g	Feasible Alternative
		7e, 7u, 7g	Feasible Alternative
		7j, 7l	Feasible Alternative
		7g, 7i	Considered Not Proposed
		7h, 7n, 7s	Considered Not Proposed
		7m, 7p, 7o, 7q, 7t, 7s	Considered Not Proposed
		7m, 7p, 7q, 7t, 7s	Considered Not Proposed
		5, 7r, 7q, 7t, 7s	Considered Not Proposed
		7g, 7i, 9g, 9h	Considered Not Proposed
Segment 8 – Midpoint to Hemingway			
North Snake River	4-10	8, 8a, 8b, 8c, 8c.1, 8o, 8g	Proposed
		8, 8c.1	Feasible Alternative
		8, 8c, 8c.1	Considered Not Proposed
		8, 8a, 8c, 8c.1	Considered Not Proposed
		8c.1, 8d, 8e, 8f, 8o	Considered Not Proposed
		8c, 8d, 8e, 8f, 8o	Considered Not Proposed
		8b, 8e, 8f, 8o	Considered Not Proposed
		8b,8f,8o	Considered Not Proposed
Treasure Valley	4-10	8g, 8h, 8j, 8k, 8l, 8m, 8n, 8p, 11	Proposed
		8g, 11	Feasible Alternative
		8h, 8i, 8j	Feasible Alternative
		8j, 8l	Feasible Alternative
		8l, 8n	Feasible Alternative
		8n, 11	Feasible Alternative
Segment 9 – Cedar Hill to Hemingway			
Magic Valley	4-11	9, 9a, 9b, 9c, 9f, 9h	Proposed
		9c, 9d, 9e, 9g, 9h	Feasible Alternative
		9, 9e, 9f,9h	Considered Not Proposed
Saylor Creek	4-11	9h, 9i, 9k, 9l, 9m	Proposed
		9i, 9j, 9l	Considered Not Proposed
		9b, 9m	Considered Not Proposed
Owyhee	4-11	9m, 11	Proposed
Segment 10 – Cedar Hill to Midpoint			
Minidoka	4-12	8, 10a, 10c, 9	Proposed
		10a, 10b, 10c	Considered Not Proposed

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