

**U.S. Department of the Interior  
Bureau of Land Management**

**ENVIRONMENTAL ASSESSMENT  
DOI-BLM-WY-100-2012-86-EA**

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**Anticline Electrification Project Phase I**

**6<sup>th</sup> PM, T. 29, 30 & 31 N., R. 107, 108 & 109 W., Secs. Various  
Sublette County, Wyoming**

**As Applied for by PacifiCorp dba Rocky Mountain Power**

**Wyoming High Desert District  
Pinedale Field Office  
PO Box 768  
Pinedale, Wyoming 82941**



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## 1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared to analyze and disclose the site specific environmental consequences of the Rocky Mountain Power's Anticline Electrification Phase I project, which includes a total of 10 rights-of-way (ROWs) applications for a 23.5-mile-long 25 kV distribution line network, a 10-mile 230 kV transmission line route amendment to WYW-172153, a 5-mile 69 kV transmission line and a 12-acre substation, for individual case file numbers see Appendix 1. The distribution network would tap from the existing Paradise 25 kV line located on private land in T. 31 N., R. 109 W., Sec. 10, north of the New Fork River, and continue southwest through the Pinedale Anticline Project Area (PAPA) servicing customers along the way to a terminus point in DA-5 in T. 29 N., R. 107 W., Sec. 4, south of Highway 351 and west of Highway 191, located on public land administered by the US Bureau of Land Management (BLM), see Figure 1.

The 230 kV transmission line amendment would diverge from the authorized route under ROW WYW-172153 near the intersection of Highway 351 and Jonah North Road in T. 30 N., R. 108 W., Sec. 4. The 230 kV amendment would parallel the proposed 25 kV distribution route south and east to Highway 191 in T. 30 N., R. 107 W., Sec. 33, see Figures 2 through 6.

The 69 kV transmission line would start at a proposed 12-acre substation south of Highway 351 in T. 30 N., R. 108 W., Sec. 4 and continue north paralleling the 25 kV distribution line ending at Boulder South Road in T. 31 N., R. 109 W., Sec. 14, see Figures 2 through 6.

The distribution and transmission line network would provide electricity from the Paradise substation to multiple customers located in the Pinedale Anticline Oil and Gas Exploration and Development Area.

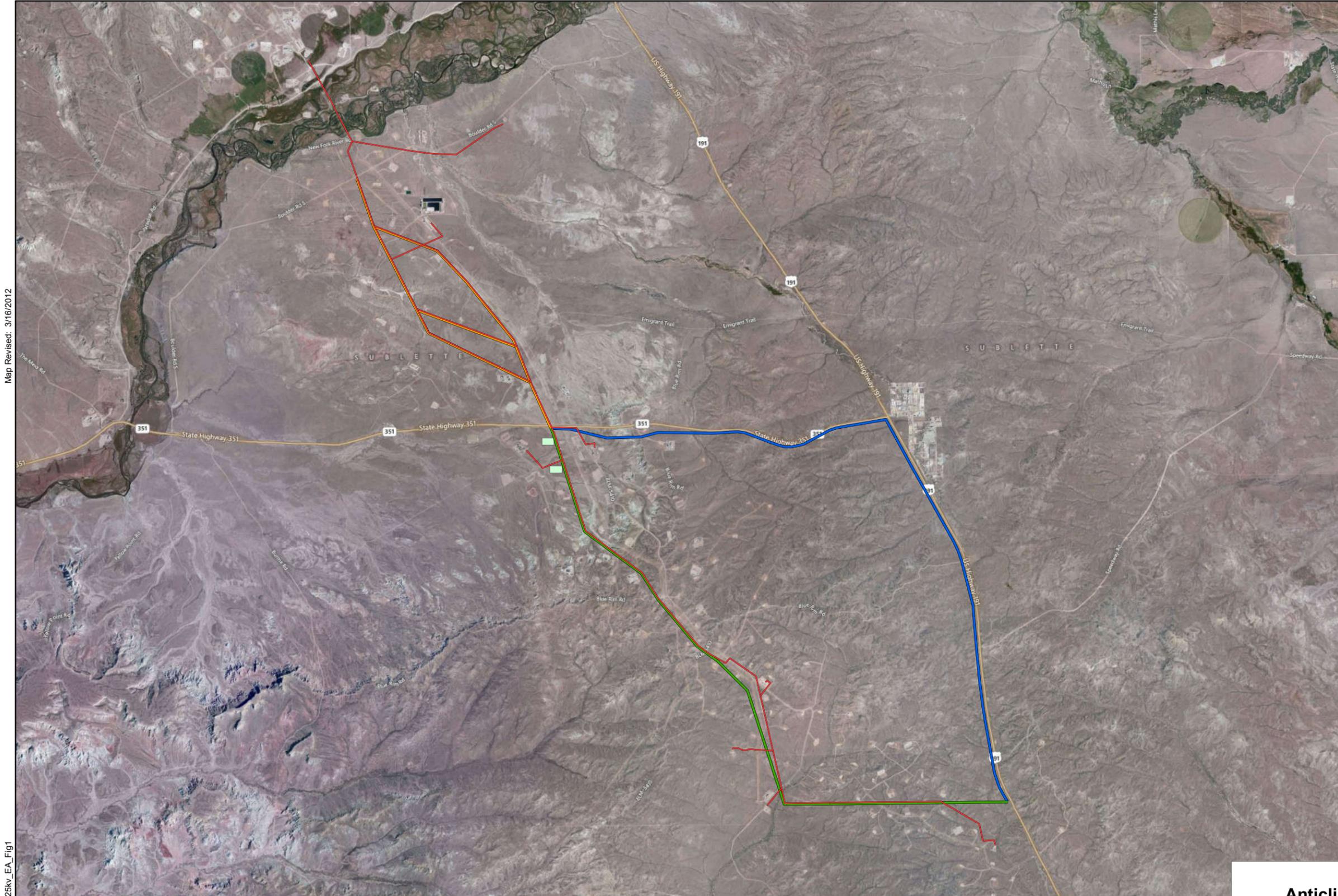
Rocky Mountain Power is requesting ROWs for the distribution and transmission lines for a 30 year term with options to renew for as long as needed. Construction is expected to begin in August 2012. Completion and full utilization of the distribution lines is expected to occur in February of 2013. The BLM Pinedale Field Office (PFO) has prepared this Environmental Assessment (EA) to evaluate the impacts associated with construction, use, reclamation, and maintenance of the distribution and transmission lines.

**Location of Proposed Action:** The proposed project is located on public, state and private lands, between 6th PM, T. 29 N., R. 107 W., Section 4 and T. 31 N., R. 109 W., Section 10, Sublette County, Wyoming.

The proposed 25 kV distribution lines would be constructed in 2012, the 230 kV transmission line would likely be constructed in 2013 or later and the 69 kV transmission line and substation would likely be constructed in 2014 or later. Construction of the 25 kV distribution lines would take up to six months to complete. In order to accomplish construction in one continuous effort, an exception to the pronghorn winter range restriction would be required. This EA has analyzed the potential impacts of allowing an exception to the pronghorn winter stipulation.

**Legend**

- Anticline 25 kV Distribution
- Anticline 69 kV Transmission
- Proposed 230 kV Reroute
- Authorized 230 kV Route
- Proposed Anticline Substation



Map Revised: 3/16/2012

Office: TACO Name: Anticline25kv\_EA\_Fig1

Reference: Imagery and roads layers obtained from Bing Maps.

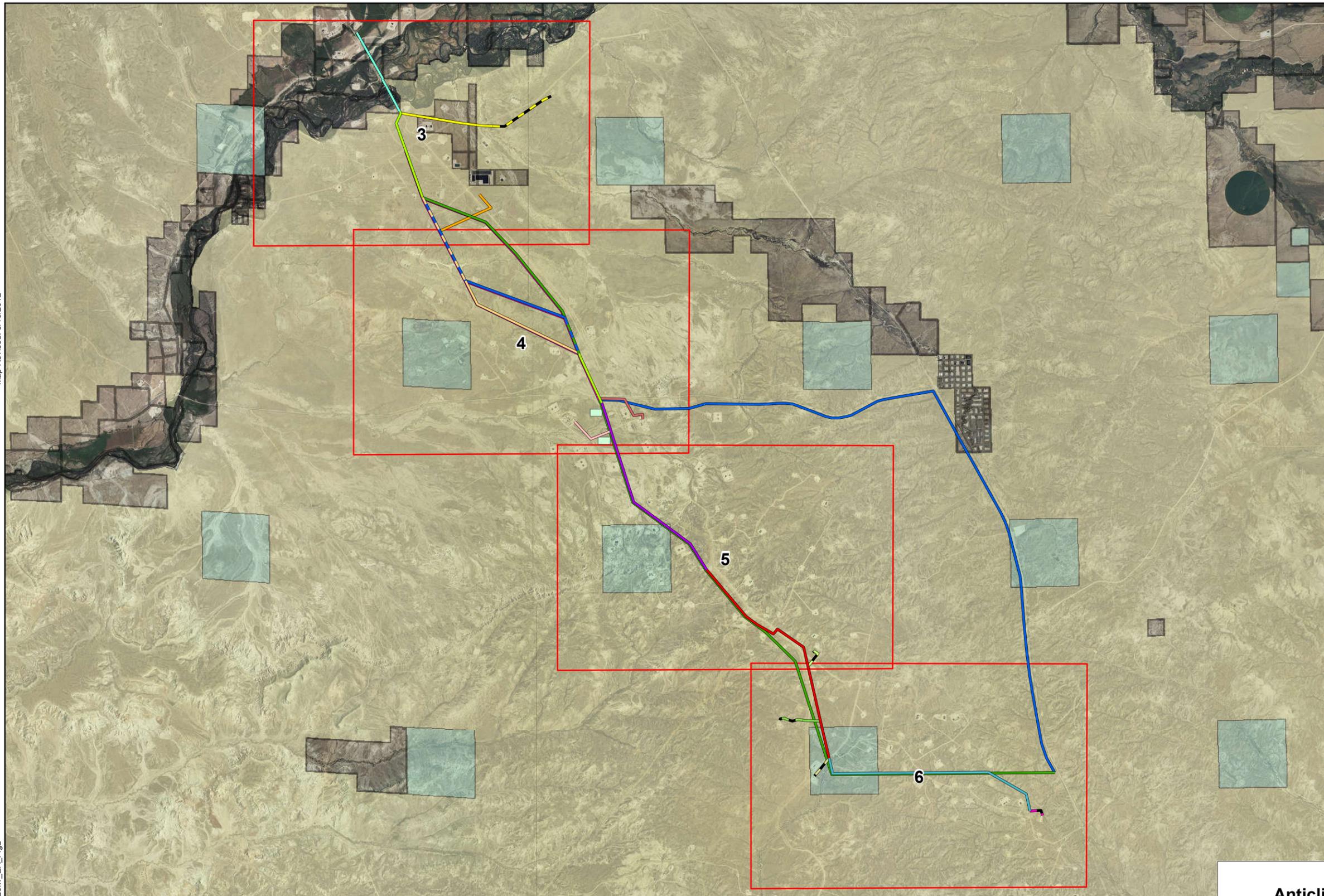
Notes:  
 1. The locations of all features shown are approximate.  
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.



<b>Vicinity Map</b>	
<b>Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
	<b>Figure 1</b>

Map Revised: 3/16/2012

Office: TACO Name: Anticline25kv\_EA\_Fig2



- Legend**
- Segment 1 - New Fork Crossing
  - Segment 2 - Middle Crest
  - Segment 2A - Middle Crest
  - Segment 2AB - Middle Crest
  - Segment 2B - Middle Crest
  - Segment 2BC - Middle Crest
  - Segment 2C - Middle Crest
  - Segment 3 - Warbonnet
  - Segment 4 - Falcon
  - Segment 11 - Rainbow to Antelope
  - Segment 5 - Boulder 8 - Overhead (OH)
  - Segment 5 - Boulder 8 - Underground (UG)
  - Segment 6 - Ultra CGF2 (OH)
  - Segment 6 - Ultra CGF2 (UG)
  - Segment 7 - Shell Central LPF
  - Segment 8 - Ultra CGF3 (OH)
  - Segment 8 - Ultra CGF3 (UG)
  - Segment 9 - Ultra CGF4 (OH)
  - Segment 9 - Ultra CGF4 (UG)
  - Segment 10 - Ultra SWD (OH)
  - Segment 10 - Ultra SWD (UG)
  - Segment 12 - Plains (UG)
  - Segment 13 - New Field (UG)
  - Anticline 69 kV Transmission
  - Proposed 230 kV Reroute
  - Authorized 230 kV Route
  - Proposed Anticline Substation
  - 8 Detail Figures
  - Private Land
  - WYOMING
  - USA - BLM

Reference: 2009 NAIP Imagery from US Department of Agriculture.

Notes:

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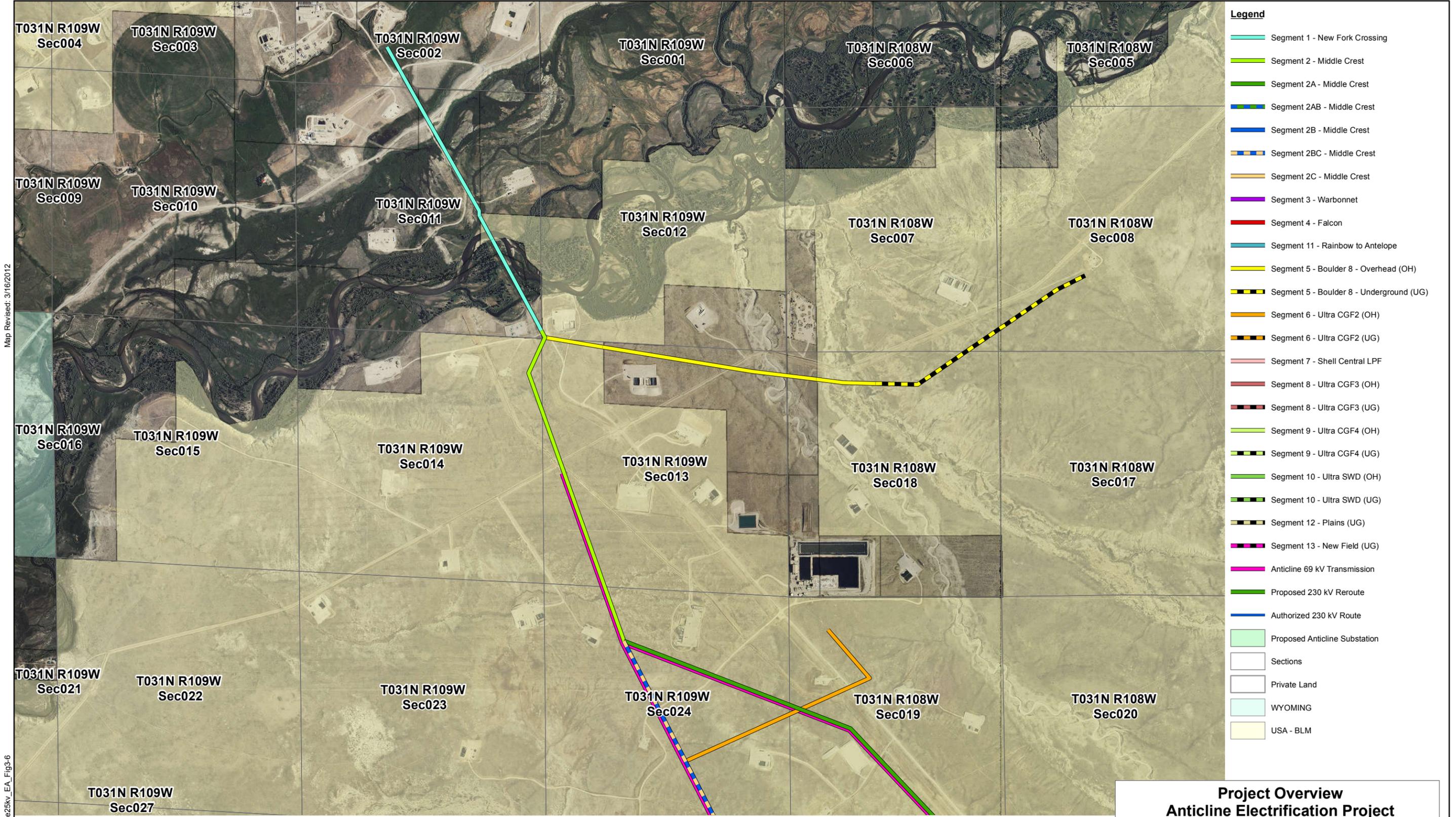


**Project Overview**  
**Anticline Electrification Project**

Rocky Mountain Power  
 Sublette County, Wyoming



**Figure 2**



Map Revised: 3/16/2012

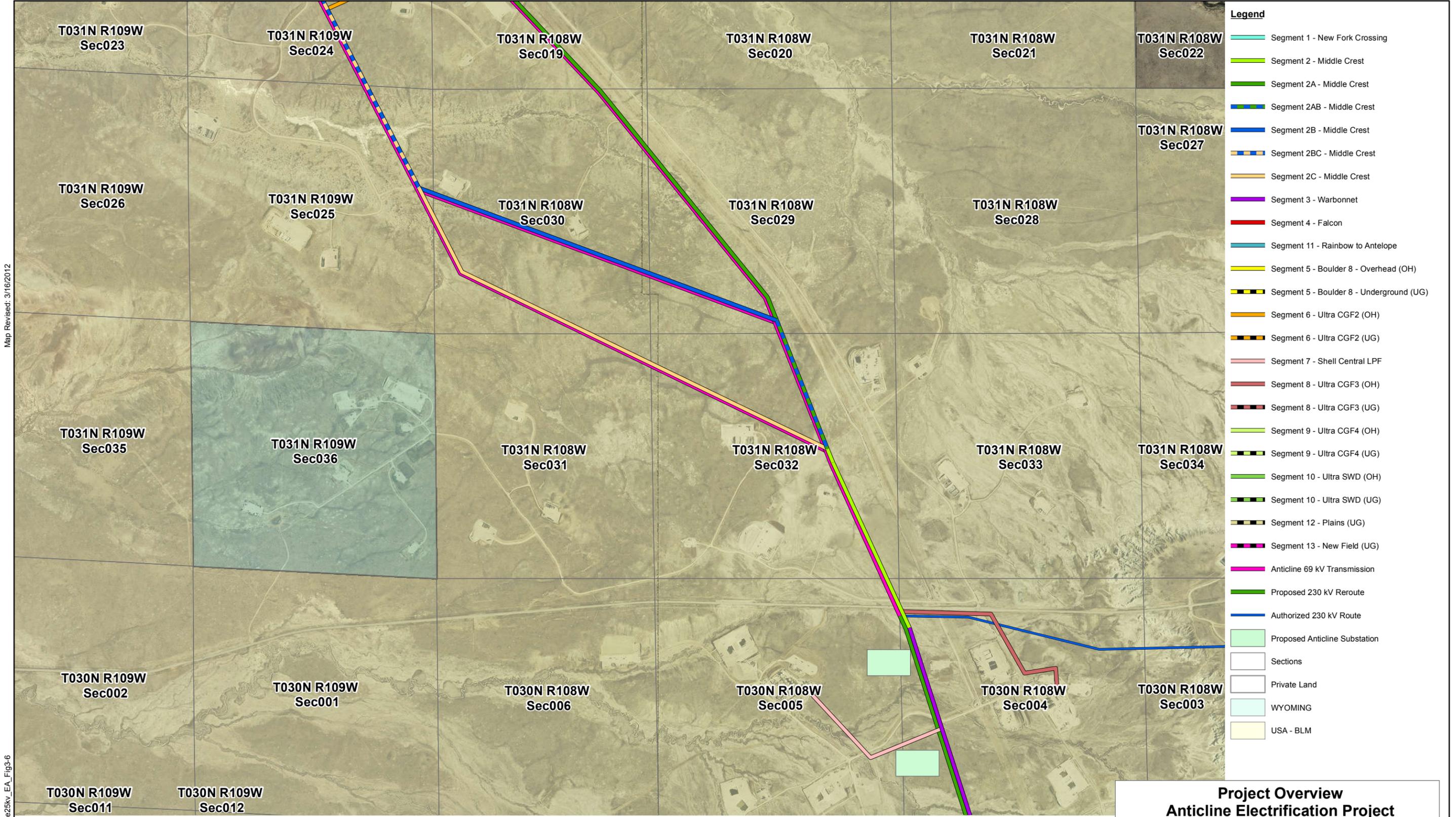
Office: TACO Name: Anticline25kv\_EA\_Fig3-6

Reference: 2009 NAIP Imagery from US Department of Agriculture.

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<b>Project Overview</b> <b>Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
	<b>Figure 3</b>



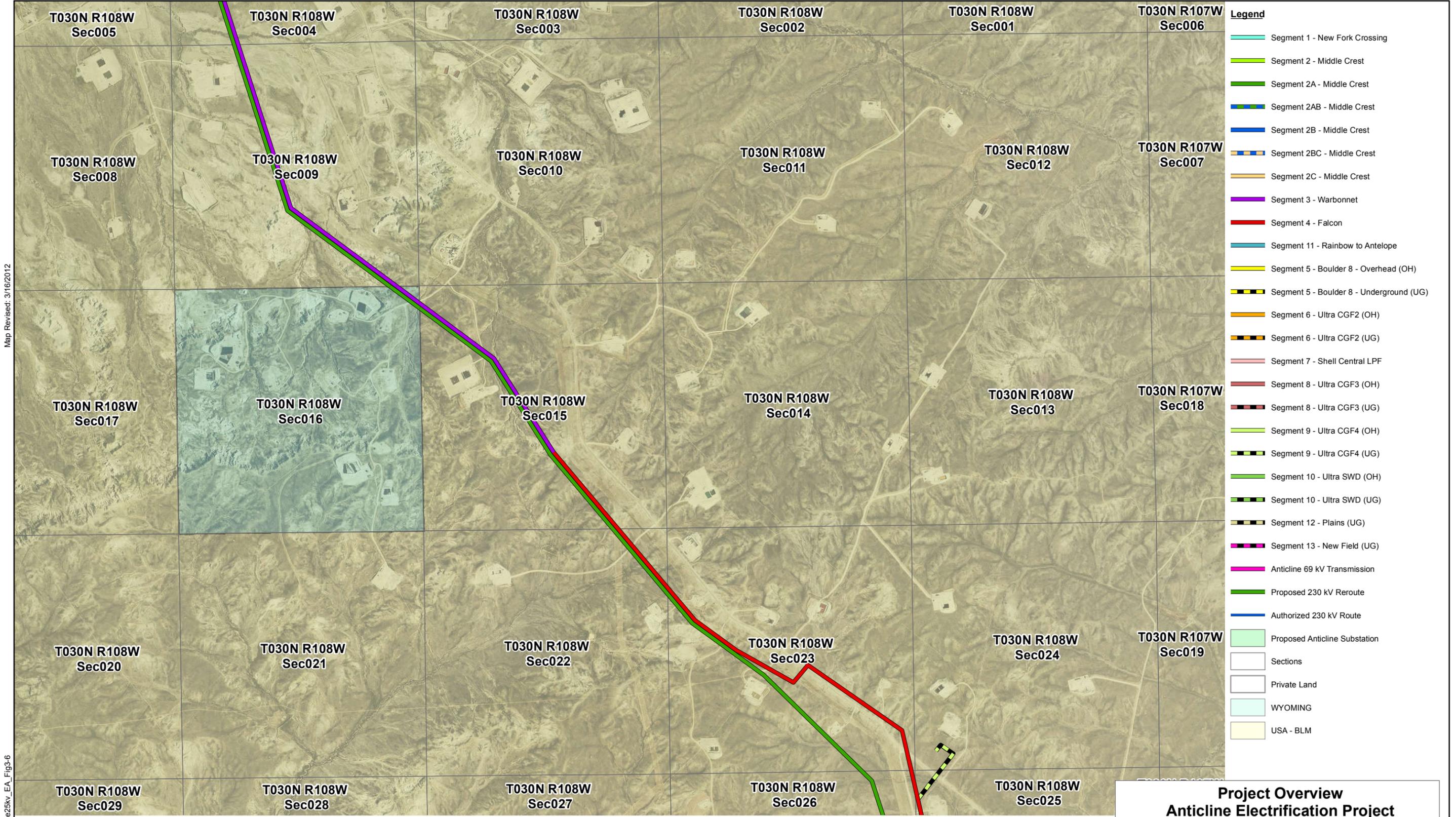
Map Revised: 3/16/2012

Office: TACO Name: Anticline25kv\_EA\_Fig3-6

Reference: 2009 NAIP Imagery from US Department of Agriculture.

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<b>Project Overview</b> <b>Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
	<b>Figure 4</b>



Map Revised: 3/16/2012

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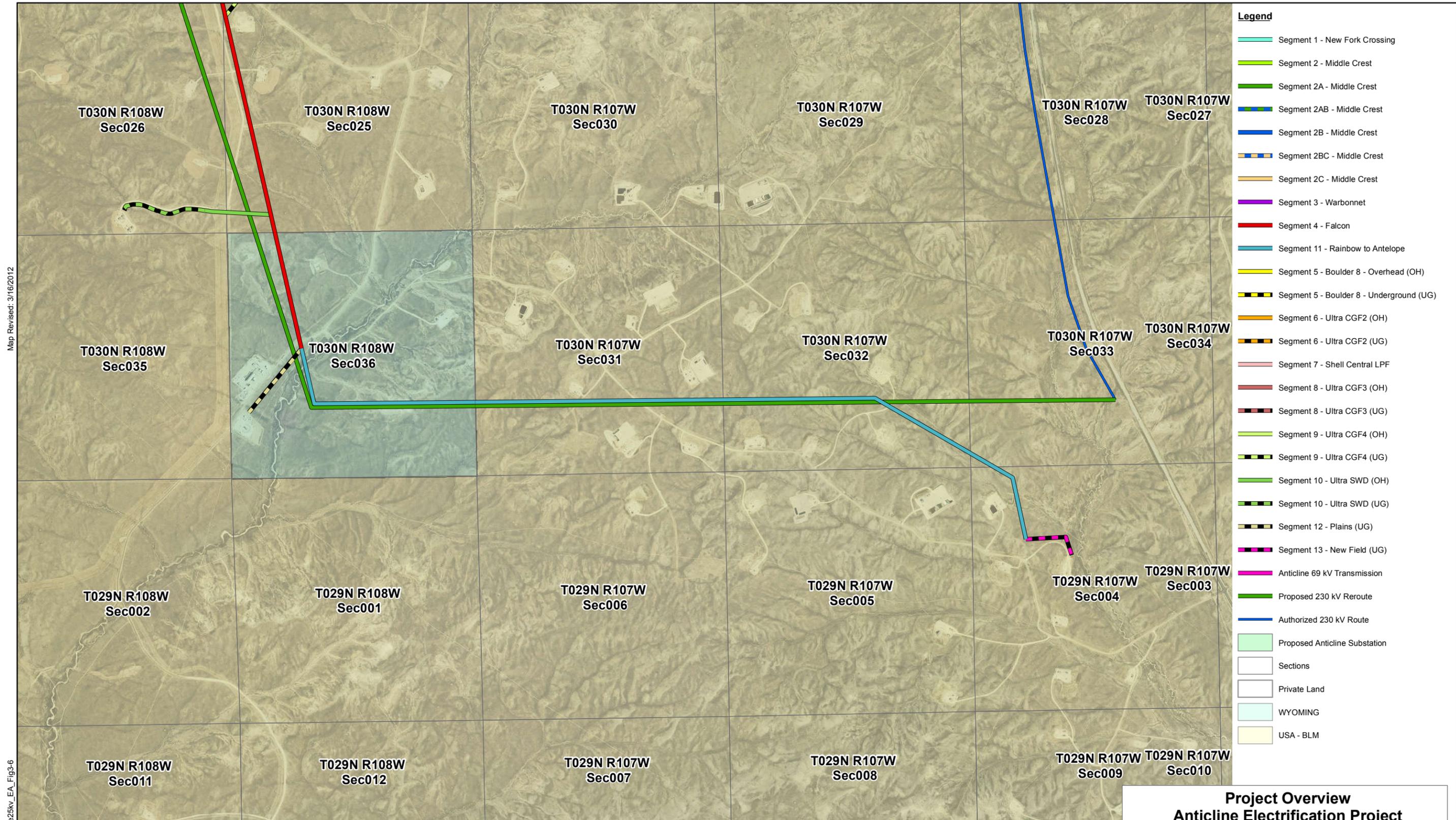


**Project Overview**  
**Anticline Electrification Project**

Rocky Mountain Power  
 Sublette County, Wyoming

**GEOENGINEERS**

**Figure 5**



Map Revised: 3/16/2012

Office: TACO Name: Anticline25kv\_EA\_Fig3-6

Reference: 2009 NAIP Imagery from US Department of Agriculture.



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**Project Overview**  
**Anticline Electrification Project**

Rocky Mountain Power  
 Sublette County, Wyoming

**GEOENGINEERS**

**Figure 6**

## **1.1 BACKGROUND**

The distribution and transmission lines would be located within the Pinedale Anticline Oil and Gas Exploration and Development Area. The proposed power line projects would add infrastructure to provide electricity to the Pinedale Anticline area, reducing dependence on internal combustion generators. The distribution line would parallel the backbone of the Pinedale Anticline Oil and Gas Field servicing customers along this route.

The routes proposed in this document were selected through a ten month process of identifying opportunities and constraints within the project area. By following the backbone of the Pinedale Anticline, the project would be able to serve customer requests with the shortest lines possible while maintaining the line as close as possible to existing disturbances, see Figure 7. The primary constraints identified during the planning process included wildlife No Surface Occupancy (NSO) zones for raptors and greater sage-grouse and existing oil and gas infrastructure. Another project constraint is the need to supply power to eight existing oil and gas facilities that have requested service.

The 230 kV transmission line right-of-way, to connect the Paradise and proposed Jonah substations, has been authorized (WYW-172153). The amendment to the 230 kV transmission line would follow the southern portion of the 25 kV distribution route from Highway 351 to Highway 191. Otherwise, the 230 kV transmission line would utilize the route authorized under WYW-172153 to connect the Paradise and Jonah substations.

The 69 kV transmission line would begin at a proposed substation just south of Highway 351 and west of the Jonah North Road and proceed north, parallel to the 25 kV distribution line to the Boulder South Road.

The Proposed Action would allow local oil and gas operators to power equipment with electricity instead of internal combustion generators and motors. Sublette County currently experiences high levels of ozone accumulation which trigger ozone warnings for the Upper Green River Basin. By providing electric power for local oil and gas operations this project would reduce the amount of ozone forming chemicals that enter the local environment and improve air quality in the region.

Additionally, the demand for electricity has increased dramatically in Sublette County, Wyoming during the last several years due to an increase in natural gas and oil production and transportation and secondary support services. Rocky Mountain Power has received requests from multiple oil and gas companies for 25 kV distribution and 69 and 230 kV transmission service.

## **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION, DECISION TO BE MADE**

### **1.2.1 Purpose of Federal Action**

The purpose of the Federal Action is respond to a request to allow for distribution and transmission line across BLM administered public lands through the Pinedale Anticline Oil and Gas Exploration and Development Area.

### **1.2.2 Need for Federal Action**

The need is established by the BLM's responsibility under Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761) and 43 CFR 2800 regulations to allow access across public lands for a ROW to provide electrical service.

### **1.2.3 Decision to be Made**

The decision to be made by the BLM, based on the analysis in this EA, is whether or not to authorize the Proposed Action, No Action Alternative or select a combination of Alternative Actions and/or Route Options. The decision associated with this EA would not constitute final approval for the right-of-way grant and temporary use permit associated with Rocky Mountain Power's proposal. The EA does, however, provide the BLM with analysis from which the final decisions would be made.

## **1.3 RELATIONSHIP TO STATUTES, REGULATIONS, PLANS OR OTHER ENVIRONMENTAL ANALYSES**

The proposed project would comply with all applicable federal, state, and local laws, plans, and permits required for this type of activity. This proposed action is subject to the following land use plan and references analyses contained in the following SEIS:

- Pinedale Resource Management Plan/ Final Environmental Impact Statement/Record of Decision (PRMP/FEIS/ROD), as approved on November 28, 2008. The plan has been reviewed (see PFO RMP page 2-15 and 2-16) and the proposed action as mitigated, conforms to the land use plan terms and conditions as required by 43 CFR 1610.5.
- Record of Decision and Final Supplemental Environmental Impact Statement for the Pinedale Anticline Oil and Gas Exploration and Development Project, as approved on September 12, 2008.

BLM is not the only agency required to issue approvals for Rocky Mountain Power's proposed distribution and transmission line routes. A list of permits, approvals, and authorizing actions necessary to construct, operate, maintain, and abandon the proposed distribution line is provided in the following Table:

**Table 1-1. Federal, State, and Local Permits, Approvals, and Authorizing Actions Necessary for Construction, Operation, Maintenance, and Abandonment of Rocky Mountain Powers Proposed Action**

Issuing Agency	Nature of Permit/Approval	Authority
U.S. Department of the Interior Bureau of Land Management (BLM)	ROW grants and temporary use permits on federal lands	Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761); Title 43 Code of Federal Regulations (CFR) 2800
	Antiquities and cultural resource clearances on BLM-managed land	Antiquities Act of 1906 (16 USC Section 431433); Archaeological Resources Public Protection Act of 1979 (16 USC Sections 470aa-470ll); 43 CFR 3; National Historic Preservation Act (NHPA) of 1966 and Advisory Council Regulations (36 CFR 800)
	Management of noxious weed species on federal lands	Federal Noxious Weed Act of 1974 (7 USC 2801–2814, January 3, 1975, as amended 1988 and 1994)
U.S. Army Corps of Engineers	Section 404 permits regarding placement of dredged or fill materials in waters and adjacent wetlands	Section 404 of the Clean Water Act of 1972 (40 CFR 122–123, 230)
U.S. Fish and Wildlife Service	Biological Assessment - coordination, consultation, and impact review on federally listed threatened and endangered species and other federally protected species	Fish and Wildlife Coordination Act (16 USC Sec. 661 et seq.); Section 7 of the Endangered Species Act of 1973, as amended (16 USC et seq.); Bald and Golden Eagle Protection Act, as amended (16 USC 668-668dd); Migratory Bird Treaty Act (16 USC 704)
U.S. Environmental Protection Agency	Spill prevention, control, and countermeasure plans	40 CFR 112
	Regulation of hazardous waste treatment, storage, and/or disposal	Resource Conservation and Recovery Act (42 USC 6901)
Wyoming Department of Environmental Quality (WDEQ) - Water Quality Division	National Pollutant Discharge Elimination System (NPDES) permits for discharging waste water and storm water runoff	Wyoming Environmental Quality Act (Wyoming Statutes [W.S.] 35-11-301 through 35-11-311); WDEQ Rules and Regulations, Chapter 18; Wyoming Environmental Quality Act (W.S. 35-11-301 through 35-11-311); Section 405 of the Clean Water Act (40 CFR 122124)
Wyoming Department of Transportation	Permits for oversize, over length, and overweight loads	Chapters 17 and 20 of the Wyoming Highway Department Rules and Regulations
	Utility and access permits for highway power line crossing and highway access construction	WYDOT Rules and Regulations, Utility Accommodations Section; Chapter 6: Overhead Power and Communication Facilities
Wyoming Department of Employment - Workers Safety and Compensation Division	Rules and regulations governing the health and safety of employees and employers of oil and gas drilling and servicing	W.S. 27-11-105
Wyoming State Historic Preservation Office	Cultural resource protection, programmatic agreements, consultation	Section 106 of the NHPA and Advisory Council Regulations (36 CFR 800)

Issuing Agency	Nature of Permit/Approval	Authority
Wyoming State Lands and Investments	ROW and easements on state lands	W.S. 36-9-118
Sublette County Planning and Zoning Department	Power line crossing of County Road ROW	Road Standards for Sublette County

## 1.4 SCOPING AND PUBLIC INVOLVEMENT

An internal planning and scoping meeting was held January 5, 2012, at the BLM PFO with attendees including PFO Inter-disciplinary (ID) team members and Rocky Mountain Power staff/contractors. The key scoping issue identified during the meeting was the use of underground lines where possible and overhead lines where necessary. Other issues identified during the meeting included the need for resource assessment requirements (biological/cultural/paleontological), the need for perch minimizing design, route options and the project timeline.

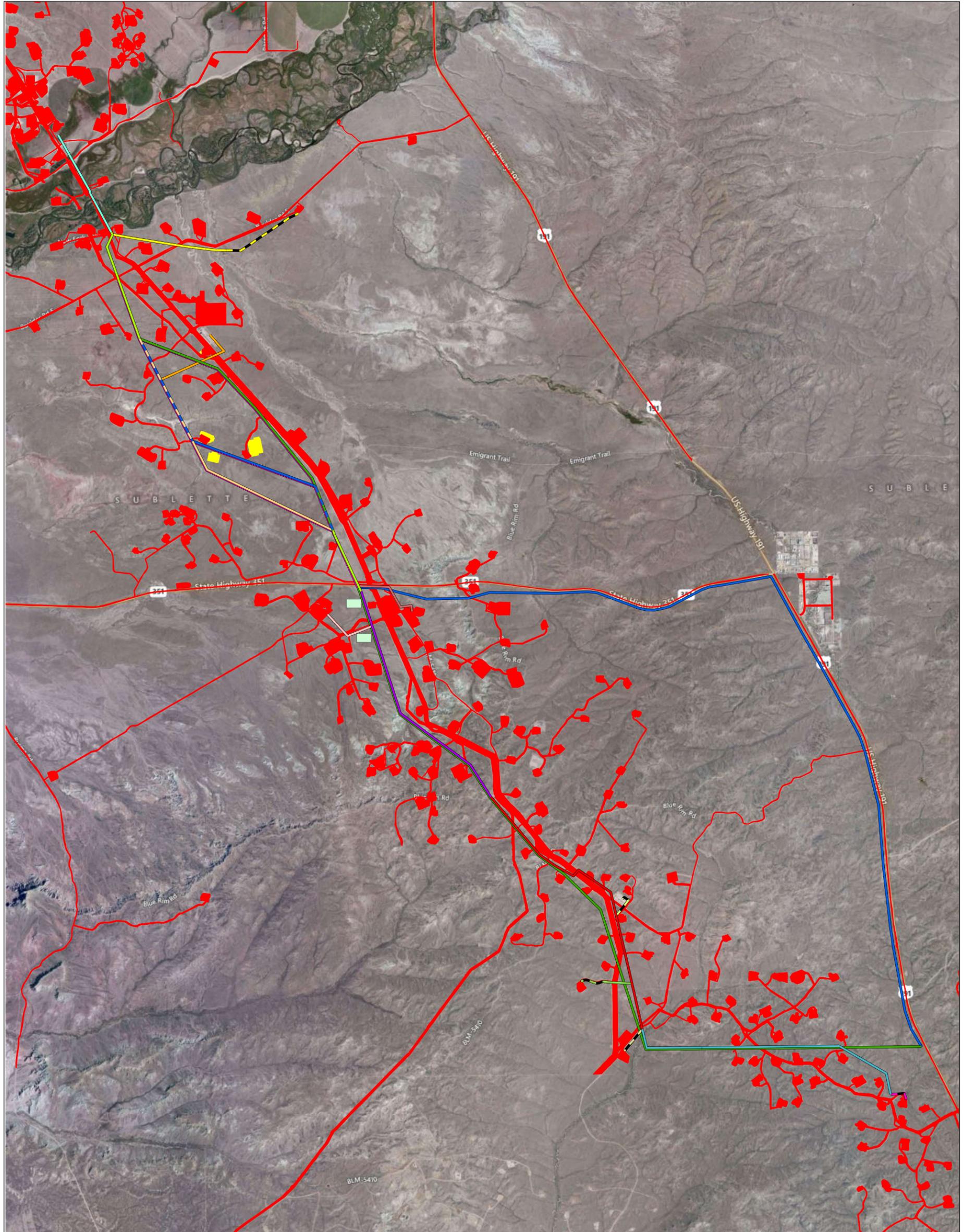
External scoping of the Proposed Action has involved the notification of other agencies, organizations, tribes, local governments and the public via email, the BLM website ([www.blm.gov/wy/st/en.html](http://www.blm.gov/wy/st/en.html)), and notices in the local newspapers. The public has been provided the opportunity to submit comments and recommendations by mail, telephone, email, or in person. Public scoping for the Proposed Action began January 6, 2012. An open house public meeting was held on February 1, 2012 at the BLM PFO, at which 24 people signed in. Comments were accepted until February 10, 2012.

BLM received 91 comments from 22 commenters from the general public and local, state and national entities. Comments primarily focused on wildlife and cultural resource concerns including the recommendation to bury as much of the lines as possible. Comments received also requested that additional segments of the 230 kV transmission line be relocated to the 25 kV corridor and that the 230 kV line remain entirely within the existing authorized corridor. This document has been prepared with alternatives designed to address these comments.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

According to Title 40 Code of Federal Regulations (CFR) 1502.14(a), the BLM is required to define issues and evaluate all reasonable alternatives. The BLM evaluated four alternatives in this EA: the No Action Alternative (Section 2.1) and the Proposed Action (Section 2.2) and Alternative III (Section 2.3) and Alternative IV (Section 2.4).

The proposed routes evaluated in this document were selected through a ten month process of identifying opportunities and constraints within the project area. By following the backbone of the Pinedale Anticline, the project would be able to serve customer requests with the shortest lines possible while maintaining the lines as close as possible to existing disturbances, see Figure 7. The primary constraints identified during the planning process included wildlife NSO zones for raptors and greater sage-grouse and existing oil and gas infrastructure. Another project constraint is the need to supply power to eight existing oil and gas facilities that have requested service.



**Legend**

- |                                    |                                 |                                  |
|------------------------------------|---------------------------------|----------------------------------|
| — Segment 1 - New Fork Crossing    | — Segment 5 - Boulder 8 (OH)    | — Segment 10 - Ultra SWD (OH)    |
| — Segment 2 - Middle Crest         | — Segment 5 - Boulder 8 (UG)    | — Segment 10 - Ultra SWD (UG)    |
| — Segment 2A - Middle Crest        | — Segment 6 - Ultra CGF2 (OH)   | — Segment 12 - Plains (UG)       |
| — Segment 2AB - Middle Crest       | — Segment 6 - Ultra CGF2 (UG)   | — Segment 13 - New Field (UG)    |
| — Segment 2B - Middle Crest        | — Segment 7 - Shell Central LPF | — Anticline 69 kV Transmission   |
| — Segment 2BC - Middle Crest       | — Segment 8 - Ultra CGF3 (OH)   | — Proposed 230 kV Reroute        |
| — Segment 2C - Middle Crest        | — Segment 8 - Ultra CGF3 (UG)   | — Authorized 230 kV Route        |
| — Segment 3 - Warbonnet            | — Segment 9 - Ultra CGF4 (OH)   | — Proposed Anticline Substation  |
| — Segment 4 - Falcon               | — Segment 9 - Ultra CGF4 (UG)   | — Pinedale Anticline Disturbance |
| — Segment 11 - Rainbow to Antelope |                                 | — Proposed Disturbance           |

Reference: Imagery and map data from Bing Maps 2012.

**Notes:**

- The locations of all features shown are approximate.
- This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.



<b>Existing Disturbance Map Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
<b>GEOENGINEERS</b> 	<b>Figure 7</b>

## **2.1 ALTERNATIVE I – NO ACTION ALTERNATIVE**

The No Action Alternative is required to be analyzed by the CEQ, 40 CFR 1502.14(d), and applicable BLM implementing regulations. CEQ regulations require the consideration of a No Action Alternative in all EAs.

The No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of environmental effects of the action alternative(s). Under the No Action Alternative, the BLM would reject the proposal as submitted by Rocky Mountain Power in the Proposed Action.

If the No Action Alternative is chosen, the BLM would deny Rocky Mountain Power's authorization to construct the 24.5-mile distribution line and the five-mile 69 kV transmission line. The 230 kV transmission line would remain within the previously permitted corridor. Existing land uses and management within the project area would continue as they currently occur.

## **2.2 ALTERNATIVE II – 25 kV DISTRIBUTION, 230 AND 69 kV TRANSMISSION AND SUBSTATION - PROPOSED ACTION**

Rocky Mountain Power proposes to construct 25 kV distribution lines both overhead and underground; a 69 kV transmission line; a substation for the 69 kV transmission line and a 10-mile amendment to the Paradise 230 kV transmission line. The lines will be built using three configuration types; underground distribution, overhead distribution and overhead transmission. Overhead power line requirements are described in the following section with more detailed voltage rise modeling, a Rocky Mountain Power presentation, and technical descriptions provided in Appendices 3, 4A and 4B, respectively, of this document. A detailed description of construction techniques for the 25 kV distribution backbone is described in the Plan of Development Report included in Appendix 2. For Plan of Development Reports for underground distribution lines and overhead transmission lines please refer to the BLM PFO website.

The distribution lines would be a combination of overhead and underground lines and would include both double-circuit and single-circuit configurations. The transmission lines would be single-circuit overhead lines. Related facilities would include vaults for underground distribution lines and a substation for the 69 kV transmission line. All distribution structures and vaults would be placed within the 40-foot wide permanent ROW, with additional ROW located at the outside of angle structures for down-guys. The substation would be located on a 12-acre pad south of Highway 351.

The proposed 25 kV distribution lines would be constructed in 2012, the 230 kV transmission line would likely be constructed in 2013 or later and the 69 kV transmission line and substation would likely be constructed in 2014 or later. Construction of the 25 kV distribution lines would take up to six months to complete. In order to accomplish construction in one continuous effort, an exception to the pronghorn winter range restriction would be required. This EA has analyzed the potential impacts of allowing an exception to the pronghorn winter stipulation.

### **2.2.1 Overhead Power Line Requirements**

Distribution lines would be buried where possible. Lines designated as backbone power supply would remain overhead in order to maintain voltage and reliability standards as required by Regulation and Rocky Mountain Power. Distribution tap lines would be buried except in locations where the lines are required to cross the designated pipeline corridors. Underground distribution lines would have special operational problems due to capacitance and reduced flexibility of expansion, and maintenance concerns with the amount of underground pipelines in the area. As a utility standard, 69 kV and 230 kV transmission lines are not buried. Buried utility lines are typically 34.5 kV and lower voltages. Only in rare cases, where no other option is available, are transmission lines buried. Those transmission lines that are buried would be at voltages much less than the transmission line voltage proposed for this area.

### **2.2.2 25 kV Distribution**

The proposed distribution lines would begin at the Paradise 25 kV distribution line located on private land in T. 31 N., R. 109 W., Sec. 10, north of the New Fork River, southwest to a customer (Newfield) facility in T. 29 N., R. 107 W., Sec. 4, south of Highway 351 and west of Highway 191, located on BLM land. The proposed distribution lines are approximately 124,060 feet (23.5 miles) long, of which approximately 103,336 feet (19.6 miles) is BLM administered land. The permanent ROW across BLM land would consist of approximately 94.9 acres. See Figure 1 for a general location of the project and Figures 2 through 6 for more detailed maps of the project.

Rocky Mountain Power is proposing a 100-foot-wide construction corridor for the distribution lines with additional temporary use areas to facilitate pulling and tensioning sites and access routes. Upon project completion, a permanent 40-foot-wide ROW would be proposed for operational and maintenance purposes. The distribution lines would be fully operational year-round. The temporary use areas would consist of approximately 195.4 acres outside the permanent ROW. The permanent ROW area would consist of approximately 94.9 acres. Total disturbance for the lines consist of approximately 290.3 acres.

The 25 kV distribution line includes three route options in Segment 2 to be assessed in all alternatives. The route options have been identified to the north of Highway 351, to provide options of varying distances from sage grouse leks. Route Option A is 29,273 feet long and remains adjacent to the primary pipeline corridor. Route Option B is 29,846 feet long and continues south beyond Route Option A and turns to the southeast, immediately south of the well pad Boulder 5-30. Route Option C is 29,380 feet long and continues south beyond Route Option B and turns southeast in Township 31 North, Range 108 West, Section 30. Route Option C is the proposed route option. See Figures 3 and 4 for detailed maps of the route options.

### ***General Distribution Line Design***

Overhead distribution structures would consist of wood pole structures spaced between 200 and 300 feet apart and approximately 55 feet in height, depending on topography. The proposed design would have polymer post-mounted insulators on each phase that minimize perching by raptors and maintain a 60-inch (horizontal) and 40-inch (vertical) raptor-safe minimum clearance between any two phases or phase to ground (consistent with the Avian Power Line Interactions Committee recommendations).

### **2.2.3 69 kV Transmission**

The proposed 69 kV transmission line would begin at Highway 351, located on BLM land in T. 31 N., R. 109 W., Sec. 13, and proceed north to Boulder South Road in T. 30 N., R. 108 W., Sec. 4, located on BLM land. The proposed transmission line is approximately 26,236 feet (5.0 miles) long and is located entirely on BLM land. The permanent ROW across BLM land would consist of approximately 36.2 acres. The 69 kV alignment also contains the route options described for the 25 kV alignment. See Figure 1 for a general location of the project and Figures 2 through 6 for more detailed maps of the project.

Rocky Mountain Power is proposing a 150-foot-wide construction corridor for the 69 kV transmission line with temporary use areas to facilitate pulling and tensioning sites and access routes. Upon completion of the project, a permanent 60-foot-wide ROW is proposed for operational and maintenance purposes. The 69 kV transmission line would be fully operational year-round. The temporary use areas would consist of approximately 91.0 acres. The permanent ROW area would consist of approximately 36.2 acres. Total disturbance for the line would consist of approximately 127.2 acres.

#### ***General 69 kV Transmission Line Design***

The 69 kV line structures would be single wood pole structures. The top of the structures would be approximately 60 to 80 feet above ground, depending on terrain and clearance requirements. Structures would be placed directly into the ground. Poles would be spaced approximately 350 feet apart. The proposed design would have polymer post-mounted insulators on each phase that minimize perching by raptors and maintain a 60-inch (horizontal) and 40-inch (vertical) raptor-safe minimum clearance between any two phases or phase to ground (consistent with the Avian Power Line Interactions Committee recommendations).

### **2.2.4 230 kV Transmission**

The proposed 230 kV transmission line amendment would begin at Highway 351, located on BLM land in T. 30 N., R. 108 W., Sec. 4 and continue southeast to Highway 191 in T. 30 N., R. 107 W., Sec. 33, located on BLM land. The proposed transmission line amendment is approximately 52,723 feet (9.99 miles) long, of which approximately 44,455 feet (8.42 miles) is BLM land. The permanent ROW across BLM land would consist of approximately 136.8 acres. See Figure 1 for a general location of the project and Figures 2 through 6 for more detailed maps of the project.

Rocky Mountain Power is proposing a 150-foot-wide construction corridor for the 230 kV transmission line with temporary use areas to facilitate pulling and tensioning sites and access routes. Upon completion of the project, a permanent 125- to 150-foot-wide ROW is proposed for operational and maintenance purposes. The 230 kV transmission line would be fully operational year-round. The temporary use areas would consist of approximately 78.2 acres. The permanent ROW area would consist of approximately 136.8 acres. Total disturbance for the line would consist of approximately 215.0 acres.

### ***General 230 kV Transmission Line Design***

The 230 kV line structures would be wood pole H-frame structures. The top of the wood pole H-frame structures would be approximately 80 to 100 feet above ground, depending on terrain and clearance requirements. Structures would be placed directly into the ground. Poles would be spaced every 600 to 800 feet, on average. The exact spacing and height of each structure will be governed by topography and safety requirements for conductor to ground clearances.

Raptor perch discouragers would be used on H-frame structures to reduce the possibility of increased predation on greater sage-grouse and other sensitive prey species that inhabit the project area. The perch discouragers will be used on the top and bottom cross-arms of the wood pole H-frame structures in areas of suitable sage-grouse, white-tailed prairie dog, and pygmy rabbit habitat, as well as any other areas as defined by the BLM.

### **2.2.5 Anticline Substation**

The proposed Anticline substation would be located at one of two proposed locations on BLM land in T. 30 N., R. 108 W., Sec. 4 and/or 5. Total permanent ROW on BLM lands would consist of approximately 12 acres. See Figure 1 for a general location of the project and Figure 4 for a more detailed location of the project.

Rocky Mountain Power is proposing a temporary use area beyond the perimeter of the substation footprint to facilitate substation construction. The temporary use areas would consist of approximately three acres. The permanent ROW area would consist of approximately 12 acres. Total disturbance for the substation would consist of approximately 15 acres.

## **2.3 ALTERNATIVE III – 25 kV DISTRIBUTION ONLY**

Alternative III consists of only constructing the 25 kV distribution system and would not include the 230 kV alignment amendment, the 69 kV transmission line or the substation, see Segments 1 through 13 on Figure 2.

## **2.4 ALTERNATIVE IV – 25 kV DISTRIBUTION, 69 kV TRANSMISSION AND SUBSTATION**

Alternative IV consists of constructing the 25 kV distribution system and the 69 kV transmission line and substation. Alternative IV would not include the 230 kV alignment amendment, see “Authorized 230 kV Route” on Figure 2.

## **2.5 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

The proposed action is required to connect existing natural gas infrastructure, such as central gathering facilities, tank batteries and water disposal sites. There have been numerous changes to individual segments to reroute around wildlife No Surface Occupancy (NSO) zones, well pads, pipeline corridors, etc.

One alternative initially considered for the proposed distribution line was not analyzed in detail. This alternative was for the entire distribution system to be constructed underground. This

alternative was considered to reduce impacts to wildlife and visual resources. However, regulations requiring Rocky Mountain Power to maintain voltage and reliability standards, capacitance, reduced expansion flexibility and maintenance concerns prevent this from being a feasible alternative. Rocky Mountain Power would not be able to accomplish the Project goal of providing electricity to the large industrial customers in the project area using only underground lines. Additional information regarding this topic is contained in Appendices 3 (Voltage Rise Modeling) and 4 (Overhead Power Line Requirements Overview).

### **3.0 AFFECTED ENVIRONMENT**

The Project Area is accessed via Highway's 191 and 351, Sublette County Roads, Paradise Road, Middle Crest Road, Boulder South Road, Jonah North Road and other upgraded oil and gas development roads (See attached Exhibit A). This area is located in the Pinedale Field Office Management Area. The Green River Basin, a large topographic depression created by the southward flowing Green River and its tributaries, characterizes topography in the region. This basin is bounded on the northeast by the Wind River uplift and on the west is the Wyoming portion of the Overthrust Belt.

The project area is in an area of Wyoming Big Sagebrush-High Density vegetation community. The area contains numerous washes or drainages which flow into the New Fork River, which flows into the Green River.

The 25 kV distribution lines would cross the New Fork River and adjacent wetlands. Elevation ranges from approximately 6900 feet to 7100 feet above mean sea level. The entire project area is within the heavily developed area of the Pinedale Anticline Oil and Gas Exploration and Development Project.

The following elements of the human environment and resource elements have been reviewed and it has been determined that these elements would not be affected by the proposed action; and would not be discussed further in this document:

- Environmental Justice
- Water Quality; Drinking and Ground Water
- Hazardous or Solid Wastes
- Land Use and Livestock Grazing
- Forests and Rangelands
- Prime or Unique Farmlands
- Wild and Scenic Rivers
- Fish Habitat
- Wilderness/ WSAs/ ACECs
- Lands with Wilderness Characteristics (LWCs) †<sup>1</sup>

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<sup>1</sup> The BLM PFO has delineated a boundary for LWCs inventory in the Pinedale Anticline Field (WYD01-6300-100). The proposed action is entirely within the delineated boundary; thus, does not affect LWCs are not affected.

Elements of the human environment and/or resource elements that could potentially be affected are:

- Cultural Resources/ Native American Religious Concerns/ Historic Trails
- Paleontology/Geology and Minerals
- Air Resources
- Global Climate Change
- Soils
- Vegetation
- Sensitive Status Plants
- Noxious Weeds and Invasive Species
- Threatened, Endangered or Candidate Species/ BLM Sensitive Species
- Wildlife and Aquatic Resources
- Wetlands, Riparian Resources and Floodplains
- Visual Resources
- Recreational Resources

### **3.1 CULTURAL RESOURCES/ NATIVE AMERICAN RELIGIOUS CONCERNS/ HISTORIC TRAILS**

Cultural resources include prehistoric and historic-era (>50 years old) archaeological artifacts, features and sites that are protected under the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA). Cultural resources that are judged to meet the criteria for listing on the National Register of Historic Places (NRHP) are considered to be significant historic properties and, as such, must be considered during planning for federal undertakings (36 CFR 800). Federal agencies are also required to consider the effects of their actions on items, resources, and locations of religious significance to Native Americans, as specified in the American Indian Religious Freedom Act (AIRFA), Executive Order (EO) 13007: Indian Sacred Sites, and EO 13287: Preserve America. Native American graves and burial grounds, including human remains, sacred and funerary objects, and objects of cultural patrimony, are protected under the Native American Graves Protection and Repatriation Act (NAGPRA).

The Wyoming BLM entered into an agreement with the Wyoming State Historic Preservation Officer (SHPO) to implement a state Protocol (BLM and Wyoming SHPO 2006). The Wyoming State Protocol supplements the National BLM Programmatic Agreement and provides further guidance for the assessment of potential impacts and adequate mitigation of visual and direct impacts to cultural resources (BLM and Wyoming SHPO 2006:Appendix C).

#### **3.1.1 Area of Potential Effects**

The area of potential effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (36 CFR 800.16[d]).

The area of potential effects (APE) for the proposed Project Alternatives on public lands managed by the BLM PFO includes the 25 kV distribution line network, 230 kV transmission line route amendment, 69 kV transmission line, and substation for the 69 kV transmission line shown on Figures 1 through 6. The APE for three segments of the 25 kV distribution line north of SR 351 (Segments 2, 2BC and 2C), for the 69 kV Alignment and a portion of Option B of the 69 kV transmission line is a 300-foot-wide corridor (225 feet west of and 75 feet east of the centerline for the ROW). The APE for the remaining segments of the 25 kV distribution line, the 230 kV transmission line route amendment, and the 69 kV transmission line (including Options A and B) is a 150-foot-wide corridor (75 feet on either side of the centerline for the ROW). For the substation, the APE includes the permanent ROW and temporary use area, which is approximately 15 acres at each proposed location.

**3.1.2 Cultural Resources Identification**

A Class III cultural resources inventory and survey for this specific undertaking within the APE is described in a report entitled Class III Cultural Resources Inventory for the Anticline Electrification 25 kV distribution Lines Project, Sublette County, Wyoming, prepared by Parus Consulting, Inc. (Sikes and Arrington, 2012). As part of that inventory, the records search and literature review included the Wyoming Cultural Resources Information System (WYCRIS) database of the Wyoming Cultural Records Office (WYCRO) administered by the Wyoming SHPO, and BLM records. The official file searches of the WYCRO were conducted on April 5, May 10, May 20, August 16, and September 21, 2011 (WYCRO file search numbers 26846, 26847, 26848, 27100, 27174, 27599, and 27839) for the legal sections within the project area. Additional file searches were conducted at the BLM PFO on April 6, 2011, and using the BLM’s General Land Office (GLO) records database (<http://www.glorerecords.blm.gov/>) and the BLM’s cadastral survey plats and records for Wyoming (<http://www.wy.blm.gov/cadastral/products.htm>).

The archaeologists surveyed the APE situated entirely on public lands managed by the BLM PFO on May 17 through May 22, 2011, August 23 through August 25, 2011, and September 27 through 29, 2011. Standard pedestrian transects were employed at intervals no greater than 15 meters apart along and parallel to the centerline along the 25 kV distribution line, 230 kV transmission line route amendment, and 69 kV transmission line. As of September 29, 2011, a total of 675.91 acres were intensively surveyed by the archaeologists. Due to alignment revisions, addition of a substation, and weather restrictions in the region not all surveys for the presence or absence of cultural resources could be completed before the submission of this document. The BLM PFO will review and approve a pedestrian survey of the entire APE located on public lands managed by the BLM PFO (Table 3-1) before the start of Project-related ground disturbance.

**Table 3-1. Project Segments and Acres Surveyed**

<b>Project Segment Identifier</b>	<b>Segment Length (miles)</b>	<b>Width West of Centerline (feet)</b>	<b>Width East of Centerline (feet)</b>	<b>Acres Surveyed per Segment<sup>1</sup></b>
<b><i>25 kV Distribution Lines</i></b>				
2 - Middle Crest	2.16	225	75	78.39
2A - Middle Crest	2.82	75	75	51.35

<b>Project Segment Identifier</b>	<b>Segment Length (miles)</b>	<b>Width West of Centerline (feet)</b>	<b>Width East of Centerline (feet)</b>	<b>Acres Surveyed per Segment<sup>1</sup></b>
2B - Middle Crest	0.56	75	75	10.26
2AB - Middle Crest	1.56	75	75	28.36
2BC - Middle Crest	1.37	225	75	49.92
2C - Middle Crest	2.05	225	75	74.37
<b><i>continued - 25 kV Distribution Lines</i></b>				
3 - Warbonnet	3.01	75	75	54.78
4 - Falcon	3.61	75	75	65.62
5 - Boulder 8 (OH)	0.48	75	75	8.75
5 - Boulder 8 (UG)	0.99	75	75	18.01
6 - Ultra CGF2 (OH)	1.08	75	75	19.72
7 - Shell Central LPF	0.67	75	75	12.17
8 - Ultra CGF3 (OH)	0.84	75	75	15.32
9 - Ultra CGF4 (UG)	0.33	75	75	6.00
10 - Ultra SWD (OH)	0.27	75	75	4.93
<b><i>continued - 25 kV Distribution Lines</i></b>				
10 - Ultra SWD (UG)	0.35	75	75	6.34
11 - Rainbow to Antelope	3.42	75	75	62.18
12 - Plains (UG)	0.34	75	75	6.13
13 - New Field (UG)	0.24	75	75	4.36
<b><i>Total for 25 kV lines</i></b>	<b><i>26.16</i></b>			<b><i>576.98</i></b>
<b><i>69 kV Transmission Line</i></b>				
69 kV Alignment	1.41	225	75	51.43
Option A	3.45	75	75	62.67
Option B	4.42	225	75	160.73
Option B	1.93	75	75	35.09
<b><i>Total for 69 kV line</i></b>	<b><i>11.21</i></b>			<b><i>309.92</i></b>
<b><i>230 kV Transmission Line</i></b>				
230 kV 1	2.11	75	75	39.15
230 kV 2	0.15	75	75	2.75
230 kV 3	3.70	75	75	67.26
230 kV 4	1.42	75	75	26.44
230 kV 5	2.61	75	75	47.76
<b><i>Total for 230 kV line</i></b>	<b><i>9.99</i></b>			<b><i>183.36</i></b>
<b><i>Substation</i></b>				
Substation (northernmost footprint)	--	--	--	15
Substation (southernmost footprint)	--	--	--	15
<b><i>Total for substation</i></b>				<b><i>30</i></b>

<sup>1</sup> Pedestrian survey of the majority of the APE has been completed. Survey of proposed alignment revisions and substation footprints will be completed in the spring/summer of 2012 (depending on surface visibility), then reviewed and approved by the BLM PFO before the start of any construction. Note there is survey coverage overlap between segments of the 25 kV distribution line and the 69 kV and 230 kV transmission lines.

### **3.1.3 Cultural History Context**

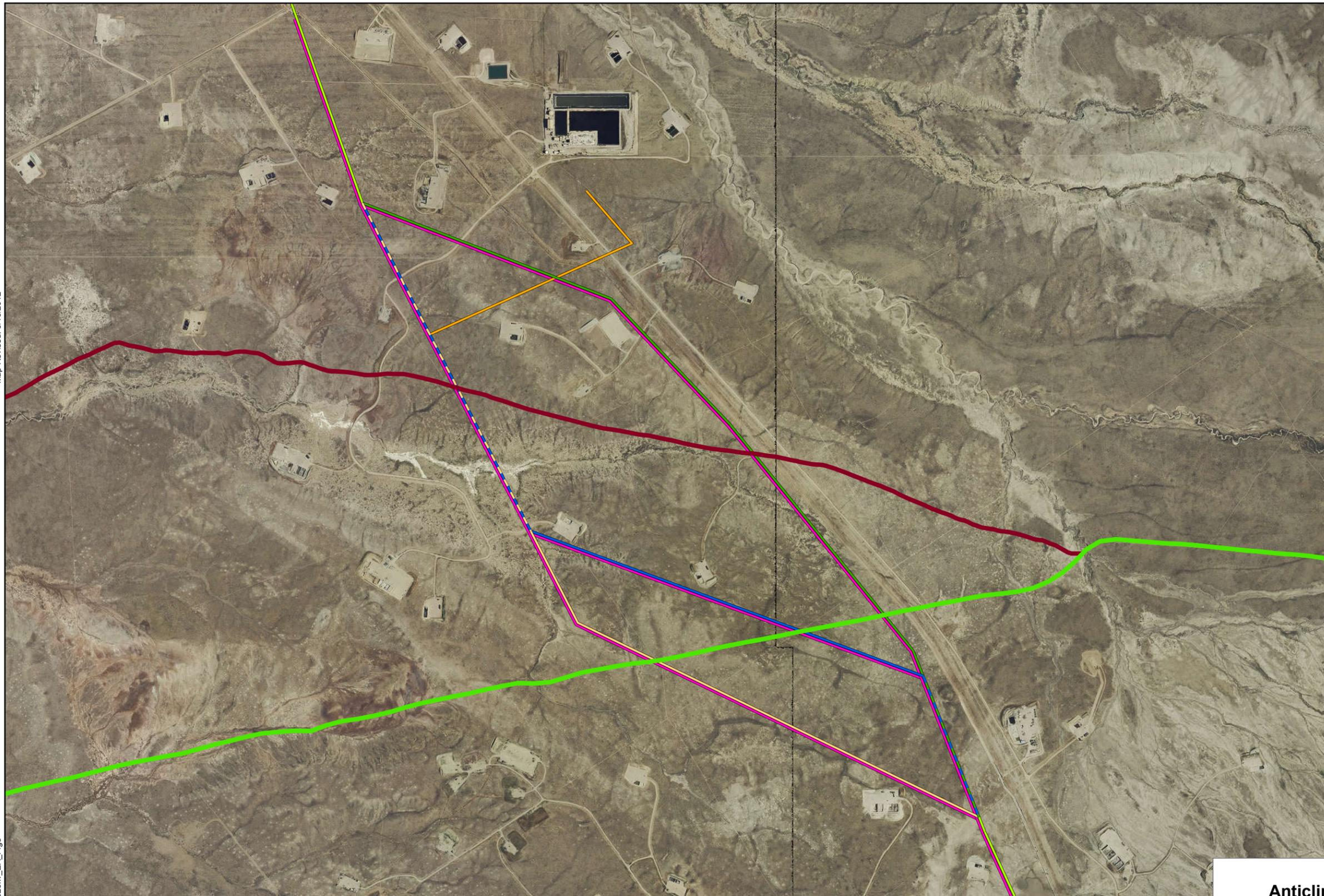
The regional prehistory for the western Wyoming Basin, including the Green River Basin, is divided into five major periods (Paleoindian, Early Archaic, Late Archaic, Late Prehistoric, and Protohistoric), ranging in age from 11,500 years before present (B.P.) to the historic period. The periods are mainly based on adaptive strategies and technological developments. Subsequent to the mobile, big-game hunting existence of the Paleoindian period, the Early Archaic period shows an increase in “settling-in” with a reliance on a broad range of plants and animals, and an

elaboration of house and cooking pit forms. The complexity and diversity of cultural remains increase during the subsequent Late Archaic period. The Late Prehistoric period, during which the historic Shoshone inhabitants of this region arrived, is characterized by the adoption of the bow and arrow and the first evidence of pottery.

The appearance of European trade goods marks the start of the Protohistoric period about 250 years B.P. about the same time fur trading in the early 1800s initiated the Historic period. In 1811, a party of the American Fur Company pioneered the route through present-day Casper that later became the Oregon Trail system. The historic Lander Road (48SU387), a branch of the Oregon Trail, was surveyed by Frederick W. Lander, and first used in 1859 by emigrants on their way to California and Oregon. Circa 1889, the New Fork Southwest Wagon Road (48SU5409) along the south side of the New Fork River linked Lander Road (48SU387) and the New Fork Wagon Road (48SU1408), see Figure 8. The Upper Green River Valley remained an important transportation corridor into the early 20th century for emigrants, cattle drives from the ranches established during the Expansion Era. Since the 1920s, oil and gas have played a significant role in the regional economy.

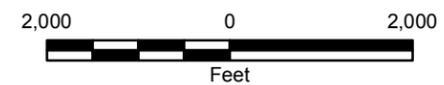
Map Revised: 3/16/2012

Office: TACO Name: Anticline25kv\_EA\_Fig8



- Legend**
- Lander Road
  - Wagner Variant
  - Segment 1 - New Fork Crossing
  - Segment 2 - Middle Crest
  - Segment 2A - Middle Crest
  - Segment 2AB - Middle Crest
  - Segment 2B - Middle Crest
  - Segment 2BC - Middle Crest
  - Segment 2C - Middle Crest
  - Segment 6 - Ultra CGF2 (OH)
  - Segment 6 - Ultra CGF2 (UG)
  - Anticline 69 kV Transmission

Reference: 2009 NAIP Imagery from US Department of Agriculture.



**Notes:**

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

**Historic Trails  
Anticline Electrification Project**

Rocky Mountain Power  
Sublette County, Wyoming



**Figure 8**

The occurrence of prehistoric and historic archaeological sites attributable to each of these periods varies significantly among 15 cultural resources subregions identified within the Pinedale planning area (McNees et al. 2006:3, Fig 1-2; BLM 2008b:3-15, Map 3-2). The APE encompasses two of the 15 cultural subregions: Anticline South and River-related. The extreme northern extent of the APE (northern portion of Segments 2 and Segment 5 of the 25 kV distribution lines) occurs within the River-related cultural subregion; the remainder of the APE lies within the Anticline South cultural subregion.

The River-related cultural subregion has a rich concentration of prehistoric resources, and a particularly high concentration of significant historic properties (BLM 2008b:3-16). Among the prehistoric resources are rock alignment complexes on river terrace game and plant processing localities, and campsites on ridge and butte tops. Sites with ceramics attest to Late Prehistoric occupation, and there are also some of the finest examples of Protohistoric and Historic period Native American rock art, particularly in the Green River Valley (McNees et al. 2006:185). There also appears to be a higher frequency of Paleoindian sites in the River-related subregion than many of the surrounding subregions in the BLM PFO area (BLM 2009:76).

The Anticline South subregion contains an especially high density of significant prehistoric cultural resources, and is known for an abundance of archaeological sites associated with the Early Archaic Period (McNees et al. 2006:170; BLM 2008a:3-15-3-16). Many of the sites contain buried archaeological features, including the remnants of early pit houses dating between 7,200 and 6,000 years B.P. These buried cultural resources are frequently associated with San Arcacio or San Arcacio-like soils, such as the Forelle series (Soil Survey Staff 2010), and typically lack a surface expression (BLM 2008b:3-16). The prevalence of lithic scatters in the subregion reflects the presence of various tool stone sources in the Blue Rim and Yellow Point areas, and additional sources immediately south in the adjacent subregions.

Historic resources documented within the River-related cultural subregion are associated with the fur trade era and early exploration of the region, and ranching and cattle herding (BLM 2008b:3-16). The Anticline South subregion was largely unsettled rangeland on the route of the Green River Drift, a historic cattle drive area used by local ranchers for over 100 years (McNees et al. 2006:171). The historic Lander Road and the recently recognized Wagner's Variant of the wagon road (48SU387) traverses east-west across both the River-related and Anticline South cultural subregions, and includes crossings of the New Fork and Green Rivers. The wagon road is significant because it facilitated transcontinental settlement and western expansion, and has been designated by Congress as part of the National Historic Trail System. A network of additional wagon roads crossed this region, including the New Fork Wagon Road (48SU1408) from Rock Springs to New Fork and one from Big Piney to New Fork that linked the Lander Road and the New Fork Wagon Road (48SU5409, New Fork Southwest Wagon Road).

#### **3.1.4 Cultural Resource Site Occurrence**

Based on the results of the cultural resources file searches and field surveys, 24 cultural resource sites were identified within the APE, and an additional three sites outside but immediately adjacent to the APE (Table 3-2). Each of these 27 sites (24 prehistoric and 3 historic) were previously known and documented. The prehistoric site located within the proposed southernmost substation footprint is also adjacent to but outside of Segment 3 of the proposed

25 kV distribution lines, and the prehistoric site within Segment 2B is also located adjacent to Segment 2C.

The 24 prehistoric sites include 16 open camps, 5 lithic scatters, 2 occupation sites, and 1 hearth feature. The historic-era sites include three roads: the Lander Road and the recently recognized Wagner’s Variant (48SU387), the New Fork Southwest Wagon Road (48SU5409), and an unnamed ranch road (48SU5264).

**Table 3-2. Cultural Resource Site Count by Era and Project Segment in and Immediately Adjacent to APE**

<b>Project Segment Identifier</b>	<b>Prehistoric</b>	<b>Historic</b>	<b>Total</b>
<b><i>25 kV Distribution Lines</i></b>			
2 - Middle Crest	2	1	3
2A - Middle Crest	0	2	2
2B - Middle Crest	1	1	2
2AB - Middle Crest	0	0	0
2BC - Middle Crest	4	2	5
2C - Middle Crest	1	1	2
3 - Warbonnet	5	0	5
4 - Falcon	3	0	3
5 - Boulder 8 (OH)	2	1	3
5 - Boulder 8 (UG)	0	0	0
6 - Ultra CGF2 (OH)	0	0	0
7 - Shell Central LPF	1	0	1
8 - Ultra CGF3 (OH)	1	0	1
9 - Ultra CGF4 (UG)	0	0	0
10 - Ultra SWD (OH)	0	0	0
10 - Ultra SWD (UG)	1	0	1
11 - Rainbow to Antelope	3	0	3
12 - Plains (UG)	1	0	1
13 - New Field (UG)	1	0	1
<b><i>Total for 25 kV lines</i></b>	<b><i>26<sup>1</sup></i></b>	<b><i>8<sup>1</sup></i></b>	<b><i>34<sup>1</sup></i></b>
<b><i>69 kV Transmission Line</i></b>			
69 kV Alignment	2	0	2
Option A	0	2	2
Option B	5	2	7
<b><i>Total for 69 kV line</i></b>	<b><i>7<sup>2</sup></i></b>	<b><i>4<sup>2</sup></i></b>	<b><i>11<sup>2</sup></i></b>
<b><i>230 kV Transmission Line</i></b>			
230 kV 1	5	0	5
230 kV 2	0	0	0
230 kV 3	2	0	2
230 kV 4	0	0	0
230 kV 5	0	0	0
<b><i>Total for 230 kV line</i></b>	<b><i>7<sup>3</sup></i></b>	<b><i>0</i></b>	<b><i>7<sup>3</sup></i></b>
<b><i>Substation</i></b>			
Substation (northernmost footprint)	0	0	0
Substation (southernmost footprint)	1	0	1
<b><i>Total for substation</i></b>	<b><i>1<sup>4</sup></i></b>	<b><i>0</i></b>	<b><i>1<sup>4</sup></i></b>
<b>Grand total (no duplicate tallies)</b>	<b>24<sup>5</sup></b>	<b>3<sup>5</sup></b>	<b>27<sup>5</sup></b>

<sup>1</sup> For the 25 kV distribution lines, the prehistoric site total includes two tallies for 48SU4977 in Segments 3 and 7, and two tallies for 48SU4972 in Segment 2B and adjacent to Segment 2C. The historic site total includes: four tallies for 48SU387 (Lander Road and Wagner's Variant) in Segments 2A, 2B, 2BC, and 2C; two tallies for 48SU5409 (New Fork Wagon Road) in Segments 2 and 5; two tallies for 48SU5264 (ranch road) in Segments 2A and 2BC.

<sup>2</sup> For the 69 kV alignment, the prehistoric site total duplicates the tallies for 2 sites (48SU3831, 48SU4893) in Segment 2 of the 25 kV distribution lines tally. For Option B, the prehistoric site total duplicates the tallies for 5 sites in segments of the 25 kV distribution lines: Segment 2B (48SU4972) and Segment 2BC (48SU4447, 48SU4449, 48SU4452, 48SU4974). The historic site total includes: two tallies for 48SU387 (Lander Road and Wagner's Variant) in Options A and B; two tallies for 48SU5264 (ranch road) in Options A and B.

<sup>3</sup> For the 230 kV transmission line amendment, the prehistoric site total duplicates the tallies for 7 sites in the 25 kV distribution lines tally: Segment 3 (48SU261, 48SU4692, 48SU4978, 48SU4979), Segment 4 (48SU6485 and 48SU6648), and Segments 3 and 7 (48SU4977).

<sup>4</sup> For the substations, the prehistoric site total duplicates the tally for 48SU4979 for Segment 3 of the 25 kV distribution lines.

<sup>5</sup> All duplicate tallies have been removed from the grand total.

The Lander Road is a branch of the Oregon Trail, and has been congressionally designated as a National Historic Trail and determined eligible for NRHP nomination by the BLM and the Wyoming SHPO. Even though a historic linear feature may be eligible for the NRHP, various segments may or may not contribute to that significance depending on the integrity of the specific segment (cf. RMP ROD Appendix 1, page 2 [BLM 2008a]). Only segments that are sufficiently intact to contribute to the overall eligibility of the historic linear site for nomination to the NRHP are considered to retain significance. Impacts to significant segments of historic linear sites can occur from direct disturbance of the route itself or from disturbance of the setting if that setting is of import to the overall eligibility of the linear site. Impacts to the setting of contributing segments, if they cannot be avoided through Project redesign, are frequently mitigated through off-site efforts, such as establishment of interpretive signage for the public.

Management actions for cultural resources concerning the Lander Road, provided in Section 2.3.2 of the Pinedale RMP ROD, include the specification that: "The Lander Trail and its visual historic setting will be protected through the establishment of a VRM Class II designation for about 71,510 acres of public land within 3 miles of contributing segments of the trail (Map 2-30)" (BLM 2008a:2-11). The RMP ROD also specifies that: "Segments of the Lander Trail where the setting does not contribute to its eligibility for the NRHP will be managed as determined by the VRM Class inventory" (BLM 2008a:2-12). The segments of the historic Lander Road proposed to be directly crossed by the proposed 25 kV distribution lines (Segments 2A, 2B, and 2C) and 69 kV transmission line (Options A and B) are not within the portions of the trail considered to be contributing to the site's significance by the RMP ROD, as demonstrated on Map 3-1 of that document (BLM 2008a:Map 3-1). The crossing locations of the Wagner's Variant of the Lander Road by the proposed 25 kV distribution lines (Segments 2A and 2BC) and 69 kV transmission line (Options A and B) are also considered non-contributing segments of the wagon road setting (personal communication, Sam Drucker, BLM PFO, August 23, 2011).

It was determined that the original 230 kV transmission line would have an adverse effect to the visual setting of contributing segments of the Lander Road, and appropriate mitigation to resolve the adverse effect was resolved through implementation of a Memorandum of Agreement (MOA) (BLM et al. 2010b). Oil and gas development in the PAPA have also been determined to have an adverse effect on the Lander Road and on Wagner's Variant. The impacts have been

fully analyzed in the PAPA SEIS (BLM 2008c, 2008d) and the adverse effects resolved in the Amended Programmatic Agreement for the trail (BLM et al. 2010a).

Appendix 3 of the RMP ROD applies “Mitigation Guidelines and Operating Standards Applied to Surface Disturbing and Disruptive Activities” to all significant historic trails and roads, including the Lander Road. The Cultural/Paleontological Resources section of that appendix states specifically: “Historic trails will be avoided. Surface disturbing activities will avoid areas within one-quarter mile of a trail unless such disturbance would not be visible from the trail or will occur in an existing visual intrusion area. Historic trails will not be used as haul roads. Placement of facilities outside one-quarter mile that are within view of the Lander Trail will be located to blend the site and facilities in with the background” (BLM 2008a:Appendix 3, page 6).

### **3.1.5 Cultural Resource Constraints and Site Significance**

Cultural resources sites within the APE for the Project that are determined significant or are considered sensitive to Native American concerns are of the greatest concern. Site significance is considered based on evaluation of each cultural resource for its eligibility to be nominated to the National Register of Historic Places (NRHP). Significant cultural resources are those evaluated as eligible for nomination for the NRHP. NRHP site significance is assessed with regard to the criteria in Title 36 CFR 60.4 (cf. RMP ROD Appendix 1, page 2 [BLM 2008a]). Although Native American sites may not be eligible for the NRHP, they are still protected under other statutes, including ARPA, NAGPRA, AIRFA, and EOs 13007 and 13287.

Of the 24 recorded cultural resources sites within the APE, nine resources (8 prehistoric and 1 historic) have been determined eligible for NRHP nomination by the reviewing agency; six of these with SHPO concurrence (Table 3-3). One additional prehistoric site has been recommended eligible for NRHP nomination by field archaeologists. Twelve sites (10 prehistoric and 2 historic) have been determined not eligible for NRHP nomination by the reviewing agency; 9 of these with SHPO concurrence. One prehistoric site within the APE has been recommended not eligible by field archaeologists and one prehistoric site has been recommended as unevaluated by the reviewing agency since it requires evaluative testing.

**Table 3-3. NRHP Eligibility by Era for Sites Identified in APE**

<b>NRHP Eligibility</b>	<b>Prehistoric</b>	<b>Historic</b>	<b>Total</b>
Determined Eligible	8	1	9
Recommended Eligible	1		1
Determined Not Eligible	10	2	12
Recommended Not Eligible	1		1
Recommended Unevaluated	1		1
<b>Total</b>	<b>21</b>	<b>3</b>	<b>24</b>

Of the three recorded cultural resources sites located outside but immediately adjacent to the APE (Table 3-4), all of which are prehistoric sites, one has been determined eligible for NRHP nomination by the reviewing agency. The remaining two sites adjacent to the APE have been determined not eligible for NRHP nomination by the reviewing agency. The two sites located within the APE but also adjacent to APE segments are also included in the table; one has been

determined eligible and one determined not eligible for NRHP nomination by the reviewing agency, both with SHPO concurrence.

**Table 3-4. NRHP Eligibility by Era for Sites Identified Immediately Adjacent to APE**

NRHP Eligibility	Prehistoric	Historic	Total
Determined Eligible	2	0	2
Determined Not Eligible	3	0	3
<b>Total</b>	<b>5<sup>1</sup></b>	<b>0</b>	<b>5<sup>1</sup></b>

<sup>1</sup> The prehistoric site total contains tallies for two sites that also lie within the APE: site 48SU4972 within Segment 2B of the 25 kV distribution lines is also adjacent to Segment 2C; site 48SU4979 within the proposed southernmost station footprint is also adjacent to Segment 3 of the 25 kV distribution lines.

The 10 recorded cultural resources sites within the APE that have been determined or recommended eligible for NRHP nomination (Table 3-5) include two prehistoric occupation sites that contain buried deposits, five prehistoric open camps, two prehistoric lithic scatters, and the historic Lander Road (48SU387). The Lander Road or the recently recognized Wagner Variant of the trail are proposed to be directly crossed by the 25 kV distribution lines (Segments 2A, 2B, 2BC, or 2C) and 69 kV transmission line (Options A and B).

**Table 3-5. Sites in APE Determined or Recommended Eligible for Nomination to NRHP Listed by Era and Project Segment**

Project Segment Identifier	Prehistoric	Historic	Total
<b>25 kV Distribution Lines</b>			
2A - Middle Crest	0	1	1
2B - Middle Crest	0	1	1
2BC - Middle Crest	0	1	1
2C - Middle Crest	0	1	1
3 – Warbonnet	4	0	4
5 - Boulder 8 (OH)	1	0	1
7 - Shell Central LPF	1	0	1
8 - Ultra CGF3 (OH)	1	0	1
11 - Rainbow to Antelope	1	0	1
12 - Plains (UG)	1	0	1
<b>Total for 25 kV lines</b>	<b>9<sup>1</sup></b>	<b>4<sup>1</sup></b>	<b>13<sup>1</sup></b>
<b>69 kV Transmission Line</b>			
Option A	0	1	1
Option B	0	1	1
<b>Total for 69 kV line</b>	<b>0</b>	<b>2<sup>2</sup></b>	<b>2<sup>2</sup></b>
<b>230 kV Transmission Line</b>			
230 kV 1	4	0	4
<b>Total for 230 kV line</b>	<b>4<sup>3</sup></b>	<b>0</b>	<b>4<sup>3</sup></b>
<b>Substation</b>			
Substation (southernmost footprint)	1	0	1
<b>Total for substation</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>Grand total (no duplicate tallies)</b>	<b>9<sup>4</sup></b>	<b>1<sup>4</sup></b>	<b>10<sup>4</sup></b>

- <sup>1</sup> For the 25 kV distribution lines, the prehistoric site total includes two tallies for 48SU4977 in Segments 3 and 7. The historic site total includes four tallies for 48SU387 (Lander Road and Wagner’s Variant) in Segments 2A, 2B, 2BC, and 2C.
- <sup>2</sup> For the 69 kV transmission line, the historic site total includes two tallies for 48SU387 (Lander Road and Wagner’s Variant) in Options A and B.
- <sup>3</sup> For the 230 kV transmission line amendment, the prehistoric site total duplicates the tallies for sites in segments of the 25 kV distribution lines: Segment 3 (48SU261, 48SU4692, 48SU4978); Segments 3 and 7 (48SU4977).
- <sup>4</sup> All duplicate tallies have been removed from the grand total.

The one recorded cultural resources site located outside but immediately adjacent to the APE that has been determined eligible for NRHP nomination (Table 3-6) is a prehistoric open camp. The table also includes one additional prehistoric open camp that is located adjacent to the 25 kV distribution lines (Segment 3) and also within the APE for the southernmost station footprint.

**Table 3-6. Sites Immediately Adjacent to APE Determined Eligible for Nomination to NRHP Listed by Era and Project Segment**

<b>Project Segment Identifier</b>	<b>Prehistoric</b>	<b>Historic</b>	<b>Total</b>
<b><i>25 kV Distribution Lines</i></b>			
2BC - Middle Crest	1	0	1
3 - Warbonnet	1 <sup>1</sup>	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>

<sup>1</sup> Prehistoric site (48SU4979) is also located within the APE for the proposed southernmost station footprint.

The one recorded cultural resources site within the APE that has been recommended as unevaluated by the reviewing agency (Table 3-7) is a prehistoric open camp. This site is located within Segment 2BC of the 25 kV distribution lines and also Option B of the 69 kV transmission line. Since the site requires evaluative testing, it is considered potentially NRHP-eligible for purposes of this assessment.

**Table 3-7. Unevaluated Site Potentially Eligible for Nomination to NRHP Listed by Era and Project Segment**

<b>Project Segment Identifier</b>	<b>Prehistoric</b>	<b>Historic</b>	<b>Total</b>
<b><i>25 kV Distribution Lines</i></b>			
2BC - Middle Crest	1	0	1
<b><i>69 kV Transmission Line</i></b>			
Option B	1	0	1
<b>Total (no duplicate tallies)</b>	<b>1<sup>1</sup></b>	<b>0</b>	<b>1<sup>1</sup></b>

<sup>1</sup> Prehistoric site (48SU4794) is located within the APE for Segment 2BC and for Option B.

Regardless of proposed Project actions, sites that have been determined not eligible for the NRHP are generally recommended to need no further work. Nonetheless such sites within the APE were each revisited or will be revisited and evaluated for the accuracy of recording and eligibility for the NRHP and their current status verified. Although not required, ineligible sites would generally be avoided by direct impacts during construction for this project. Avoidance of project impacts to archaeological sites that are determined to be significant or considered potentially significant due to their eligibility for NRHP nomination is preferred and generally accomplished during development by moving planned project activities outside site boundaries.

Although not anticipated by this project, should avoidance be infeasible, more intrusive mitigation measures would be developed and implemented by way of a testing or data recovery plan approved by the Wyoming SHPO.

Historic properties or cultural resources significant for preservation, representation, and interpretation of important aspects of history, prehistory, or other qualities of cultural heritage, may require different treatment approaches. These sites may include historic roads and trails, such as the Lander Road, or sites of cultural importance to Native American tribes. In addition to avoidance of direct project impacts, the quality of the physical setting for these resources is considered, both in and outside of the direct path of project construction. Visual intrusion on the integral setting of these sites by features out of character with the original historic landscapes may be considered to diminish or destroy their historical, sacred, or sensitive qualities.

The visual setting for the identified sites within or immediately adjacent to the APE is not considered integral to the significance of any of the 11 resources determined or recommended eligible for NRHP nomination (10 within APE, 1 immediately adjacent), including the Lander Road, or for the one unevaluated site within the APE that is considered potentially NRHP-eligible. The historic Lander Road, including the recently recognized Wagner Variant of the trail, is proposed to be directly crossed by Segments 2A, 2B, 2BC, or 2C of the proposed 25 kV distribution lines or by Options A or B of the proposed 69 kV transmission line. The crossing locations of the Lander Road are mapped in the Pinedale RMP ROD as non-contributing segments of the wagon road (BLM 2008a:Map 3-1). The crossing locations of the Wagner Variant are also considered non-contributing segments of the wagon road (personal communication from Sam Drucker, BLM PFO, to Cindy Arrington, PCI, August 23, 2011). The setting of non-contributing segments does not contribute to the overall eligibility of the trail for NRHP nomination. In agreement with the RMP ROD, the view shed of the trail within the APE will thus be “managed as determined by the VRM Class inventory” (BLM 2008a:2-12). Map 2-30 of the RMP ROD shows non-contributing segments of the Lander Road are managed as VRM Class III. The crossings by the proposed distribution or transmission lines are located outside the protected Class II designation for the contributing segments of the Lander Road, which as stated in the Amended Programmatic Agreement for the trail (BLM et al. 2010) encompasses public lands 3 miles north of the trail and south of the trail to SR 351.

Sites of cultural sensitivity for Native American peoples, which may include stone circle sites or stone alignments and cairns, may require additional consultation by the BLM with the appropriate tribal government(s). None of the recorded sites within the APE, however, are known to be of cultural sensitivity to Native American peoples.

Due to the potential of some sediments in the area to contain buried cultural deposits not manifested on the surface, unexpected subsurface discoveries could occur during ground disturbance from project construction. Dune deposits, San Arcadio or San Arcadio-like soils (e.g. Forelle), and aggraded alluvial terrace deposits have the potential to produce buried cultural materials. An approved Discovery Plan for inspection or monitoring by a qualified professional archaeologist would need to be in place for unexpected discoveries in areas where blading and similarly extensive ground disturbance is proposed in these soil situations.

## **3.2 PALEONTOLOGY/GEOLOGY AND MINERALS**

### **3.2.1 Regional Geologic Overview**

The project area falls within the Greater Green River Basin which formed during the Laramide orogeny, an orogeny which involved uplifting of mountains bordering the basin, flank thrusting at the basin margins, local folding and normal faulting, and rapid subsidence at basin depocenters. These tectonic events occurred intermittently over 30-million-years from the late Cretaceous through the Paleocene and into the Eocene with varying degrees of magnitude. The north-south trending Rock Springs uplift, the largest anticline, divides the Greater Green River basin into two nearly equal halves. The Great Divide, Washakie, and Sand Wash basins occupy the eastern half (Roehler, 1992a). The synclinal Green River basin in the western half of the greater Green River basin is bounded by the Wind River Mountains and the Wind River thrust fault to the northeast, the Uinta Mountains and the Uinta Mountain thrust belt to the south, the Wyoming thrust belt and the Darby thrust fault to the west, and the Rock Springs uplift to the east.

The Rock Springs uplift, which is cut by numerous northeastward trending faults (Bradley, 1964), was folded at least five times during the Laramide orogeny (twice during the Eocene), and at least six movements occurred along the Sparks Ranch thrust fault. The last major Laramide disturbances were the final, very late Eocene upwarp of the Rock Springs uplift, and the appearance of the Wamsutter arch and the Cherokee Ridge anticline. Sedimentation was continuous during the Laramide orogeny, except for interruptions adjacent to thrust faults or as a result of local faulting and folding. Since the end of the Eocene, the greater Green River basin has been only slightly modified by regional uplift, normal faulting, volcanism, and erosion (Roehler, 1992a).

### **3.2.2 Geologic Mapping**

Sedimentary deposits within the project area have been mapped in detail although as described below the details and interpretations vary. Deposits within the project area include younger surficial deposits of Recent age, and bedrock deposits of Early Eocene age.

#### **3.2.2.1 Recent Deposits**

Younger unnamed sedimentary deposits of Recent age include alluvial sediments deposited by the New Fork River in and along its drainage and other alluvium deposited in and along minor drainages and younger colluvium and soils that occur widespread across the project area. Recent deposits along the section of the transmission line corridor that crosses the New Fork include sand and associated granule conglomerate deposited by the river in its channel and sand and silts deposited on its banks during flood stage within its well defined flood plain. A pit excavated a few years ago by Shell on the north side of the river, about a mile from where the transmission line crosses the river, documented the at least 35 feet of river sand.

North of the river a number of gravel deposits, with boulder size clasts, form terraces that become progressively older the higher they are from river level, culminating with the conglomerate that cap the Mesa, that may be as much as 600,000 years old. Terraces are present south of the New Fork, but gravels coarser than granule size not as extensive. The most substantial terrace developed south of the river forms the flat areas extending from the north side of Blue Rim, south of Wyoming Highway 351, northward to the south bank of the New Fork

River. This level may also be part of a stripped structural surface underlain by sandstones of the Alkali Creek Member of the Wasatch Formation.

South of the New Fork River, with the exception of along the northern and western sides of Blue Rim, are expansive areas of Recent colluvium and soils developed on the Wasatch Formation of Early Eocene age, which forms the bedrock beneath the project area. The colluvium and soil contains an abundance of windblown sand and loess and in most places overlies deeply weathered bedrock of the Wasatch Formation.

### **3.2.2.2 Bedrock Geology**

The entire project area is underlain by bedrock of Early Eocene age (West 1972; Love and Christiansen 1985; Roehler 1991 et seq.). Bedrock maps depict various deposits present in the project area. West (1972) mapped the Fontenelle Tongue of the Green River Formation extending eastward up the New Fork River drainage just into the project area. He mapped Wasatch Formation as underlying the rest of the area and named these deposits the New Fork Tongue of the Wasatch Formation for exposures in the New Fork Valley. He subdivided the New Fork Tongue into an eastern arkosic (feldspar-rich) unit and a western unit. The eastern unit was named for multicolored, arkosic, sandy mudstones that form the top of Blue Rim and strata above that he felt were older than overlying deposits of the Cathedral Bluffs Formation. The western unit was named for the less arkosic sandy mudstones that form the flanks of Ross Butte to the west and Blue Rim. Love and Christiansen (1985) on their state map depict the project area underlain by the New Fork Tongue of the Wasatch Formation.

Roehler (1991a and 1991b) demonstrated that the Fontenelle Tongue includes deposits of both the Wasatch Formation and overlying Green River Formation. As a result he discarded the term and subdivided the unit in a lower and upper unit. He named the lower unit the Farson Sandstone Tongue of the Green River Formation and the upper unit, the Alkali Creek Member of the Wasatch Formation. In this way he assigned lacustrine (lake) deposits to the Green River Formation and terrestrial deposits to the Wasatch Formation. He also discarded the term New Fork Tongue of the Wasatch Formation that West had used for deposits throughout the northern part of the Jonah field and included those strata in both the Alkali Creek and overlying Cathedral Bluffs Tongues of the Wasatch Formation.

Recent study by Winterfeld (2011) demonstrates that there are at least three distinct subunits (members) that comprise the Wasatch Formation in the project area and these include from oldest to youngest: (1) a lower sand dominated fluvial (water-lain) sandstone and mudstone unit that forms the base of the New Fork Valley and underlies the wide flat area between the New Fork River and Blue Rim; (2) a drab-gray and blue mudstone dominated unit that has contained within it, variegated paleosol sequences that is exposed along the lower parts of Blue Rim; and (3) a coarse, arkosic (feldspar-rich) sandstone and granule conglomerate dominated unit that forms the tops of Blue Rim and extends southward to Yellow Point Ridge and Stud Horse Butte, well to the south of southernmost transmission line corridor. Winterfeld's work suggests that unit 1 is the Alkali Creek Member, unit 2 is an unnamed variegated member, and unit 3 is an unnamed arkosic member that may be older than the Cathedral Bluffs Member.

Within the project area, bedrock exposures of units 1 and 3 are generally poor to non-existent and these units are often covered by colluvium or soil and heavily vegetated. Bedrock exposures

of unit 2 are good along the northern and western sides of Blue Rim, extending as much as a mile away from the northern edge of the rim itself. Unit 2 thickens considerably to the south where it overlies the Alkali Creek Member. However, because of its overall drab color and finer grained nature it seems inappropriate to refer to this unit as the Cathedral Bluffs Formation.

Table 3-8 provides documentation geology and paleontology traversed by the various transmission line section.

**Table 3-8. Project Segments**

<b>Project Segment Identifier</b>	<b>Segment Length (miles)</b>	<b>Width West of Centerline (feet)</b>	<b>Width East of Centerline (feet)</b>	<b>Acres Surveyed per Segment<sup>1</sup></b>
<b><i>25 kV Distribution Lines</i></b>				
2 - Middle Crest	2.16	225	75	78.39
2A - Middle Crest	2.82	75	75	51.35
2B - Middle Crest	0.56	75	75	10.26
2AB - Middle Crest	1.56	75	75	28.36
2BC - Middle Crest	1.37	225	75	49.92
2C - Middle Crest	2.05	225	75	74.37
3 - Warbonnet	3.01	75	75	54.78
4 - Falcon	3.61	75	75	65.62
5 - Boulder 8 (OH)	0.48	75	75	8.75
5 - Boulder 8 (UG)	0.99	75	75	18.01
6 - Ultra CGF2 (OH)	1.08	75	75	19.72
7 - Shell Central LPF	0.67	75	75	12.17
8 - Ultra CGF3 (OH)	0.84	75	75	15.32
9 - Ultra CGF4 (UG)	0.33	75	75	6.00
10 - Ultra SWD (OH)	0.27	75	75	4.93
10 - Ultra SWD (UG)	0.35	75	75	6.34
11 - Rainbow to Antelope	3.42	75	75	62.18
12 - Plains (UG)	0.34	75	75	6.13
13 - New Field (UG)	0.24	75	75	4.36
<b>Total for 25 kV lines</b>	<b>26.16</b>			<b>576.98</b>
<b><i>69 kV Transmission Line</i></b>				
69 kV Alignment	1.41	225	75	51.43
Option A	3.45	75	75	62.67
Option B	4.42	225	75	160.73
Option B	1.93	75	75	35.09
<b>Total for 69 kV line</b>	<b>11.21</b>			<b>309.92</b>
<b><i>230 kV Transmission Line</i></b>				
230 kV 1	2.11	75	75	39.15
230 kV 2	0.15	75	75	2.75
230 kV 3	3.70	75	75	67.26
230 kV 4	1.42	75	75	26.44
230 kV 5	2.61	75	75	47.76
<b>Total for 230 kV line</b>	<b>9.99</b>			<b>183.36</b>
<b><i>Substation</i></b>				
Substation (northernmost footprint)	--	--	--	15
Substation (southernmost)	--	--	--	15

Project Segment Identifier	Segment Length (miles)	Width West of Centerline (feet)	Width East of Centerline (feet)	Acres Surveyed per Segment <sup>1</sup>
footprint)				
<i>Total for substation</i>				30

### **3.2.3 Minerals**

With the exception of leasable construction materials that include sands and gravels that are present along and were deposited by the New Fork River, petroleum is the only commercial mineral resource present in the project area. Petroleum is produced from the Pinedale Field which underlies the project area and is developed in the Pinedale Anticline. The Pinedale Anticline, one of the largest structures in the northern Green River Basin, is an asymmetric structure bounded on its west by a high-angle reverse fault that is approximately 35 miles long and 6 miles wide (Law and Johnson, 1989). The Pinedale field produces from tight gas reservoirs in Late Cretaceous rocks of the Lance Formation at a depth of about 7,000 feet to 14,000 feet deep that are part of the Pinedale Anticline. These rocks have a low porosity, sub-millidarcy permeability, and have inverted pressure profiles, that is, overpressure builds from the top of the gas system to a maximum near the base (Nelson et al 2009).

### **3.2.4 Geologic Hazards**

Naturally occurring geologic hazards include fault generated earthquakes, floods, landslides or other mass movements. There are no known faults with surface expression or earthquake epicenters mapped within the project area (<http://geohazards.usgs.gov/qfaults/map.php>).

The nearest known earthquake epicenters recorded within a 25 km radius of the area include those of two quakes; a 1978 quake with a MLGS magnitude of 3.3 that occurred between Stud Horse Butte and US 191 and the other, a 1996 quake with a MLGS of 3.7 that occurred about 17 miles east of US 191 along the west flank of Little Prospect Mountain ([http://earthquake.usgs.gov/earthquakes/eqarchives/epic/epic\\_circ.php](http://earthquake.usgs.gov/earthquakes/eqarchives/epic/epic_circ.php)).

There are no major landslide or mass movement deposits in the area. Topographic relief is relatively low over most of the area. Slopes are steepest in places along the south bank of the New Fork, just east of the project area and along the north and west sides of Blue Rim. Blue Rim is developed in rocks of the Wasatch Formation that are virtually horizontal and lie perpendicular to the slope. This lessens the chance for naturally occurring mass movements. The general absence of even small slump scars suggests mass movements are not common within the project area.

### **3.2.5 Paleontology**

Of the sedimentary geologic units exposed on the surface only the Wasatch Formation has potential to produce fossils of scientific significance. The deposits of Recent age are probably for the most part too young (less than 10,000 years old) to produce fossils. However there are two unsubstantiated reports of possible Pleistocene age fossils having been found in the area. Charlie Love, Professor of Geology/Anthropology at Western Wyoming College in Rock Springs reportedly found mammoth dung in deposits along Sand Creek about 5 miles southwest of the project area, but this has yet to be substantiated. In addition, Dave Vlcek, recently retired

from the BLM Pinedale Office discovered some potentially Pleistocene horse bones along Yellow Point Ridge about 7 miles southwest of the project area. The age of these bones has also yet to be substantiated.

The Wasatch Formation, however, is well documented for producing fossils of scientific significance wherever it is well exposed. As a result, the BLM rates the formation to have a Probable Fossil Yield Class (PFYC) of 4 or 5 depending on the nature of bedrock exposures present. A rating of 5 is the highest potential on the PFYC. Mitigation is considered an effective way to deal with impacts of ground disturbance that affects bedrock of rock units rated 4 or 5 on the PFYC.

Not all members of the Wasatch Formation have the same potential, however. Scientific work including field surveys by West in the 1970s and survey and monitoring in the project and surrounding areas, including those by Erathem-Vanir Geological (Winterfeld) and Uinta Paleontological Associates (Bilbey) for oil and gas projects by Erathem-Vanir Geological (Winterfeld) and Uinta Paleontological Associates (Bilbey) in the 2000s, and Suzanne Straight (Marshall College) in the 1990s have documented the following paleontological resources in the three units of the Wasatch Formation present in the project area and described above:

- Unit 1: produced fossil wood and fossil termite mounds from mudstones and sandstones. With the exception of a few miniscule bone scraps from a conglomerate found in a well pit north of Wyoming 351, it has not produced any vertebrate fossils.
- Unit 2: has produced abundant fossils of vertebrates, including teeth, jaws, and postcrania of mammals and shell fragments and bones of reptiles nearly everywhere it is well exposed.
- Unit 3 has produced abundant vertebrate fossil fragments in a few locations from granule conglomerates including just west of US 191, along Jonah North Road as it crosses Blue Rim, and in an area southeast of the Falcon Compressor station. All of these fossils have been highly fragmentary, water-worn and of little scientific significance.

Table 1 in Appendix 5 provides documentation geology and paleontology traversed by the various transmission line section along with the type of field survey, the results of the survey and the recommendation for monitoring.

### **3.3 Air Resources**

Air quality, climate, and visibility are the components of air resources which the BLM must consider and analyze to address the potential effects of authorized activities on air resources as part of the planning and decision making process. The Pinedale RMP (November 26, 2008) addresses air quality issues, impacts, and potential mitigations (Sec. 2.3.1, Air Quality Management, p. 2-10).

### **3.3.1 Air Quality**

Regional air quality is influenced by the interaction of meteorology, climate, the magnitude and spatial distribution of local and regional air pollutant sources, and the chemical properties of emitted air pollutants.

The monitoring and enforcement of air-quality standards are administered by the Wyoming Department of Environmental Quality-Air Quality Division (WDEQ-AQD). Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS) identify maximum limits for concentrations of criteria air pollutants at all locations to which the public has access. The WAAQS and NAAQS are legally enforceable standards. Concentrations above the WAAQS and NAAQS represent a risk to human health that, by law, require public safeguards be implemented. State standards must be at least as protective of human health as federal standards, and may be more restrictive than federal standards, as allowed by the Clean Air Act (CAA). Currently, the WDEQ-AQD does not have regulations regarding greenhouse gas emissions, although these emissions are regulated indirectly by various other regulations.

Pollutant concentration can be defined as the mass of pollutant present in a volume of air and is reported in units of micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), parts per million (ppm), or parts per billion (ppb). The state of Wyoming has used monitoring and modeling to determine compliance with Wyoming and federal concentration standards. In addition, other monitoring systems are operational in the Pinedale area, including the *Clean Air Status and Trends Network* (CASTNet) and *Wyoming Air Resources Monitoring System* (WARMS). Monitoring data from these systems have been determined to be representative of the area.

Criteria air pollutants are those for which national concentration standards have been established; pollutant concentrations greater than the established standards pose a risk to human health and/or welfare.

Carbon monoxide (CO) is an odorless, colorless gas formed during combustion of any carbon-based fuel, such as during operation of engines, fireplaces, furnaces, etc. Because carbon monoxide data are generally collected only in urban areas where automobile traffic levels are high, recent data are often unavailable for rural areas.

Nitrogen dioxide (NO<sub>2</sub>) is a highly reactive compound formed at high temperatures during fossil fuel combustion. During combustion, NO is released into the air which reacts with oxygen in the atmosphere to form NO<sub>2</sub>. NO plus NO<sub>2</sub> is a mixture of nitrogen gases, collectively called nitrogen oxides (NO<sub>x</sub>). NO<sub>x</sub> emissions can convert to ammonium nitrate particles and nitric acid, which can cause visibility impairment and atmospheric deposition. Nitrogen dioxide can contribute to “brown cloud” conditions and ozone formation, and can convert to ammonium (NH<sub>4</sub>), nitrate particles (NO<sub>3</sub>), and nitric acid (HNO<sub>3</sub>). Internal combustion engines are one source of NO<sub>x</sub> emissions.

Ozone (O<sub>3</sub>) is a gaseous pollutant that is generally not emitted directly into the atmosphere but is formed in the atmosphere from complex photochemical reactions involving NO<sub>2</sub> and volatile reactive organic compounds (VOC). Sources of VOCs include automotive emissions, paint,

varnish, oil and gas operations and some types of vegetation. The faint acrid smell common after thunderstorms is caused by ozone formation by lightning. Ozone is a strong oxidizing chemical that can burn lungs and eyes, and damage plants. Ozone is a severe respiratory irritant at concentrations in excess of the federal standards.

Particulate matter (PM) refers to the small particles (i.e., soil particles, pollen, etc.) suspended in the air that settle to the ground slowly and may be re-suspended if disturbed. Ambient air particulate matter standards are based on the size of the particle. The two types of particulate matter are:

- PM<sub>10</sub> (particles with diameters less than 10 micrometers): small enough to be inhaled and capable of causing adverse health effects.
- PM<sub>2.5</sub> (particles with diameters less than 2.5 micrometers): small enough to be drawn deeply into the lungs and cause serious health problems. These particles are also the main cause of visibility impairment.

Sulfur dioxide (SO<sub>2</sub>) and sulfates (SO<sub>4</sub>) form during combustion from trace levels of sulfur in coal or diesel fuel. Sulfur dioxide also participates in chemical reactions and can form sulfates and sulfuric acid in the atmosphere.

### **3.3.2 Ozone**

Air quality in the Pinedale Field Office (PFO) meets the Wyoming Ambient Air Quality Standards (WAAQS) and the National Ambient Air Quality Standards (NAAQS), with the exception of ozone. Several of Sublette County's ambient air monitoring stations recorded ozone concentrations above the current ozone standard of 75 parts per billion (ppb) over an eight-hour period on several occasions in 2005, 2006, 2008 and 2011.

Although elevated ozone occurs throughout the year, the occurrence of UGRB high ozone events from early February to late March contrasts with the more typical summer occurrences in other areas of the United States. Winter ozone becomes elevated in the UGRB when there is a presence of ozone-forming precursor emissions including oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs) coupled with strong temperature inversions, low winds, snow cover and bright sunlight. Ozone advisories are issued by the Wyoming Department of Environmental Quality-Air Quality Division (WDEQ-AQD) when weather conditions appear conducive for the formation of ozone. Ozone levels are measured at five permanent monitoring stations in the UGRB: the Wyoming Range, Pinedale, Daniel, Boulder and Juel Spring. An additional mobile monitoring station is located at Big Piney and is the nearest ambient air monitoring site to the proposed Longshot Oil project area. The site, which began operating in March 2011, reported no exceedances of the 8-hour ozone standard from March 2011-December 2011.

On December 8, 2011, the EPA issued a letter to Wyoming's Governor Matt Mead stating that it intended to support Wyoming's recommended nonattainment area designation and boundary for the Upper Green River Basin (UGRB). On May 2, 2012, the EPA announced that it would formally designate the UGRB as a 'marginal' ozone nonattainment area, the lowest of five ratings for air pollution severity.

EPA's designation of the UGRB as a marginal ozone nonattainment area has significant implications for both currently proposed oil and gas development projects in the area as well as other future BLM management actions.

Twelve months after final designation of the nonattainment area, the BLM must comply with General Conformity regulations in 40 CFR 93 subpart B for any federal action within a designated nonattainment area. The BLM must conduct a conformity evaluation and cannot approve any action that would cause or contribute to a new violation of the NAAQS or increase the frequency or severity of any existing violation. A conformity determination must be conducted for any action where the total of direct and indirect emissions for the proposed action exceeds the de-minimus levels specified in 93.153(b). For projects located in a marginal ozone nonattainment area, this de-minimus level is 100 tons per year of VOC or NOx. The proposed action cannot be implemented until a determination of conformity is achieved.

### **3.4 GLOBAL CLIMATE CHANGE**

Climate change refers to any significant change in temperature or precipitation over an extended period (EPA 2012d). Climate change is affected by both natural processes and human activities. Human activities that influence climate change include burning of fossil fuels and changes to the natural landscape such as urbanization. These activities create and trap greenhouse gasses (GHGs) in the atmosphere which prevent heat from escaping, similar to the effects of a greenhouse (EPA 2012d).

Human activities in the Pinedale Anticline that contribute to climate change include emissions of GHGs from the development of fossil fuels, activities using combustion engines, such as motor vehicles and generators required to operate equipment and agriculture activities such as livestock grazing. GHGs have long-term climatic impacts and can influence climate for up to approximately 100 years. Therefore, increasing concentrations of GHGs are likely to accelerate the rate of climate change.

### **3.5 SOILS**

The power line alignments cross soils that have developed in a flat to steeply sloped (0%-32%), arid environment characterized by sagebrush steppe and desert shrub communities. The primary soils within the alignment generally range from loam to very fine sandy loam with sandy clay loams and saline soils also present.

Soils along the proposed power line alignments are predominantly upland soils with floodplain and bottomland soils occurring near the New Fork River or along intermittent stream beds. The following soil descriptions have been included for the primary soil types within the project area.

#### ***Forelle, Bluerim, Tigon***

The soils of this complex are moderately deep to very deep (greater than 15" to bedrock), well drained and moderately permeable. Thin coarse-loamy surface layers are common. Layers of the soil most influential to the plant community vary from 3 to 6 inches thick. Textures range from loams to very fine sandy loam.

***Diamondville, Edlin, Ryark***

These soils are mostly deep (at least 15 inches deep) and well drained. Surface layers are 5 inches or more thick in soils with sandy clay loam subsoils. The soils may or may not have a gravelly soil texture modifier.

***Westvaco***

These soils are moderately deep to very deep fine textured soils. Thin coarse-loamy surface layers are common. They are at least 15 inches deep with textures ranging from silty clay through the finer silty and sandy clay loams. Soil cracking (not severe) occurs during the dry summer months, especially where the plant cover is absent. Root penetration is somewhat restricted due to the fine textures and shallow depth of moisture penetration. Water holding capacity is high, but the surface intake is restricted which causes runoff and limited effectiveness of precipitation. Permeability is moderately slow to slow.

***Abston***

These soils commonly are at least 15 inches deep to very deep, saline and commonly sodic soils. They are composed of mostly fine alluvium sediment with excess sodium. Surface clays may disperse when wetted and inhibit infiltration. Permeability and available water capacity are also restricted.

***Yoda***

These soils are shallow (10 to 20 inches to bedrock) well-drained soils formed in alluvium, residuum or colluvium with 35-50 percent clay overlying soft shale. These soils may have the soil texture modifier of channery.

Each of these soils developed in a variety of parent materials with different vegetation communities, which often limits reclamation opportunities and presents unique challenges in controlling soil erosion and degradation (BLM 2008b). Additional emphasis would be placed on mitigation measures aimed at reducing soil erosion and the subsequent sediment input into the New Fork River watershed.

The proposed alignments would cross sensitive upland soils including soils of the Blue Rim Area, which are shallow soils occupying steeper slopes and areas of rock outcrop (BLM 2008c). Other sensitive soils include wetland areas that are intermittently flooded and/or have high water tables and saline or sodic soils of the intermittent drainages that interlace the uplands (BLM 2008c). However, floodplain and bottomland soils generally have high reclamation potential.

**3.6 VEGETATION**

The proposed distribution and transmission line routes would cross sagebrush steppe habitat where Wyoming big sagebrush, black greasewood, and saltbush are the common components. BLM spatial vegetation data identifies Wyoming big sagebrush, mixed grassland, greasewood, desert shrub and forest-dominated riparian vegetation communities in the project areas. The forested riparian vegetation communities within the proposed project areas are limited to the New Fork River riparian corridor.

A portion of the vegetation along the proposed distribution and transmission line routes is either adjacent to existing pipeline rights-of-way or other oil and gas facilities. The vegetation in these previously disturbed areas consists of perennial grasses and forbs planted for reclamation purposes. Big sagebrush shrubland comprises the majority of the vegetation along the undisturbed portions of the proposed distribution and transmission line routes. Plant species observed along the undisturbed portion of the routes include Wyoming big sagebrush, rabbitbrush and greasewood, and perennial grasses and forbs such as Indian ricegrass.

### 3.7 SENSITIVE STATUS PLANTS

The U.S. Fish and Wildlife Service (USFWS) endangered, threatened and candidate species list for Sublette County has been reviewed to determine if special status plants are potentially located within the proposed distribution and transmission line routes and substation area. The BLM Wyoming State Office list of sensitive species (BLM March 31, 2010) was also evaluated for plants with potential to occur near the proposed project alignments. BLM sensitive species are at risk species that could easily become endangered or extinct in the state. Based on habitat preferences and known geographic locations, the majority of BLM sensitive plant species are not likely to occur near the proposed pipeline alignment. Table 3-9 identifies the federally listed and BLM sensitive plant species that have potential to occur in the project area due to presence of potential habitat and review of the Wyoming Natural Diversity Database (WYNDD) information provided for the project vicinity (WYNDD January 2012).

**Table 3-9. Endangered Species Act and BLM Sensitive Plant Species Evaluated for the Proposed Action**

Common Name	Scientific Name	Status <sup>1</sup>	BLM Field Office <sup>2</sup>	Habitat	Potential Habitat in Project Area
Meadow pussytoes	<i>Antennaria arcuata</i>	S	PFO	Moist meadows, seeps, or springs surrounded by sage/grassland; 4,900-7,900.	No
Meadow Milkvetch	<i>Astragalus diversifolius</i>	S	RFO	Moist alkaline meadows and swales in sagebrush valleys; 6,500-6,620 feet (in Wyoming known to be in Great Divide Basin in Sweetwater County)	Yes
Trelease's racemose Milkvetch	<i>Astragalus racemosus</i> var. <i>treleasei</i>	S	PFO	Outwash flats or fluted badland slopes, sparsely vegetated sage; 6,500-7,500 feet	Yes
Cedar Rim Thistle	<i>Cirsium aridum</i>	S	PFO	Barren slopes, fans and draws on sandstone chalk tufaceous colluviums or clay substrates in sparse vegetated openings in big sagebrush grasslands; 5,800-7,500 feet	Possible
Large-fruited Bladderpod	<i>Lesquerella macrocarpa</i>	S	PFO	Gypsum-clay or barren hills, clay flats; 6,740-7,700 feet	Possible
Beaver Rim Phlox	<i>Phlox pungens</i>	S	PFO	Sparsely vegetated slopes of limestone, volcanic sandstone, siltstone or red-bed clays; 6,000-7,000 feet	Possible
Tufted Twinpod	<i>Physaria condensata</i>	S	PFO	Sparsely vegetated shale slopes, ridges; 6,500-7,000 feet	No

Common Name	Scientific Name	Status <sup>1</sup>	BLM Field Office <sup>2</sup>	Habitat	Potential Habitat in Project Area
Whitebark pine	<i>Pinus albicaulis</i>	S	PFO	High elevation mountainous habitat	No
Limber pine	<i>Pinus flexilis</i>	S	PFO	Lower tree line in montane forests	No
Ute ladies'-Tresses	<i>Spiranthes diluvialis</i>	T	PFO	Moist stream banks, wet meadows, abandoned stream channels, 4,500-6,800 feet	Yes

<sup>1</sup> S = BLM Sensitive, T = Federally Threatened.

<sup>2</sup> <http://www.blm.gov/wy/st/en/programs/pcp/species/sensitive.html>

Locations of sensitive plant populations near the proposed pipeline alignment were obtained from the BLM and the WYNDD. There are no recorded populations of federally listed or BLM sensitive plants within the proposed distribution and transmission line routes, but suitable habitat for two sensitive species and Ute's ladies tresses are likely present in the project vicinity.

WYNDD identified meadow milkvetch habitat likely to be found in the within one mile of the project area. However, surveys conducted to date have only found meadow milkvetch in the Great Divide Basin in Sweetwater County. No meadow milkvetch sightings were reported for surveys conducted in Sublette County (Heidel 2009). Trelease's racemose milkvetch or potential suitable habitat (per WYNDD model) was not identified by WYNDD to be within four miles of the project vicinity; however, fluted badlands habitat does occur in the Blue Rim area. Potential impacts to habitat for these species will be assessed in the EA.

Habitat suitable for Cedar Rim thistle, large fruited bladderpod or Beaver Rim phlox is reported to be present outside of the project vicinity but not within one mile of the project area. No further review will be conducted on these species in the EA.

Ute Ladies'-tresses is the only federally listed species that has suitable habitat (New Fork River riparian and floodplain area) within the project area. However, this species has not been detected in the project area and available information indicates it is not present. Further, there are no records of this species' presence in southwest Wyoming. Therefore impacts related to Ute Ladies'-tresses to be assessed in this EA will be limited to potential suitable habitat impacts.

### 3.8 NOXIOUS WEEDS AND INVASIVE SPECIES

Noxious weeds are officially designated non-native plant species that are invasive and/or have the potential to become monocultures and can cause harm to land value, native ecology, agricultural interests, wildlife habitat, livestock forage, riparian resources, and aesthetic and visual values of land.

Cheatgrass, halogeton, and Russian thistle are invasive weed species known to be present in the planning area and along the proposed distribution and transmission line routes. Although not officially designated noxious, these plants can be disruptive to native plant communities. All soil surface disturbances are vulnerable to weed invasion.

Weeds within the proposed alignments are present primarily in locations of disturbance, including roadsides, areas of oil and gas development, and heavily grazed areas. Occurrence of these weed species has a much higher probability in areas of past disturbance and varies according to basic vegetative cover type.

### 3.9 THREATENED, ENDANGERED OR CANDIDATE SPECIES/BLM SENSITIVE SPECIES

#### 3.9.1 Endangered Species Act Animal Species

Threatened and endangered species lists for Sublette County (USFWS, September 2011) have been reviewed to determine species status within the proposed project area. No federally listed species are known to occur in the project area, but those that potentially occur due to presence of suitable habitat or could occur in downstream habitats are discussed below. Candidate species that are known to occur or could occur in the project area are also addressed in this section.

**Table 3-10. Federally Listed Threatened, Endangered, and Candidate Species in Sublette County Wyoming and Their Status in the Project Area.**

Common Name	Scientific Name	Status	Status in Project Area
<b>Mammals</b>			
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	Not expected to occur. Within historic range. Potential habitat in prairie dog towns.
Canada lynx	<i>Lynx canadensis</i>	Threatened	Unlikely to occur. Lack of suitable habitat. Only potentially present during dispersal movements.
Grizzly bear	<i>Ursus arctos horribilis</i>	Threatened	Not present. Lack of suitable habitat (montane forests)
Gray wolf	<i>Canis lupus</i>	Nonessential Experimental Population	Unlikely to occur. Not known to occur in the Project Area. Potentially suitable habitat present.
North American wolverine	<i>Gulo gulo luscus</i>	Candidate	Unlikely to occur. Lack of suitable habitat. Only potentially present during dispersal movements.
<b>Birds</b>			
Whooping crane	<i>Grus americana</i>	Endangered	Not present. Lack of suitable habitat and outside of range.
Piping plover	<i>Charadrius melodus</i>	Threatened	Not present. Lack of suitable habitat and outside of range.

<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Status in Project Area</b>
Interior least tern	<i>Sternula antillarum</i>	Endangered	Not present. Lack of suitable habitat and outside of range.
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Candidate	Present
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Candidate	Not known to occur in the Project Area. Potentially suitable habitat near New Fork River.
<b>Fish</b>			
Kendall Warm Springs dace	<i>Rhinichthys osculus thermalis</i>	Endangered	Not present. Only occurs in Kendall Warm Springs.
Pallid sturgeon	<i>Scaphirhynchus albus</i>	Endangered	Not present. Lack of suitable habitat.
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	Endangered	Not present. Occurs downstream.
Bonytail	<i>Gila elegans</i>	Endangered	Not present. Occurs downstream.
Humpback chub	<i>Gila cypha</i>	Endangered	Not present. Occurs downstream.
Razorback sucker	<i>Xyrauchen texanus</i>	Endangered	Not present. Occurs downstream.

Source: USFWS 2011a, WYNDD 2012a

### ***Black-footed Ferret***

The black-footed ferret is listed as endangered by the USFWS, with non-essential experimental status given to re-introduced populations (USFWS 2008). Black-footed ferrets are obligate predators of prairie dogs and inhabit large prairie dog complexes. Black-footed ferrets were historically known to exist within the proposed project area. No observations of ferrets have been made during numerous surveys within and around the project area and ferrets are likely extirpated from the region. However, white-tailed prairie dogs occur within a portion of the proposed project area and adjacent vicinity.

The proposed 25 kV distribution and 69 kV transmission line routes pass through a portion of the Big Piney Prairie Dog Complex. Within T31N, R109W, at the proposed project's northernmost segments, several prairie dog colonies near the New Fork River are large and close to one another, providing conditions that may be more suitable for black-footed ferrets. The prairie dog towns within the Anticline area lie at the southern edge of this complex and are considered to be part of this complex. Several additional white-tailed prairie dog colonies lie approximately 3.5 miles southeast in T31N R108W. This area has been block cleared from further need to

conduct ferret surveys (USFWS 2004). However, the colonies within the Big Piney Complex in T31NR109W have not been blocked cleared and BLM has requested technical assistance consultation from USFWS in order to determine if black-footed ferret surveys are required in this area.

### ***Colorado River Fish***

The endangered Colorado pikeminnow, bonytail chub, humpback chub, and razorback sucker are not present within the proposed project areas, but do occur downstream in the Colorado River system. Before construction of the Flaming Gorge Reservoir, populations of Colorado pikeminnow and bonytail may have persisted in the Green River. WYNDD reports the endangered Colorado River squawfish as extirpated from the proposed project area and adjacent vicinity.

### ***Greater Sage Grouse***

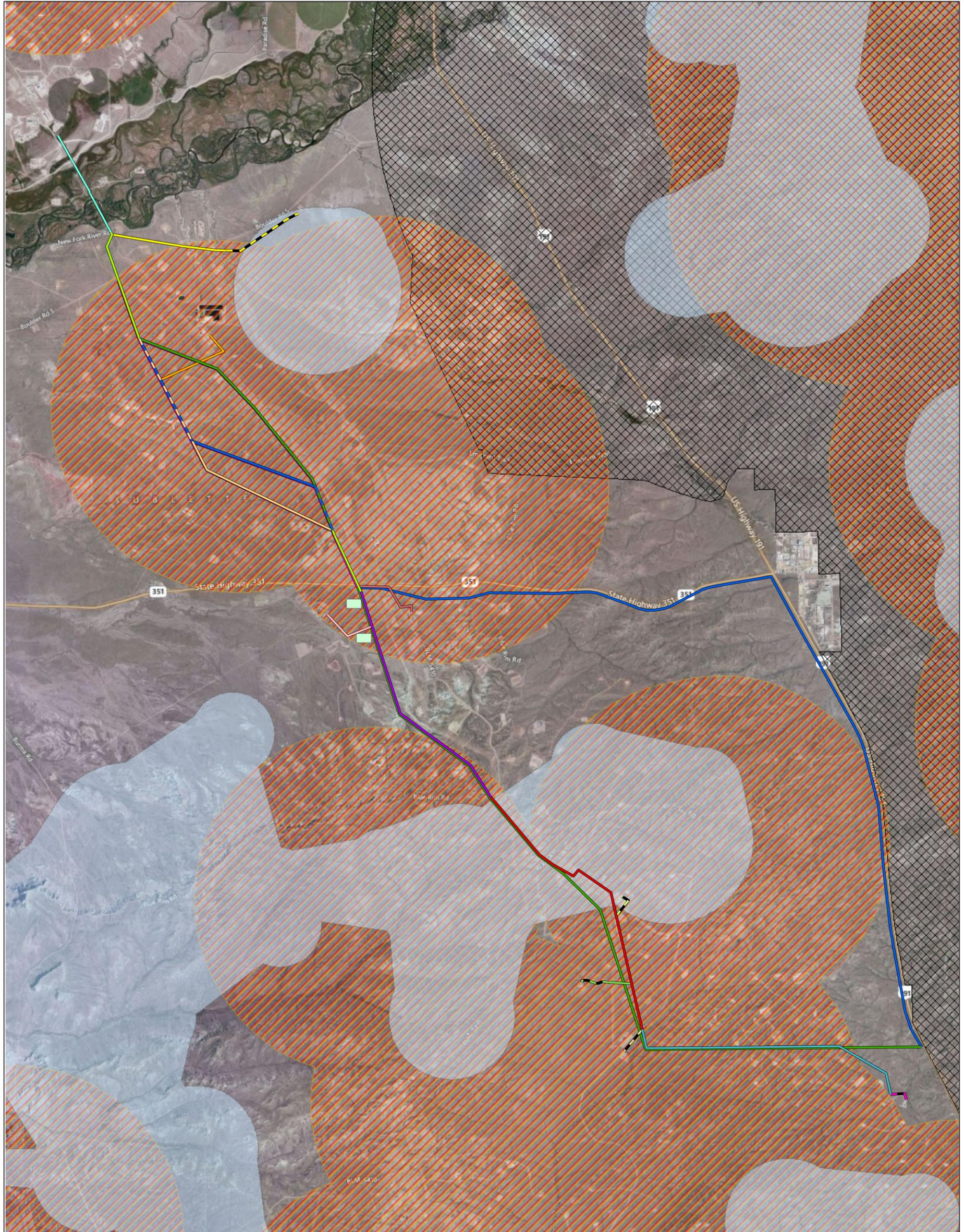
Greater sage-grouse is the predominant upland game bird in southwest Wyoming and is a candidate species for federal ESA listing. The state of Wyoming has developed a “Core Population Area” strategy to combine all statewide sage-grouse conservation efforts under the auspices of Executive Order 2011-5 in an effort to conserve sage-grouse and preclude listing sage-grouse as a threatened or endangered species. BLM recently issued a greater sage-grouse habitat management policy for BLM-administered lands in Wyoming consistent with Wyoming’s EO and BLM’s national sage-grouse habitat conservation strategy (BLM Instruction Memorandum No. WY-2012-019) that provides sage grouse policy guidance until BLM’s Wyoming Sage Grouse Management Resource Management Plan revisions are completed.

Adult male greater sage-grouse arrive first on leks, usually by mid-March, thereafter joined by sub-adult males and females. Females move to nest site vicinities generally within 4 miles of leks where they breed (Holloran 2005). Greater sage-grouse depend on a variety of sagebrush-steppe habitats throughout their life cycle and are considered obligate users of several species of sagebrush. Thus, greater sage-grouse distribution is strongly correlated with the distribution of sagebrush habitats.

Greater sage-grouse leks and winter concentration areas within and near the proposed distribution and transmission lines routes have been identified by the BLM and the WGFD, see Figure 9. Greater sage-grouse nesting and brood rearing habitat is assumed to include areas within a 2-mile radius around each active lek. Most of the 25 kV line, all of the 69 kV line, and approximately 7.5 miles of the amended 230 kV line would cross habitat within 2 miles of known leks. However, only one distribution route segment alternative and a portion of one 69 kV route alternative would parallel the outer ¼ mile buffer of one lek for several thousand feet.

The proposed electrical lines would also cross two greater sage-grouse winter concentration areas one located north of Highway 351 that abuts Boulder Road South and one south of Highway 351. Although the proposed project area does not lie within a state-designated Core Population Area, sage grouse from the Core Areas may use the winter concentration areas in the project area. The western edge of a Core Population Area lies within several hundred feet of the northern winter concentration area, while the Core Population Area lies within 1.3 to 2.5 miles

east of the southern winter concentration area with Highways 351 and 191 separating the Core Area from this winter concentration area.



**Legend**

- |                                    |                                 |  |
|------------------------------------|---------------------------------|--|
| — Segment 1 - New Fork Crossing    | — Segment 5 - Boulder 8 (OH)    | — Segment 10 - Ultra SWD (OH)            |
| — Segment 2 - Middle Crest         | — Segment 5 - Boulder 8 (UG)    | — Segment 10 - Ultra SWD (UG)            |
| — Segment 2A - Middle Crest        | — Segment 6 - Ultra CGF2 (OH)   | — Segment 12 - Plains (UG)               |
| — Segment 2AB - Middle Crest       | — Segment 6 - Ultra CGF2 (UG)   | — Segment 13 - New Field (UG)            |
| — Segment 2B - Middle Crest        | — Segment 7 - Shell Central LPF | — Anticline 69 kV Transmission           |
| — Segment 2BC - Middle Crest       | — Segment 8 - Ultra CGF3 (OH)   | — Proposed 230 kV Reroute                |
| — Segment 2C - Middle Crest        | — Segment 8 - Ultra CGF3 (UG)   | — Authorized 230 kV Route                |
| — Segment 3 - Warbonnet            | — Segment 9 - Ultra CGF4 (OH)   | — Proposed Anticline Substation          |
| — Segment 4 - Falcon               | — Segment 9 - Ultra CGF4 (UG)   | — Sage Grouse Winter Concentration Areas |
| — Segment 11 - Rainbow to Antelope |                                 | — Sage Grouse Leaks                      |
|                                    |                                 | — Sage Grouse Core Management Area       |

Reference: Imagery and map data from Bing Maps 2012.

Notes:  
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<b>Sage Grouse Habitats Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
<b>GEOENGINEERS</b>	<b>Figure 9</b>

***Yellow-billed Cuckoo***

For listing purposes, the USFWS designated yellow-billed cuckoos (*Coccyzus americanus*) in the western United States as a Distinct Population Segment (DPS) (USFWS 2011b). In Wyoming, the western DPS corresponds to that portion of the state west of the Continental Divide and the western and southern boundaries of the Great Divide Basin. The western yellow-billed cuckoo occurs in relatively large, unfragmented stands of riparian habitat that are dominated by cottonwoods and willow with a well-developed understory and occur below approximately 7,000 feet in elevation (Bennett and Keinath 2003). This species has been documented in the PFO, and specifically along the Green River at Seedska-dee National Wildlife Refuge, but no known nest sites have been recorded. The western yellow-billed cuckoo has potential to occur within the Project Area in the wooded riparian areas along the New Fork River.

**3.9.2 BLM Sensitive Animal Species**

In addition to those species listed under the ESA, the BLM has a Sensitive Species Policy and List (BLM March 2010) to focus species management efforts towards maintaining habitats under a multiple-use mandate. This list was reviewed along with BLM biological occurrence data, WYNDD database records, and literature references to determine status of each animal species along the proposed distribution and transmission line routes and a 4-mile buffer. A summary of this review is provided in Table 3-11. All sensitive species that are known to be or likely to be present in the project area are discussed below. Please note that the two sensitive species also designated as candidate species for federal listing, greater sage-grouse and yellow-billed cuckoo, are addressed in the preceding subsection and are not re-addressed in this subsection.

**Table 3-11 BLM Sensitive Animal Species Evaluated for the Proposed Action**

Common Name	Scientific Name	BLM Field Office	Habitat Association	Potential Presence
<b>Mammals</b>				
Pygmy rabbit	<i>Brachylagus idahoensis</i>	PFO	Basin-prairie and riparian shrub	Present
White-tailed prairie dog	<i>Cynomys leucurus</i>	PFO	Basin-prairie shrub, grasslands	Present
Idaho pocket gopher	<i>Thomomys idahoensis</i>	PFO	Shallow rocky soil areas in sagebrush and grasslands	Likely
Townsend big-eared bat	<i>Corynorhinus townsendii</i>		Desert shrublands, dry conifer forest near riparian areas	Likely
Spotted bat	<i>Euderma maculatum</i>		Desert, shrub-steppe and evergreen forest	Absent
Long-eared myotis	<i>Myotis evotis</i>	PFO	Conifer forest, forages over water	Absent
Fringed myotis	<i>Myotis thysanodes</i>		Grasslands, deserts and woodlands	Likely
<b>Birds</b>				
Trumpeter swan	<i>Cygnus buccinator</i>	PFO	Lakes, ponds, rivers	Present
White-faced ibis	<i>Plegadis chihi</i>	PFO	Marshes, wet meadows	Not Likely

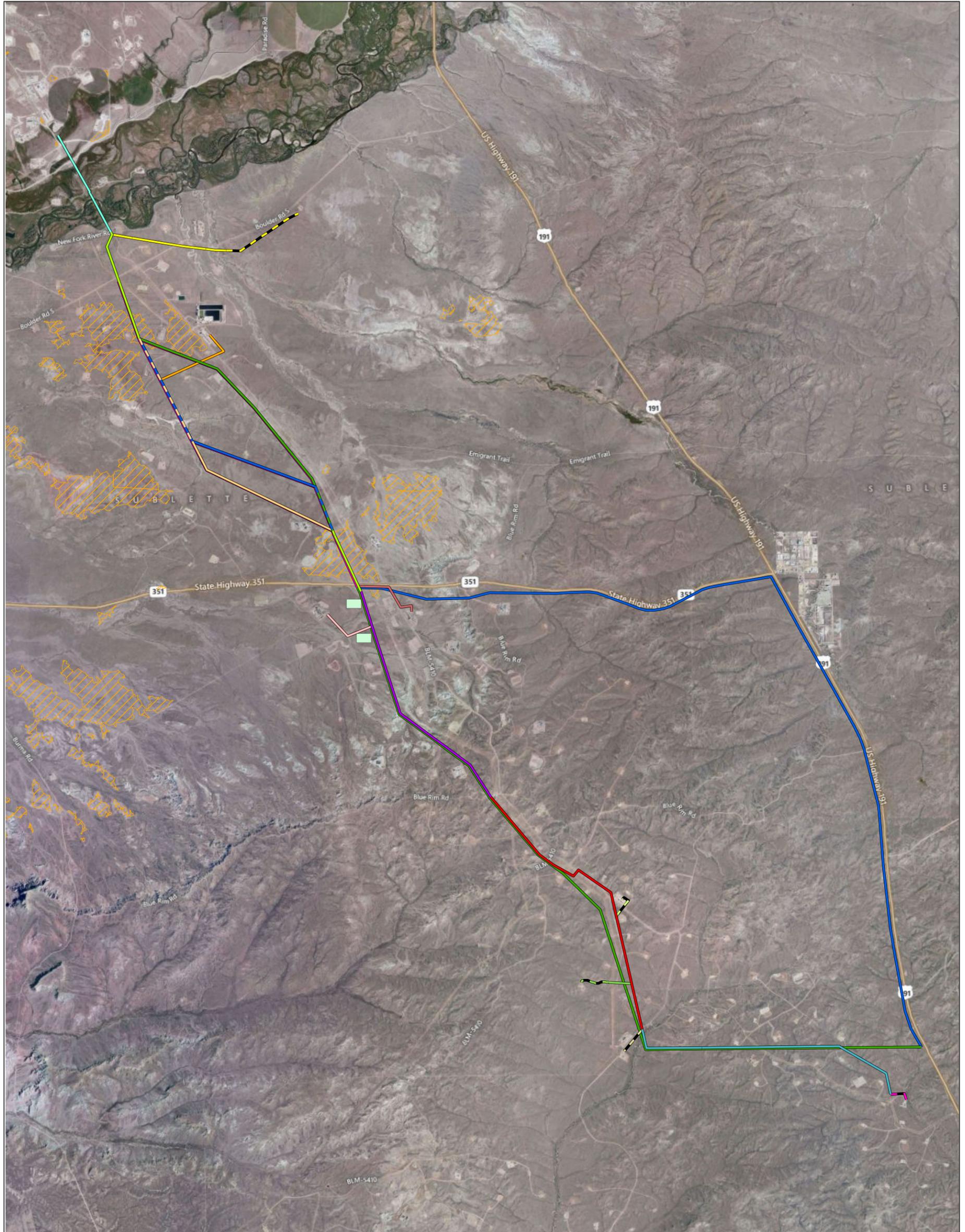
Common Name	Scientific Name	BLM Field Office	Habitat Association	Potential Presence
Bald eagle	<i>Haliaeetus leucocephalus</i>	PFO	Areas (including conifer and deciduous forests) with open water and near concentrations of winter ungulates, waterfowl, and/or fish	Present
Northern goshawk	<i>Accipiter gentilis</i>	PFO	Conifer and deciduous forests	Absent
Ferruginous hawk	<i>Buteo regalis</i>	PFO	Basin-prairie shrub, grassland, rock outcrops	Present
Peregrine falcon	<i>Falco peregrinus</i>	PFO	Tall cliffs	Absent
Long-billed curlew	<i>Numenius americanus</i>	PFO	Grasslands, plains, foothills, wet meadows	Present
Mountain plover	<i>Charadrius montanus</i>	PFO	Mixed grass prairie and short-sagebrush plains. Often associated prairie dog towns.	Present
Burrowing owl	<i>Athene cunicularia</i>	PFO	Grasslands, basin-prairie shrub	Present
Sage thrasher	<i>Oreoscoptes montanus</i>	PFO	Basin-prairie shrub, mountain-foothill shrub	Present
Loggerhead shrike	<i>Lanius ludovicianus</i>	PFO	Basin-prairie shrub, mountain-foothill shrub	Present
Brewer's sparrow	<i>Spizella breweri</i>	PFO	Basin-prairie shrub	Present
Sage sparrow	<i>Amphispiza belli</i>	PFO	Basin-prairie shrub, mountain-foothill shrub	Present
<b>Fish</b>				
Bluehead sucker	<i>Catostomus discobolus</i>	PFO	Bear, Snake, and Green river drainages, all waters	Likely
Flannelmouth sucker	<i>Catostomus latipinnis</i>	PFO	Colorado River drainage, large rivers, streams, and lakes	Absent
Roundtail chub	<i>Gila robusta</i>	PFO	Green and Little Snake river drainages	Likely
Colorado River cutthroat trout	<i>Oncorhynchus clarki pleuriticus</i>	PFO	Colorado River drainage, clear mountain streams	Likely
<b>Reptiles/Amphibians</b>				
Northern leopard frog	<i>Lithobates (Rana) pipiens</i>	PFO	Beaver ponds, permanent water in plains and foothills	Present
Boreal toad	<i>Bufo boreas boreas</i>	PFO	Pond margins, wet meadows, riparian areas	Absent

### ***Pygmy Rabbit***

Pygmy rabbits are typically found in dense stands of big sagebrush in deep, loose soils (Keinath and McGee 2004). Pygmy rabbits are vulnerable to avian predators, so shrub cover and access to burrows are important to them. Pygmy rabbits have been documented in the project area and adjacent vicinity.

### ***White-tailed Prairie Dog***

White-tailed prairie dogs are typically found in Wyoming at elevations ranging between 5,000 and 10,000 feet in desert and shrub grasslands (Keinath 2004). Prairie dog towns provide important benefits to these ecosystems, and other sensitive species, such as burrowing owls and black-footed ferrets, rely on them. The larger the towns and near proximity to other active towns, the greater the suitability of the prairie-dog prey base for active predators such as black-footed ferrets and raptors. As discussed above in the black-footed subsection, white-tailed prairie dog colonies occur in portions of the northern section of the proposed project area, see Figure 10. The southern end of the Big Piney Prairie Dog complex extends into this area.



**Legend**

- |                                    |                                 |                                |
|------------------------------------|---------------------------------|--------------------------------|
| — Segment 1 - New Fork Crossing    | — Segment 5 - Boulder 8 (OH)    | — Segment 10 - Ultra SWD (OH)  |
| — Segment 2 - Middle Crest         | — Segment 5 - Boulder 8 (UG)    | — Segment 10 - Ultra SWD (UG)  |
| — Segment 2A - Middle Crest        | — Segment 6 - Ultra CGF2 (OH)   | — Segment 12 - Plains (UG)     |
| — Segment 2AB - Middle Crest       | — Segment 6 - Ultra CGF2 (UG)   | — Segment 13 - New Field (UG)  |
| — Segment 2B - Middle Crest        | — Segment 7 - Shell Central LPF | — Anticline 69 kV Transmission |
| — Segment 2BC - Middle Crest       | — Segment 8 - Ultra CGF3 (OH)   | — Proposed 230 kV Reroute      |
| — Segment 2C - Middle Crest        | — Segment 8 - Ultra CGF3 (UG)   | — Authorized 230 kV Route      |
| — Segment 3 - Warbonnet            | — Segment 9 - Ultra CGF4 (OH)   | — Anticline_Substation         |
| — Segment 4 - Falcon               | — Segment 9 - Ultra CGF4 (UG)   | — Prairie Dog Colonies         |
| — Segment 11 - Rainbow to Antelope |                                 |                                |

Reference: Imagery and map data from Bing Maps 2012.

**Notes:**

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<b>White-Tailed Prairie Dogs Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
<b>GEOENGINEERS</b>	<b>Figure 10</b>

### ***Idaho Pocket Gopher***

The Idaho pocket gopher is endemic to southwestern Wyoming and southeastern Idaho and favors shallow rocky sagebrush, sage-grasslands, and mountain meadow habitats (Beauvais and Dark-Smiley 2005). Pocket gopher burrow systems are typically found in areas with high yields of succulent forbs with fleshy roots. Suitable habitat for the Idaho pocket gopher is present in the project area, but Idaho pocket gophers have not been documented in the project area.

### ***Bats***

Suitable foraging habitat for Townsend big-eared bats and the fringed myotis occurs in the project vicinity. However, sites, such as caves and abandoned mines, used by these species for hibernacula are not present in the project vicinity. If any bats are present in the project area, it is expected they would only be present during nocturnal foraging flights and migratory movements. The potential for bats to occur in the project area outside of the New Fork River riparian area is thought to be low.

### ***Trumpeter Swan***

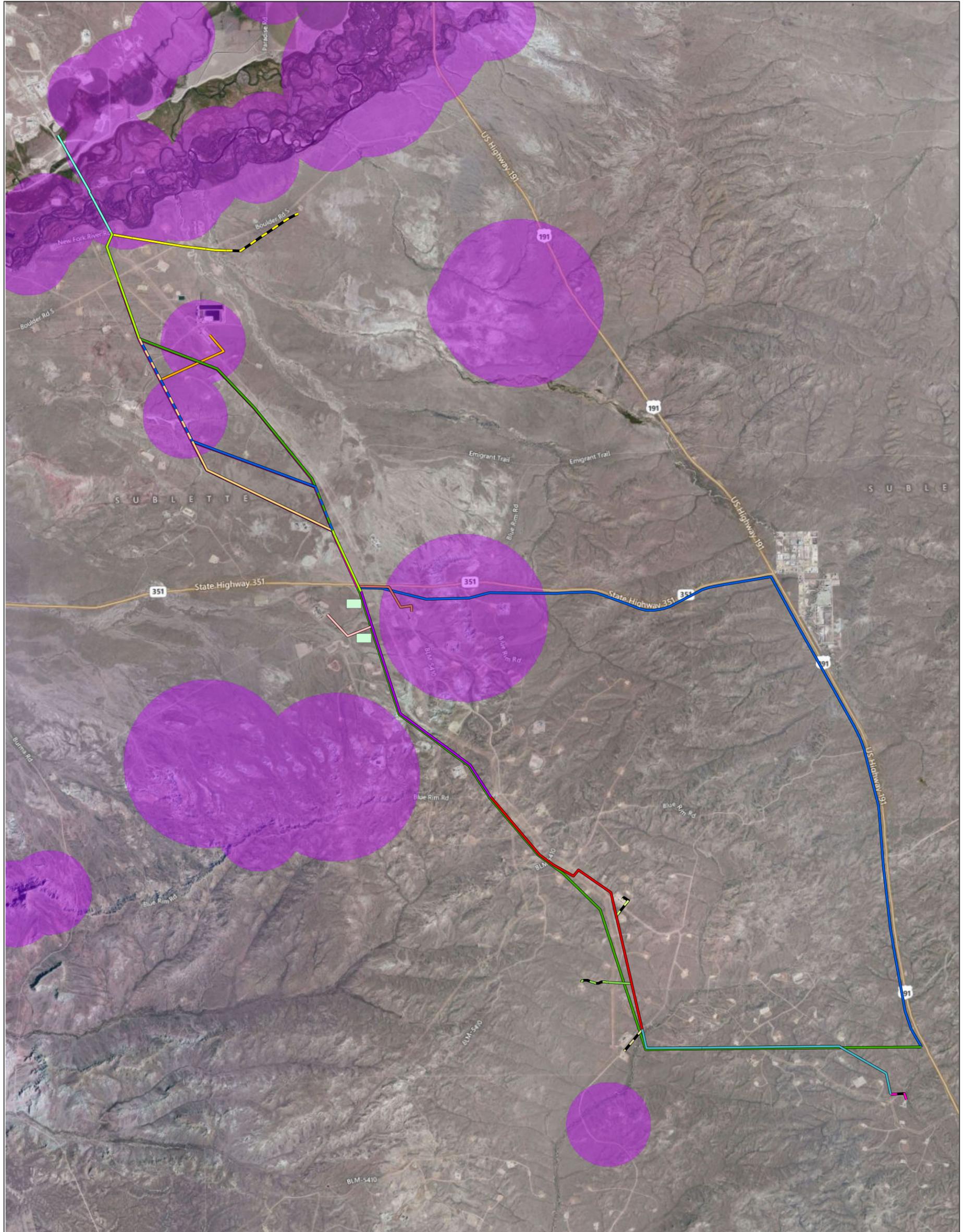
Trumpeter swans, utilize only the New Fork River riparian corridor in the project area. Trumpeter swans nest in clear, quiet, ponded water bodies with relatively static water levels (Travsky and Beauvais 2004). The upper Green River basin supports a small breeding population of trumpeter swans (Cerovski 2007). But suitable nesting areas are not present in the project area. Therefore, use of the project area by trumpeter swans is limited to foraging in the New Fork River riparian corridor.

### ***Sensitive Raptors***

The New Fork River riparian corridor supports numerous nesting raptors including bald eagles. Active bald eagle nest sites are known to occur approximately 1.7 miles downstream of the proposed 25 kV crossing of the New Fork River. Wintering bald eagle roosts are located at least 4 miles from the project area.

Ferruginous hawks inhabit open environments such as grasslands, shrub steppe and cold deserts (Travsky and Beauvais 2005). The hawks will nest in trees, large shrubs, elevated landforms, utility poles, or directly on the ground. Several ferruginous hawk nests lies approximately 1.1 mile from the proposed project area south of Highway 351 and one nest has been documented approximately 1.8 miles downstream from the proposed 25 kV line New Fork River crossing.

Burrowing owls use a variety of arid and semi-arid landscapes. Open areas with sort vegetation are preferred nesting and roosting habitat while areas supporting taller vegetation may be preferred hunting areas (Lantz, Smith and Keinath 2004). Burrowing owls associate themselves with prairie dog colonies where they use the prairie dog burrows for nesting. Two currently active burrowing owls nests are known to occur very near the project area north of Highway 351 in or near documented white-tail prairie dog colonies. See Figure 11 for raptor nesting areas.



**Legend**

- |                                  |                               |                               |
|----------------------------------|-------------------------------|-------------------------------|
| Segment 1 - New Fork Crossing    | Segment 5 - Boulder 8 (OH)    | Segment 10 - Ultra SWD (OH)   |
| Segment 2 - Middle Crest         | Segment 5 - Boulder 8 (UG)    | Segment 10 - Ultra SWD (UG)   |
| Segment 2A - Middle Crest        | Segment 6 - Ultra CGF2 (OH)   | Segment 12 - Plains (UG)      |
| Segment 2AB - Middle Crest       | Segment 6 - Ultra CGF2 (UG)   | Segment 13 - New Field (UG)   |
| Segment 2B - Middle Crest        | Segment 7 - Shell Central LPF | Anticline 69 kV Transmission  |
| Segment 2BC - Middle Crest       | Segment 8 - Ultra CGF3 (OH)   | Proposed 230 kV Reroute       |
| Segment 2C - Middle Crest        | Segment 8 - Ultra CGF3 (UG)   | Authorized 230 kV Route       |
| Segment 3 - Warbonnet            | Segment 9 - Ultra CGF4 (OH)   | Proposed Anticline Substation |
| Segment 4 - Falcon               | Segment 9 - Ultra CGF4 (UG)   |                               |
| Segment 11 - Rainbow to Antelope |                               |                               |

Reference: Imagery and map data from Bing Maps 2012.

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<b>Sage Grouse Habitats Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
	<b>Figure 11</b>

### ***Long-billed Curlew***

Locally dense populations of long-billed curlew occur in northern Sublette County with the largest breeding population in Wyoming found in the upper Green River basin between Merna and Pinedale along the Horse Creek and New Fork River (Dark-Smiley and Keinath 2004). Long-billed curlews feed in open prairie habitat and nest primarily in short grass or mixed grass prairie habitat. Long-billed curlews have been documented in the project vicinity associated with low herbaceous vegetation.

### ***Mountain Plover***

Mountain plovers prefer open expanses that offer excellent horizontal visibility including flat tablelands, prairie dog colonies, agricultural fields, short grass habitat, short sagebrush plains, or heavily grazed sites (Smith and Keinath 2004a). Mountain plovers are often associated with prairie dog colonies and have been documented in the project vicinity.

### ***Loggerhead Shrike***

Loggerhead shrikes prefer open habitat, such as grasslands, sagebrush and shrub-steppe, with scattered trees or large shrubs that offer abundant insect prey and perches for hunting (Keinath and Schmeider 2005). Loggerhead shrike are known to occur in the project vicinity.

### ***Sagebrush Dependent Songbirds***

The sage thrasher, Brewer's sparrow and sage sparrow have all been documented in the sagebrush habitat in the project area. The sage thrasher is a sagebrush-steppe obligate species that depends on large expanses of sagebrush steppe, typically dominated by big sagebrush, for breeding (Buseck, Keinath and McGee 2004). The sage sparrow prefers large, contiguous areas of tall and dense sagebrush unlike the seral mosaics and patchy shrublands preferred by Brewer's sparrow and sage grouse. The Brewer's sparrow reportedly prefers relatively flat stands of sagebrush in different seral stages with late-seral stands present throughout for breeding (Hansley and Beauvais 2004). The presence of Brewer's sparrow is negatively correlated with percent grass cover, small shrubs, shrub species diversity and rocky rolling ground surface.

### ***Sensitive Fish Species***

Bluehead suckers occur in the upper Green River and its tributaries within the PFO management area (BLM 2007 draft EIS for RMP). Roundtail chub are most commonly found in pool-riffle habitats of Colorado River basin streams (WGFD - Wyoming State Wildlife Action Plan 2010). Colorado River cutthroat trout are found in the Green River, Black's Fork and Little Snake River drainages in Wyoming (WGFD - Wyoming State Wildlife Action Plan 2010). Some of the healthiest populations in Wyoming occur in the Wyoming Range of Sublette County.

### ***Northern Leopard Frog***

The northern leopard frog overwinters in lakes, streams, and ponds; adults feed in upland areas in the summer; and tadpoles rear in shallow ponds (Smith and Keinath 2004b). The northern leopard frog could occur in the project area along the New Fork River riparian corridor and adjacent to other open water habitat present in the project area, such as the impounded wet areas identified on the area National Wetland Inventory maps as discussed in Section 3.13.

### **3.10 WILDLIFE AND AQUATIC RESOURCES**

Wildlife species known to occur on lands that would be crossed by the proposed distribution and transmission line alignments and substation footprint include a variety of common mammals, aquatic species, and migratory birds common to sagebrush-steppe, grassland, and wetland riparian community types including those listed in the previous sensitive species section.

#### **3.10.1 Big Game**

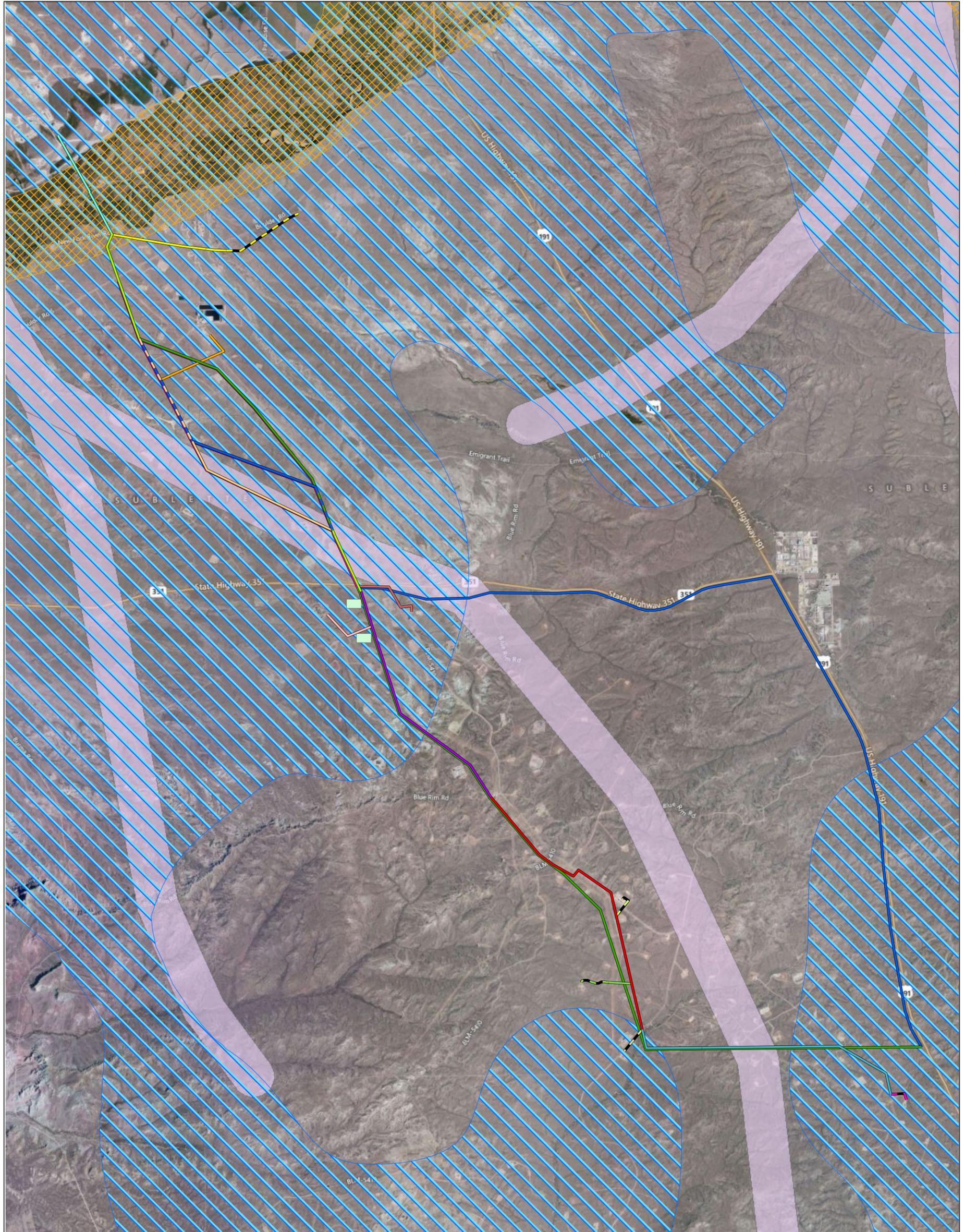
The proposed project area would be located in vital seasonal use areas for moose and pronghorn. Pronghorn in the project area are part of the Sublette North Herd Unit.

##### ***Pronghorn***

The northern ends of the 25 kV distribution line route (Segments 1, 2 and 5) and the 69 kV transmission line route would cross both crucial winter and yearlong pronghorn (Sublette herd unit) ranges near the New Fork River, see Figure 12. The alignments would also cross mapped pronghorn seasonal migration routes at two locations. The southern section of the amended 230 kV line and Segment 11 of the 25 kV line would cross the mapped pronghorn migration corridor. The southern end of the 25 kV line Segment 2 and the Segment 2C alternative would also cross this mapped corridor. However, the Segment 2 B alternative would not cross the mapped migration corridor.

##### ***Moose***

Moose from the Sublette Herd Unit are known to use the New Fork River riparian areas. Crucial winter-yearlong habitat for the moose Sublette herd unit along the New Fork River would be crossed by the proposed 25 kV line, see Figure 12.

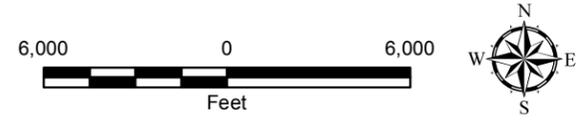


**Legend**

- |                                    |                                 |                                 |
|------------------------------------|---------------------------------|---------------------------------|
| — Segment 1 - New Fork Crossing    | — Segment 5 - Boulder 8 (OH)    | — Segment 10 - Ultra SWD (OH)   |
| — Segment 2 - Middle Crest         | — Segment 5 - Boulder 8 (UG)    | — Segment 10 - Ultra SWD (UG)   |
| — Segment 2A - Middle Crest        | — Segment 6 - Ultra CGF2 (OH)   | — Segment 12 - Plains (UG)      |
| — Segment 2AB - Middle Crest       | — Segment 6 - Ultra CGF2 (UG)   | — Segment 13 - New Field (UG)   |
| — Segment 2B - Middle Crest        | — Segment 7 - Shell Central LPF | — Anticline 69 kV Transmission  |
| — Segment 2BC - Middle Crest       | — Segment 8 - Ultra CGF3 (OH)   | — Proposed 230 kV Reroute       |
| — Segment 2C - Middle Crest        | — Segment 8 - Ultra CGF3 (UG)   | — Authorized 230 kV Route       |
| — Segment 3 - Warbonnet            | — Segment 9 - Ultra CGF4 (OH)   | — Proposed Anticline Substation |
| — Segment 4 - Falcon               | — Segment 9 - Ultra CGF4 (UG)   | — Moose Winter Range            |
| — Segment 11 - Rainbow to Antelope |                                 | — Antelope Winter Range         |
|                                    |                                 | — Antelope Migration            |

Reference: Imagery and map data from Bing Maps 2012.

Notes:  
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**Big Game Migration and Crucial Winter Range  
Anticline Electrification Project**

Rocky Mountain Power  
Sublette County, Wyoming

**GEOENGINEERS** 

**Figure 12**

### **3.10.2 Non-special Status Wildlife Species**

Most nongame reptiles, birds, and mammals likely to occur in the project area are expected within sagebrush steppe, the most extensive vegetation cover type in the area. However, the nongame species are also expected to utilize other available vegetation. There are some species of birds and mammals that are likely to inhabit only specific vegetation-based habits, particularly riparian forest and shrub.

The New Fork River riparian area and upland shrub-steppe habitat supports numerous documented raptor nests including red tail hawk, Swainson's hawk, American kestrel, northern harrier, golden eagle, and great horned owls. Small mammals that could be expected to be found in the sagebrush communities crossed by the project include desert cottontail, white-tailed jackrabbit, badger, and Wyoming ground squirrel. Birds expected to be commonly found in the project area shrub steppe habitat include horned larks, vesper sparrows, lark buntings, and Brewer's blackbirds. The dry shrublands could also support sagebrush lizards and eastern short-horned lizards.

Numerous non-special status raptor species also nest in the New Fork River riparian area. The closest documented golden eagle nest lies approximately 1.25 miles upstream of the proposed river crossing. Currently, there are also two red-tailed hawk nests, one American kestrel nest and one northern harrier nest documented within 0.5 mile of the project area river crossing.

Beaver, muskrat, meadow vole, tiger salamander, and inter-mountain wandering garter snake could inhabit the New Fork River and associated riparian habitat. Additional bird species likely to frequent the riparian area include the sandhill crane, osprey, great blue heron, American bittern, song sparrow, kill deer, sand pipers, and Bullock oriole. Migratory and breeding waterfowl that frequent the New Fork River and associated floodplain include numerous duck species including mallard duck and ring-necked ducks, common goldeneye, bufflehead, teal, mergansers, and geese.

### **3.10.3 Aquatic Resources**

The New Fork River has a Wyoming Trout Stream Category of "blue" meaning it is of nationwide importance to anglers and produce greater than 900 fish per mile (WGFD 2011). The New Fork River is managed primarily as wild brown trout fisheries. Other fish found in this river include brook trout, rainbow trout, and mountain white fish. Kokanee and the occasional Snake River cutthroat trout are also found in the New Fork River.

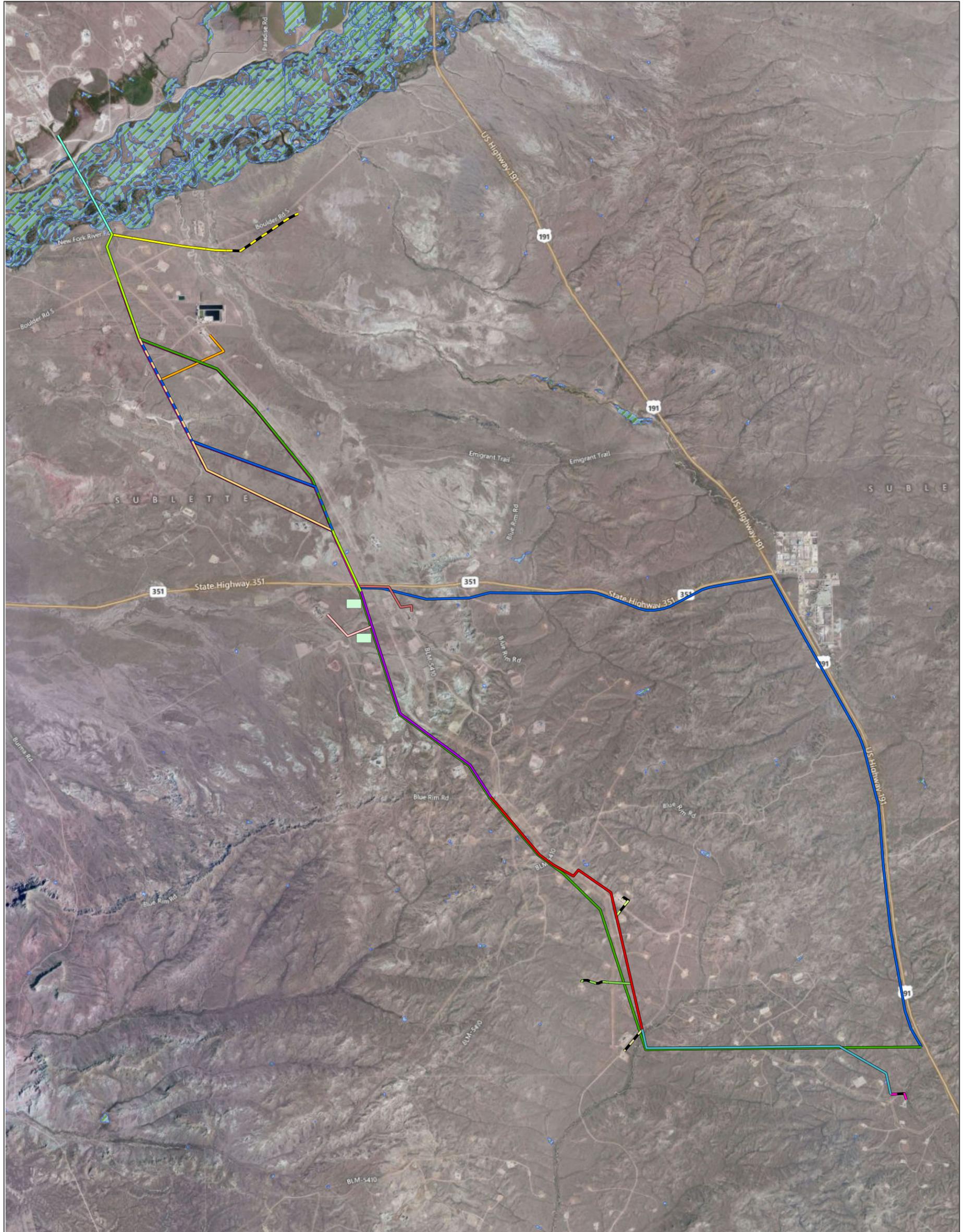
## **3.11 WETLANDS, RIPARIAN RESOURCES AND FLOODPLAINS**

Riparian and wetland communities represent the transitional zone between aquatic and terrestrial ecosystems and are dependent on periodic hydrological influxes. They are often associated with perennial and intermittent streams and occur around springs and seeps. These communities are highly productive providing important resources for wildlife and livestock.

Supporting lush vegetation, soils in these riparian and wetland areas are usually deep loams with a high percentage of organic matter. Wetland and riparian areas serve a wide variety of purposes

including aquifer recharge, flood attenuation, flow moderation, water filtration, wildlife and stock forage, and stream bank stabilization.

Wetlands, floodplains, and riparian areas within the proposed distribution and transmission lines routes are mainly associated with the New Fork River as identified in U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) maps, see Figure 13. Most drainages in the project area are intermittent and likely do not support seasonally hydrology sufficient to be categorized as wetland habitat. There are several other small wetland areas mapped in the general project area many of which are identified as being temporarily flooded diked/impounded features that may be used as cattle watering ponds. Others likely represent seasonal drainages. NWI data is course and wetland perimeters and locations are approximate. Wetland areas would be identified on the ground before construction.



**Legend**

- |                                    |                                 |                                |
|------------------------------------|---------------------------------|--------------------------------|
| — Segment 1 - New Fork Crossing    | — Segment 5 - Boulder 8 (OH)    | — Segment 10 - Ultra SWD (OH)  |
| — Segment 2 - Middle Crest         | — Segment 5 - Boulder 8 (UG)    | — Segment 10 - Ultra SWD (UG)  |
| — Segment 2A - Middle Crest        | — Segment 6 - Ultra CGF2 (OH)   | — Segment 12 - Plains (UG)     |
| — Segment 2AB - Middle Crest       | — Segment 6 - Ultra CGF2 (UG)   | — Segment 13 - New Field (UG)  |
| — Segment 2B - Middle Crest        | — Segment 7 - Shell Central LPF | — Anticline 69 kV Transmission |
| — Segment 2BC - Middle Crest       | — Segment 8 - Ultra CGF3 (OH)   | — Proposed 230 kV Reroute      |
| — Segment 2C - Middle Crest        | — Segment 8 - Ultra CGF3 (UG)   | — Authorized 230 kV Route      |
| — Segment 3 - Warbonnet            | — Segment 9 - Ultra CGF4 (OH)   | — Anticline_Substation         |
| — Segment 4 - Falcon               | — Segment 9 - Ultra CGF4 (UG)   | — National Wetlands Inventory  |
| — Segment 11 - Rainbow to Antelope |                                 |                                |

Reference: Imagery and map data from Bing Maps 2012.

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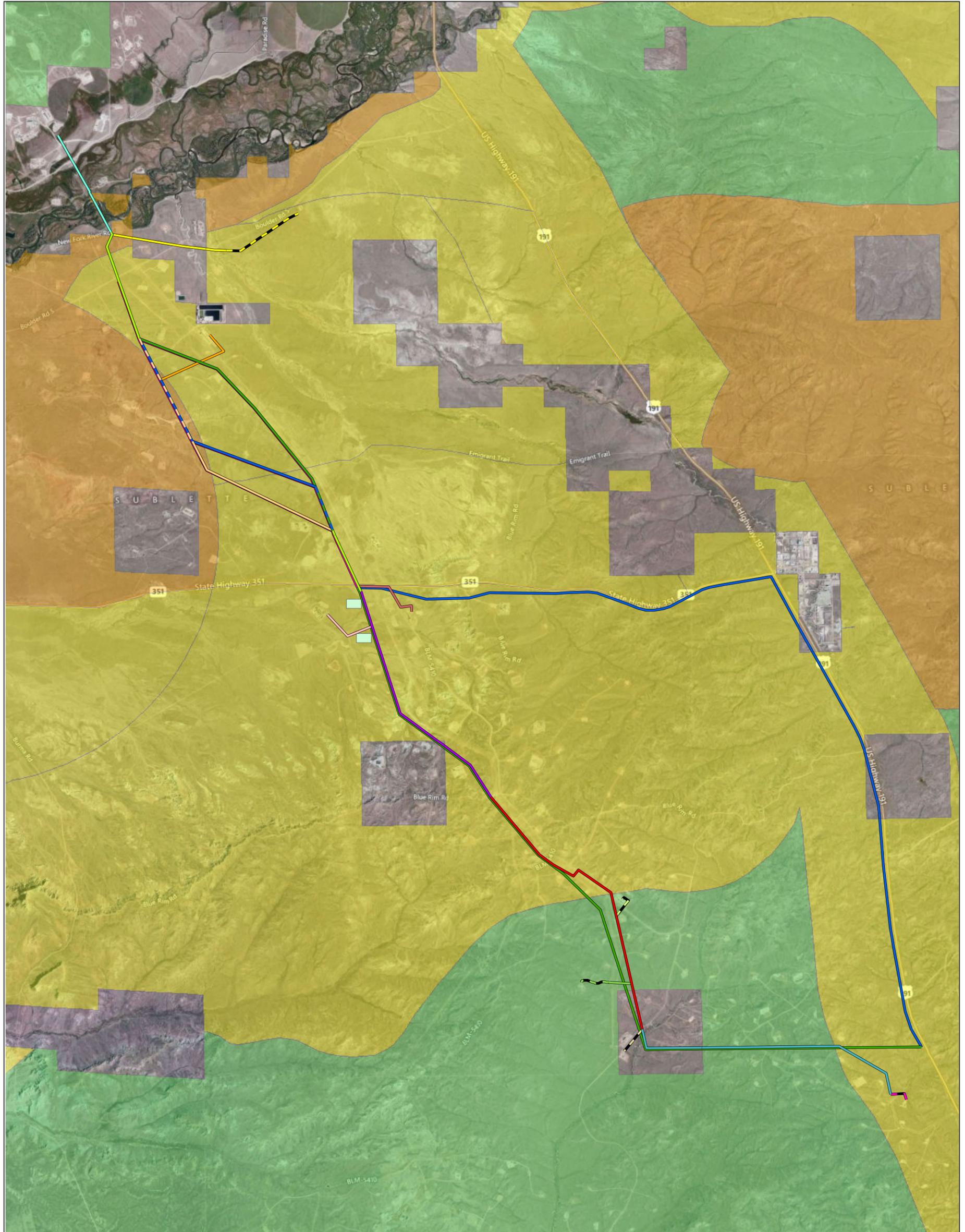


<b>National Wetlands Inventory Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
<b>GEOENGINEERS</b> 	<b>Figure 13</b>

### **3.12 VISUAL RESOURCES**

The BLM is responsible for managing public lands for multiple uses while ensuring that the scenic values and open space character of the public lands are considered before authorizing actions on public lands. The BLM accomplishes this through the Visual Resource Management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or observation points. VRM classes are used to identify the degree of acceptable visual change within a landscape based on the physical and sociological characteristics: Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of least value.

The proposed alignments would cross three VRM classes on BLM administered public lands, see Figure 14: Class II, Class III and Class IV, see Table 3-12. The disturbance for the power lines in all VRM classes would be centrally located within the Pinedale Anticline Oil and Gas development area. The following table contains the distances of each alignment and route option by VRM class.



**Legend**

- |                                  |                               |                              |
|----------------------------------|-------------------------------|------------------------------|
| Segment 1 - New Fork Crossing    | Segment 5 - Boulder 8 (OH)    | Segment 10 - Ultra SWD (OH)  |
| Segment 2 - Middle Crest         | Segment 5 - Boulder 8 (UG)    | Segment 10 - Ultra SWD (UG)  |
| Segment 2A - Middle Crest        | Segment 6 - Ultra CGF2 (OH)   | Segment 12 - Plains (UG)     |
| Segment 2AB - Middle Crest       | Segment 6 - Ultra CGF2 (UG)   | Segment 13 - New Field (UG)  |
| Segment 2B - Middle Crest        | Segment 7 - Shell Central LPF | Anticline 69 kV Transmission |
| Segment 2BC - Middle Crest       | Segment 8 - Ultra CGF3 (OH)   | Proposed 230 kV Reroute      |
| Segment 2C - Middle Crest        | Segment 8 - Ultra CGF3 (UG)   | Authorized 230 kV Route      |
| Segment 3 - Warbonnet            | Segment 9 - Ultra CGF4 (OH)   | Anticline Substation         |
| Segment 4 - Falcon               | Segment 9 - Ultra CGF4 (UG)   | VRM Class 1                  |
| Segment 11 - Rainbow to Antelope |                               | VRM Class 2                  |
|                                  |                               | VRM Class 3                  |
|                                  |                               | VRM Class 4                  |

Reference: Imagery and map data from Bing Maps 2012.

**Notes:**

- The locations of all features shown are approximate.
- This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.



<b>Visual Resource Management Anticline Electrification Project</b>	
Rocky Mountain Power Sublette County, Wyoming	
	<b>Figure 14</b>

**Table 3-12. VRM Classes by Alignment and Route Option**

<b>Alignment</b>	<b>VRM Class II</b>	<b>VRM Class III</b>	<b>VRM Class IV</b>
25 kV (Route Option 2A)	3,240 ft	77,259 ft	19,528 ft
25 kV (Route Option 2B)	9,888 ft	73,921 ft	19,528 ft
25 kV (Route Option 2C)	11,485 ft	71,908 ft	19,528 ft
69 kV (Route Option A)	0 ft	25,666 ft	0 ft
69 kV (Route Option B)	6,592 ft	19,644 ft	0 ft
69 kV (Route Option C)	8,180 ft	17,640 ft	0 ft
Proposed 230 kV Reroute	0 ft	29,705 ft	14,751 ft
Authorized 230 kV Route	0 ft	52,062 ft	0 ft

The BLM Manual 8431, Visual Resource Contrast Rating, provides the following management objectives for these VRM classes (BLM 1986):

**Class II Objective:** The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

**Class III Objective:** The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

**Class IV Objective:** The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impacts of these activities through careful location, minimal disturbance, and repeating the basic elements.

VRM Class II lands would be crossed at the northern portion of the alignment, adjacent to the New Fork River and near the Lander Road. These lands are classified as such because of their cultural importance and / or riparian characteristics, such as floodplains and adjacent uplands on either side of each river; all of which can be considered relatively unique to the area. However, the project would cross non-contributing segments of the Lander Road and Wagner's Variant, which are not considered VRM Class II lands. VRM Class III lands would be crossed from roughly Boulder South Road across Highway 351 to approximately 1.7 miles north of the Falcon Compressor Station site and the eastern end of the alignment within one mile of Highway 191. VRM Class IV lands would be crossed by the remainder of the proposed alignments.

### **3.13 RECREATIONAL RESOURCES**

Sublette County's location makes it a gateway to Yellowstone and Grand Teton National Parks; however, the unique attributes within the County make it an attractive destination for recreational. Recreation near the proposed action is primarily associated with fishing opportunities on the New Fork River. With access for drift boats and several wade fishing locations, this river is a popular fishing destination for individual anglers and commercially guided trips.

A primary factor in the amount of recreational use in Sublette account, other than visitors from outside the region, is the high rate of growth within the Pinedale area. Natural gas development and other industrial and commercial support businesses have contributed to the expanding demand for outdoor recreation access and use. This development within the PAPA has also brought about impacts to recreation including visual obstructions within the New Fork River floodplain and on the surrounding hills. It is generally assumed that areas once commonly used for benefits-based recreation will be avoided when the landscape and its qualities are changed by development. Noise, odor, increased traffic, dust, changes in setting, and other competing factors from development are typically considered intrusive and recreationists will usually avoid such areas (BLM 2008c).

BLM manages public lands for developed recreation resources, such as camp sites and public land access fishing spots. The closest developed camp site to the proposed alignments is the New Fork River Campground located approximately 4.5 miles west of the northern portion of the proposed alignments adjacent to Paradise Road. This popular camp site provides the recreating public with a boat launch site, restrooms, several primitive camp sites, and pedestrian access to the New Fork River for swimming and fishing.

BLM lands in the vicinity are also available for hunting. Hunting is an important part of the regional economy, as it is one of the most popular recreational activities in the region. As such, the WGFD administers hunting permits and monitors use within the hunt areas that are fully and partially located on BLM lands. The presence and variety of wildlife, especially big game, are the primary draw for hunters to the area. Big game hunting permits are issued for pronghorn, mule deer, moose, elk, and some white-tailed deer. Table 3-13 provides big and trophy game species harvest, hunt area, and hunting season for each species.

**Table 3-13. Big and Trophy Game Species Harvest, Hunt Area and Season for 2010**

Species	Hunt Area	Hunter Days	Active/License Hunters	Total Harvest	Season
Pronghorn	87 (Pinedale)	2,934	840	875	Sept. 1 – Oct. 31
Pronghorn	90 (Yellow Point)	2,710	862	855	Sept. 1 – Oct. 31
Mule deer	138 (Boulder)	2,409	531	217	Sept. 15 – Nov. 15
Mule deer	139 (Pinedale)	1,800	332	95	Sept. 15 – Nov. 15
White-tailed deer	138 (Boulder)	180	72	7	Sept. 15 – Nov. 15
White-tailed deer	139 (Pinedale)	126	59	11	Sept. 15 – Nov. 15
Elk	97 (Pinedale)	2,799	466	118	Sept. 20 – Dec. 31
Elk	98 (Boulder)	4,621	764	228	Sept. 20 – Dec. 31
Moose	4 (Pinedale)	65	14	10	Oct. 1 – Oct. 31

#### **4.0 ENVIRONMENTAL EFFECTS**

##### *Direct and Indirect Effects*

An environmental impact is defined as a change in the quality or quantity of a given resource as a result of a modification in the existing environment resulting from project-related activities. Beneficial or adverse impacts may be a primary result (direct) or secondary result (indirect) of an action and may be permanent and long term or temporary. Narrative descriptions of potential impacts resulting from the Proposed Action, the No Action Alternative, and Alternatives III and IV are discussed for each environmental resource in Sections 4.1 through 4.13.

##### *Cumulative Effects*

Environmental impacts may accumulate either over time or in combination with similar events within and surrounding the project area. A cumulative impact is defined as the impact to the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (RFFAs) regardless of what agency (federal or non-federal) or person undertakes such actions (40 CFR 1508.7). Principal actions that are considered in the evaluation of the cumulative impacts are those that have affected the same resources and for which the effect is still residual in the environment.

Power requests from existing and future oil and natural gas development facilities in the Pinedale Anticline Oil and Gas Field would be the primary RFFA associated with the proposed action. Cumulative impacts as a result of oil and natural gas development have been fully analyzed in the PAPA SEIS (BLM 2008c). The following cumulative impacts assessments include the impacts associated with further expansion of the 25 kV distribution system to supply power to additional oil and gas facilities in the Anticline field.

#### **4.1 CULTURAL RESOURCES/ NATIVE AMERICAN RELIGIOUS CONCERNS/ HISTORIC TRAILS**

##### **4.1.1 Impact Criteria**

The Pinedale RMP ROD has developed management objectives designed to protect significant historic, archaeological, and other culturally sensitive resources from damage or destruction and facilitate suitable scientific, educational, and recreational uses of cultural resources (BLM 2008b). Of particular concern, per the RMP ROD, are the Lander Trail (also known as the

Lander Road) and Wagner's Variant of the trail, and other significant historic transportation sites and Native American traditional use areas and sacred places, with concerns extending to any historically intact visual setting of these significant historic trail and tribally sensitive resources that may be integral to site significance (BLM 2008b:2-3).

Alternative II, Alternative III, or Alternative IV could affect sites that are eligible for the NRHP; whereas, Alternative I, the No Action Alternative, would have no effect. An effect is defined as an alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP (36 CFR 800.16[i]). These effects could be in the form of direct, indirect, or cumulative impacts. Direct impacts are physical and can cause adverse effects to the cultural resource site or its setting. Direct impacts could occur from ground-disturbance, such as:

- clearing (surface grading and leveling using heavy equipment) the surface to create staging areas for construction equipment, to level out pulling and tensioning pad areas, and to place transmission line poles and buried utility lines;
- vehicular traffic during construction and maintenance operations and placement of snow control features that might directly damage cultural resources or create two-track roads through or adjacent to cultural resource sites resulting in surface displacement or soil compaction;
- auger holes and power pole placement in cultural resources sites during construction or maintenance;
- dragging transmission lines during construction or maintenance; and
- visual, auditory, or olfactory changes to the setting of the area, including the placement of buildings or other facilities, power poles and transmission wires, new two-track trails, and any other disturbance considered to have a direct effect on cultural resource sites for which setting is an integral component of site significance.

Indirect effects to cultural resource sites could occur through ground-disturbance that may increase soil erosion on adjacent cultural resource sites and the creation of adjacent trails, which subsequently might be used for access by recreational visitors and which may increase erosion. Providing access into areas containing cultural resource sites through the creation of additional two-track trails could lead to increased looting, vandalism, and damage to cultural resources.

The majority of prehistoric archaeological sites are considered significant under NRHP Criterion D because they may yield information important in prehistory or history (36 CFR 60.4[d]). To support an eligibility determination, such sites must also retain integrity and be relatively undisturbed. These types of sites are most sensitive to direct impacts, which may affect their integrity and ability to provide information.

Cultural resource sites may also be eligible for NRHP listing under Criteria A, B, or C (36 CFR 60.4) because they are associated variously with important events, people, styles, characteristics, or periods in American history. If one or more of these criteria apply, then seven aspects of integrity (setting, location, design, material, workmanship, association, and feeling) must also be considered in support of the eligibility determination. To properly evaluate the cultural resource, one must take into account these aspects of integrity and consider all potential effects, such as visual, auditory, or olfactory intrusions, which may directly or indirectly cause alterations in the character or use of significant cultural resources.

Because there is potential to affect the various aspects of integrity of cultural resources that may be NRHP-eligible, it may be appropriate to define separate and different APEs for each type of potential impact. For example, the APE for the setting of contributing segments of significant historic linear resources would be larger than the APE for direct physical impacts and must be evaluated, both inside and outside of the direct path of project construction. Visual intrusions by features out of character with the historic landscape can diminish or destroy the essential setting of such sites, alter their integrity, and extinguish their eligibility for inclusion in the NRHP. In 2006, the BLM established a protocol with the Wyoming SHPO for assessment of potential impacts to the historic setting of historic properties and guidance for adequate mitigation of visual impacts (BLM and Wyoming SHPO 2006).

The historic Lander Road (48SU387) traverses east-west across the PAPA and includes crossings of the New Fork and Green Rivers. Lander Road and its visual historic setting is protected by a VRM Class II designation for public lands within 3 miles of contributing segments of the trail (BLM 2008a:2-11). As discussed in Section 3.1.4, the crossing locations of Lander Road and of Wagner's Variant by the proposed 25 kV distribution line segments and 69 kV transmission line options are considered non-contributing segments of the wagon road. The adverse effect to the visual setting of contributing segments of the Lander Road by the original 230 kV transmission line has been resolved by implementation of a MOA (BLM et al. 2010b). The adverse effects to Lander Road and Wagner's Variant by oil and gas development in the PAPA were analyzed in the SEIS (BLM 2008c, 2008d) and resolved in an Amended Programmatic Agreement (BLM et al. 2010a).

Cultural resource sites that are considered to be culturally sensitive or sacred to Native American groups are further specifically protected under EO 13007 addressing Indian Sacred Sites, in addition to their protection under the NHPA and other federal legislation. Such sites may include, but are not limited to, rock shelters, rock art, rock alignments, Native American burials, and other traditional cultural properties (TCPs) as described in the Pinedale RMP ROD (BLM 2008b:2-12). Sites sensitive to Native American tribes may be affected indirectly and directly by project development. Direct impacts by visual, auditory, and olfactory intrusions may adversely affect such cultural resources because the setting of traditional Native American cultural properties can be integral to resource values. If present, these types of sites may require additional consultation between the BLM and the appropriate tribal government(s).

#### **4.1.2 Alternative I – No Action Alternative**

Under the No Action Alternative, no additional impacts to cultural resources would occur, other than those previously approved for other non-related actions in the area.

#### **4.1.3 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

Under Alternative II, all impacts and adverse effects to historic, archaeological, and culturally sensitive resources, and the integral settings of these resources, could be avoided or mitigated through the approaches described in Subsection 4.3.1 Mitigation Opportunities, below. Avoidance is the preferred first consideration for cultural resources in the Pinedale RMP ROD. Avoidance allows for greater sustainability of non-renewable cultural resources. Other forms of

mitigation, such as data recovery at archaeological sites or off-site mitigation at historic trails and roads, may be acceptable in some circumstances if avoidance is not possible.

The total number of cultural resource sites determined or recommended NRHP-eligible, or considered potentially NRHP-eligible, that are threatened by Alternative II is twelve, as shown in Table 4-1. This total includes sites within or immediately adjacent to the APE that could be directly or indirectly affected by the alternative. Alternative II would be of greater potential impact to cultural resources than Alternative I (No Action Alternative). In Alternative II, all off-highway vehicle (OHV) traffic would be confined to a corridor that has been inventoried for cultural resources and approved by the BLM before the start of the Project. The width of the APE varies between 150 feet and 300 feet, depending on the Project segment (see Table 3-1). Flexibility exists for adjustment of pole placement along the project corridor, and for placement of the temporary use area for substation construction.

**Table 4-1. Alternative II Effects on NRHP-Eligible Cultural Resource Sites**

<b>Project Segment Identifier</b>	<b>Site Number</b>	<b>Totals</b>
<b><i>25 kV Distribution Lines</i></b>		
2A - Middle Crest	48SU387 (Lander Road)	1
2B - Middle Crest	48SU387 (Lander Road)	1
2BC - Middle Crest	48SU387 (Lander Road)	3
	48SU4449 48SU4974	
2C - Middle Crest	48SU387 (Lander Road)	1
3 - Warbonnet	48SU261	5
	48SU4692	
	48SU4977	
	48SU4978 48SU4979	
5 - Boulder 8 (OH)	48SU5413	1
7 - Shell Central LPF	48SU4977	1
8 - Ultra CGF3 (OH)	48SU4707	1
11 - Rainbow to Antelope	48SU5379	1
12 - Plains (UG)	48SU1298	1
<b><i>Total for 25 kV lines</i></b>		<b><i>12<sup>1</sup></i></b>
<b><i>69 kV Transmission Line</i></b>		
Option A	48SU387 (Lander Road)	1
Option B	48SU387 (Lander Road)	3
	48SU4449 48SU4974	
<b><i>Total for 69 kV line</i></b>		<b><i>3<sup>2</sup></i></b>
<b><i>230 kV Transmission Line</i></b>		
230 kV 1	48SU261	5
	48SU4692	
	48SU4977	
	48SU4978 48SU4979	
<b><i>Total for 230 kV line</i></b>		<b><i>5</i></b>
<b><i>Substation</i></b>		
Substation (southernmost footprint)	48SU4979	1
<b><i>Total for substation</i></b>		<b><i>1</i></b>

Project Segment Identifier	Site Number	Totals
<i>25 kV Distribution Lines</i>		
<b>Grand total (no duplicate tallies)</b>		<b>12<sup>3</sup></b>

<sup>1</sup> Total for 25 kV distribution lines: less repeated occurrences in the column of 48SU387 (Lander Road; Segments 2A, 2B, 2BC, 2C) and 48SU4977.

<sup>2</sup> Total for 69 kV transmission line: less repeated occurrence in the column of 48SU387 (Lander Road; Option A and B).

<sup>3</sup> Grand total excludes duplicate tallies: 48SU261, 48SU387 (Lander Road), 48SU4692, 48SU4449, 49SU4974, 48SU4977, 48SU4978, and 48SU4979.

Under Alternative II, Segments 2A, 2B, 2BC, or 2C of the proposed 25 kV distribution lines or Options A or B of the proposed 69 kV transmission line cross the NRHP-eligible Lander Road Historic Trail and Wagner’s Variant of the trail. The Project under Alternative II would have no visual or direct impact on contributing segments of the Lander Road or Wagner’s Variant of the trail. The linear crossings of the historic wagon road and Wagner’s Variant would occur within segments that do not contribute to the overall eligibility or visual setting of the trail for NRHP inclusion, and would cross within a Class III viewshed. Further, the Pinedale RMP ROD allows for linear crossings within 0.25 mile of the Lander Trail as a general exception to the no disturbance policy to this resource (BLM 2008a:2-12).

Eleven NRHP-eligible prehistoric archaeological sites along segments of the proposed 25 kV distribution lines, Option B of the proposed 69 kV transmission line, segment 1 of the proposed 230 kV transmission line, or the proposed footprint for the southernmost station (Table 4-1) would be threatened under Alternative II by impacts from the direct physical ground-disturbing actions described under the impact criteria listed above (Subsection 4.1.1.1 Impact Criteria). The means of avoiding or mitigating these impacts, as described in Subsection 4.3.1 Mitigation Opportunities, would equalize – reducing or eliminating the adverse effect – to these significant cultural resources under Alternative II.

Along Alternative II, potential discovery situations are known to arise in areas of suitable soil deposition, such as those with sufficient eolian (e.g., sand dune) deposits, or where San Arcacio or San Arcacio-like soils (e.g. Forelle) occur in the Anticline South cultural subregion (BLM 2008a:3-16; Soil Survey Staff 2010). Potential discovery situations may also be near the New Fork River or Blue Rim where prehistoric pit house remains have been previously exposed during construction. A discovery and mitigation plan should be developed to avert impacts should archaeological materials or buried remains be unexpectedly discovered as a result of exposure during ground disturbance from project development.

#### **4.1.4 Alternative III – 25 kV Distribution**

Under Alternative III, all impacts and adverse effects to historic, archaeological, and culturally sensitive resources, and the integral settings of these resources, could be avoided or mitigated through the approaches described in Subsection 4.1.7 Mitigation Opportunities, below.

Avoidance is the preferred first consideration for cultural resources in the Pinedale RMP ROD. Avoidance allows for greater sustainability of non-renewable cultural resources. Other forms of mitigation, such as data recovery at archaeological sites or off-site mitigation at historic trails and roads, may be acceptable in some circumstances if avoidance is not possible.

Twelve cultural resource sites determined or recommended NRHP-eligible, or considered potentially NRHP-eligible are threatened by Alternative III as shown in Table 4-2. This total includes sites within or immediately adjacent to the APE that could be directly or indirectly affected by the alternative. Alternative III would be of greater potential impact to cultural resources than Alternative I (No Action Alternative). In Alternative III, all OHV traffic would be confined to a corridor that has been inventoried for cultural resources and approved by the BLM before the start of the Project. The width of the APE varies between 150 feet and 300 feet, depending on the Project segment (Table 3-1). Flexibility exists for adjustment of pole placement along the project corridor, and for placement of the temporary use area for substation construction.

**Table 4-2. Alternative III Effects on NRHP-Eligible Cultural Resource Sites**

<b>Project Segment Identifier</b>	<b>Site Number</b>	<b>Totals</b>
<b>25 kV Distribution Lines</b>		
2A - Middle Crest	48SU387 (Lander Road)	1
2B - Middle Crest	48SU387 (Lander Road)	1
2BC - Middle Crest	48SU387 (Lander Road) 48SU4449 48SU4974	3
2C - Middle Crest	48SU387 (Lander Road)	1
3 - Warbonnet	48SU261 48SU4692 48SU4977 48SU4978 48SU4979	5
5 - Boulder 8 (OH)	48SU5413	1
7 - Shell Central LPF	48SU4977	1
8 - Ultra CGF3 (OH)	48SU4707	1
11 - Rainbow to Antelope	48SU5379	1
12 - Plains (UG)	48SU1298	1
<b>Total for 25 kV distribution lines (no duplicate tallies)</b>		<b>12<sup>1</sup></b>

<sup>1</sup> Less repeated occurrences in the column of 48SU387 (Lander Road; Segments 2A, 2B, 2BC, 2C) and 48SU4977.

Under Alternative III, Segments 2A, 2B, 2BC, or 2C of the proposed 25 kV distribution lines cross the NRHP-eligible Lander Road Historic Trail and Wagner’s Variant of the trail. The Project under Alternative III would have no visual or direct impact on contributing segments of the Lander Road or Wagner’s Variant of the trail. The linear crossings of the historic wagon road and Wagner’s Variant would occur within segments that do not contribute to the overall eligibility or visual setting of the trail for NRHP inclusion, and would cross within a Class III viewshed. Further, the Pinedale RMP ROD allows for linear crossings within 0.25 mile of the Lander Trail as a general exception to the no disturbance policy to this resource (BLM 2008a:2-12).

Eleven NRHP-eligible prehistoric archaeological sites along segments of the proposed 25 kV distribution lines (Table 4-2) would be threatened under Alternative III by impacts from the direct physical ground-disturbing actions described under the impact criteria listed above (Subsection 4.1.1 Impact Criteria). The means of avoiding or mitigating these impacts, as

described in Subsection 4.1.7 Mitigation Opportunities, would reduce or eliminate adverse effects to these significant cultural resources.

Along Alternative III, potential discovery situations are known to arise in areas of suitable soil deposition, such as those with sufficient eolian (e.g., sand dune) deposits, or where San Arcacio or San Arcacio-like soils (e.g. Forelle) occur in the Anticline South cultural subregion (BLM 2008a:3-16; Soil Survey Staff 2010). Discovery potential exists near the New Fork River or Blue Rim where prehistoric pit house remains have been previously exposed during construction. A discovery and mitigation plan should be developed to avert impacts should archaeological materials or buried remains be unexpectedly discovered during project development.

**4.1.5 Alternative IV – 25 kV Distribution and 69 kV Transmission and Substation**

Under Alternative IV, all impacts and adverse effects to historic, archaeological, and culturally sensitive resources, and the integral settings of these resources, could be avoided or mitigated through the approaches described in Subsection 4.1.7 Mitigation Opportunities, below. Avoidance is the preferred first consideration for cultural resources in the Pinedale RMP ROD. Avoidance allows for greater sustainability of non-renewable cultural resources. Other forms of mitigation, such as data recovery at archaeological sites or off-site mitigation at historic trails and roads, may be acceptable in some circumstances if avoidance is not possible.

The total number of cultural resource sites determined or recommended NRHP-eligible, or considered potentially NRHP-eligible, that are threatened by Alternative IV is twelve, as shown in Table 4-3. This total includes sites within or immediately adjacent to the APE that could be directly or indirectly affected by the alternative. Alternative IV would be of greater potential impact to cultural resources than Alternative I (No Action Alternative). In Alternative IV, all OHV traffic would be confined to a corridor that has been inventoried for cultural resources and approved by the BLM before the start of the Project. The width of the APE varies between 150 feet and 300 feet, depending on the Project segment (Table 3-1). Flexibility exists for adjustment of pole placement along the project corridor, and for placement of the temporary use area for substation construction.

**Table 4-3. Alternative IV Effects on NRHP-Eligible Cultural Resource Sites**

<b>Project Segment Identifier</b>	<b>Site Number</b>	<b>Totals</b>
<b><i>25 kV Distribution Lines</i></b>		
2A - Middle Crest	48SU387 (Lander Road)	1
2B - Middle Crest	48SU387 (Lander Road)	1
2BC - Middle Crest	48SU387 (Lander Road) 48SU4449 48SU4974	3
2C - Middle Crest	48SU387 (Lander Road)	1
3 - Warbonnet	48SU261 48SU4692 48SU4977 48SU4978 48SU4979	5
5 - Boulder 8 (OH)	48SU5413	1
7 - Shell Central LPF	48SU4977	1
8 - Ultra CGF3 (OH)	48SU4707	1

<b>Project Segment Identifier</b>	<b>Site Number</b>	<b>Totals</b>
11 - Rainbow to Antelope	48SU5379	1
12 - Plains (UG)	48SU1298	1
<b>Total for 25 kV lines</b>		<b>12<sup>1</sup></b>
<b>69 kV Transmission Line</b>		
Option A	48SU387 (Lander Road)	1
Option B	48SU387 (Lander Road)	3
	48SU4449	
	48SU4974	
<b>Total for 69 kV line</b>		<b>3<sup>2</sup></b>
<b>Substation</b>		
Substation (southernmost footprint)	48SU4979	1
<b>Total for substation</b>		<b>1</b>
<b>Grand total (no duplicate tallies)</b>		<b>12<sup>3</sup></b>

<sup>1</sup> Total for 25 kV distribution lines: less repeated occurrences in the column of 48SU387 (Lander Road; Segments 2A, 2B, 2BC, 2C) and 48SU4977.

<sup>2</sup> Total for 69 kV transmission line: less repeated occurrence in the column of 48SU387 (Lander Road; Option A and B).

<sup>3</sup> Grand total excludes duplicate tallies: 48SU387 (Lander Road), 48SU4449, 48SU4974, 48SU4977, and 48SU4979.

Under Alternative IV, Segments 2A, 2B, 2BC, or 2C of the proposed 25 kV distribution lines or Options A or B of the proposed 69 kV transmission line cross the NRHP-eligible Lander Road Historic Trail and Wagner’s Variant of the trail. The Project under Alternative IV would have no visual or direct impact on contributing segments of the Lander Road or Wagner’s Variant of the trail. The linear crossings of the historic wagon road and Wagner’s Variant would occur within segments that do not contribute to the overall eligibility or visual setting of the trail for NRHP inclusion, and would cross within a Class III viewshed. Further, the Pinedale RMP ROD allows for linear crossings within 0.25 mile of the Lander Trail as a general exception to the no disturbance policy to this resource (BLM 2008a:2-12).

Eleven NRHP-eligible prehistoric archaeological sites along segments of the proposed 25 kV distribution lines, Option B of the proposed 69 kV transmission line, or the proposed footprint for the southernmost station (Table 4-3) would be threatened under Alternative IV by impacts from the direct physical ground-disturbing actions described under the impact criteria listed above (Subsection 4.1.1. Impact Criteria). The means of avoiding or mitigating these impacts, as described in Subsection 4.1.7 Mitigation Opportunities, would equalize – reducing or eliminating the adverse effect – to these significant cultural resources under Alternative IV.

Along Alternative IV, potential discovery situations are known to arise in areas of suitable soil deposition, such as those with sufficient eolian (e.g., sand dune) deposits, or where San Arcacio or San Arcacio-like soils (e.g. Forelle) occur in the Anticline South cultural subregion (BLM 2008a:3-16; Soil Survey Staff 2010). Potential discovery situations may also be near the New Fork River or Blue Rim where prehistoric pit house remains have been previously exposed during construction. A discovery and mitigation plan should be developed to avert impacts should archaeological materials or buried remains be unexpectedly discovered as a result of exposure during ground disturbance from project development.

#### **4.1.6 Cumulative Effects**

Multiple oil and gas drilling and production projects contribute to the cumulative impacts to cultural resources in the Project vicinity. Although the Pinedale RMP ROD upholds a policy favoring avoidance of impacts and therefore preservation of cultural resources, as development becomes denser, cultural resources (including their integral visual setting) become increasingly more difficult to avoid and more intrusive mitigation measures are necessary to avoid the destruction of non-renewable cultural material. Potential for disturbance of cultural materials and site settings is proportionate to the surface area of ground disturbance and the scale of above-ground development on the cultural landscape. Increased ground disturbance also increases the potential for unanticipated discoveries, and the potential for the unmitigated loss of cultural resource values and information if those discoveries go unrecognized or if there is loss due to damage as a result of the disturbance during discovery.

#### **4.1.7 Mitigation Opportunities**

Cultural resources determined or recommended to be eligible or potentially eligible for NRHP nomination, and thereby determined significant, would be protected: “Potential effects on cultural resources will be managed, to the extent possible, through avoidance and confidentiality of location. Where avoidance is not feasible or prudent, mitigation through data recovery, monitoring, or other data collection will be required” (BLM 2008a:2-11).

If a cultural resource site cannot be avoided, additional mitigation such as data recovery or the use of non-invasive geophysical methods (e.g., ground-penetrating radar, magnetometry, etc.) to define buried deposits may be required. Data recovery is generally defined as excavation, analysis, and dissemination of all significant archaeological data as determined by a federal archeologist.

For this Project, cultural resource sites that are determined or recommended to be eligible for nomination to the NRHP and that fall within the APE for physical impacts will be avoided by transmission line spanning and pole placement at the maximum distance from each eligible site within engineering constraints, and by rerouting the construction traffic around site boundaries, or through established roadways already crossing historic trail structures, and by shifting the pole locations away from site areas. Avoidance is the primary and preferred mitigative measure used to protect cultural resources. Avoidance will ensure that no adverse effects occur to historic properties as a result of transmission line construction. Avoidance may be further supported by placement of barrier fencing or other physical traffic diverters around sites and by archaeological monitoring or inspection during construction. These stipulations will be determined as necessary by the BLM archaeologist. Residual impacts may be avoided post-construction, as during maintenance episodes, by mitigation of threatened sites, continuous and regular site monitoring and assessment, communication with the BLM regarding proposed maintenance episodes, prohibition of off-road ROW work in wet-ground conditions, reclamation/replanting of vegetation in disturbed areas, and placement of permanent barriers along the project line at intersections with existing roads, such that trails would not become established.

Mitigation measures recommended below would further reduce adverse impacts to below the level of significance either through further resource treatment (if necessary), avoidance, or mitigation.

- A discovery and mitigation plan should be developed to avert impacts should archaeological materials or buried remains be unexpectedly discovered as a result of exposure during ground disturbance from project development, and to uphold avoidance and mitigation for the significant sites that have been already identified. The plan may include requirements for an archaeological monitor in sensitive areas where ground disturbance may occur adjacent to known cultural resource sites or in areas with potential for archaeologically sensitive soil deposition. Should any subsurface or otherwise previously obscured archaeological materials be discovered by archaeological monitors or construction personnel anywhere within the Project APE, the BLM is to be notified immediately and work in the area of the discovery cease until the BLM or a qualified and BLM-directed archaeologist can assess the discovery, determine its significance, and make additional recommendations.
- No surface disturbance would be permitted in the paths of intact historic trail and wagon road segments that contribute to the NRHP-eligibility of an historic transportation site. No project traffic would cross intact, contributing segments of significant historic trail or road sites. Project traffic would be limited to non-contributing segments or areas of existing disturbance in crossing these historic transportation routes.
- No structures or disturbance would be permitted on portions of NRHP-eligible archaeological sites that contribute to site significance; transmission lines would span or bypass such sites, and project traffic and blading would be routed or placed away from or around them. Any portion of an NRHP-eligible site not contributing to site significance and proposed for structure placement or disturbance would require the appropriate level of testing, review, and agency concurrence within a mitigation plan before project actions being decided or approved at the site.
- The use of engineering alternatives to minimize direct impacts to the historic alignment at the project crossings of the Lander Road and Wagner's Variant might include:
  - At the project's crossings of the Lander Trail and Wagner's Variant under Alternative II, Alternative III or Alternative IV, place poles at the maximum distance from the trail within engineering constraints.
  - Temporary construction barriers should be placed at the on either side of the project area crossings to restrict traffic to existing disturbed areas during project development.
  - No poles or work areas will be placed directly on or bordering intact portions of the trail anywhere.
- Worker Instruction. Construction personnel should be instructed about the types of cultural artifacts (prehistoric and historic) they could encounter and the steps to take if cultural artifacts are uncovered anywhere during construction of the project. Instruction by a qualified, permitted archaeologist will be the responsibility of the project proponent and should emphasize the non-renewable nature of archaeological resources, and that collection or excavation of artifacts from Federal lands without a Federal permit is illegal, as is the disposal of artifacts to avoid dealing with or documenting them.

- **Discovery Contingency.** Contingencies should be implemented in the event that significant cultural remains are discovered during ground-disturbing activities. Usually construction activities that could adversely affect discovered cultural remains are redirected until the BLM has been notified of the discovery and the BLM or a qualified, permitted archaeologist has determined the importance of the cultural remains, and determined the extent of the cultural site or deposits

The BLM and/or permitted archaeologist will then determine and implement recommendations regarding further mitigation, if any is warranted.

- **Monitoring.** Areas that hold a high probability for preserving cultural remains as suggested by prior cultural inventory work will be monitored during any construction by a qualified archaeologist. A technical report describing the cultural resources monitoring and the related collection of identified cultural remains, if any, will be prepared by the qualified archaeologist and submitted to the BLM.
- **Curation of Cultural Remains.** Cultural remains collected during project construction, if any, will be curated at the University of Wyoming curation facility. This facility meets federal requirements. Artifacts and/or ecofacts should be identified and catalogued as required by the repository, and accompanied by a final cultural resources technical report describing the relevant fieldwork and collection methods.

## **4.2 PALEONTOLOGY/GEOLOGY AND MINERALS**

The Anticline Oil and Gas SEIS (BLM 2008d) identified and analyzed impacts to paleontological resources, geology and minerals that would result from continued development of the PAPA. The details of these analyses on paleontological resources are contained in Section 4.12.3.1 of the SEIS and analyses of impacts to geology and minerals are contained in Section 4.11.3.1 (BLM 2008d).

### **4.2.1 Alternative I - No Action Alternative**

Under the No Action Alternative the surface and near surface geological deposits would not be disturbed by Proposed Action and no significant fossils resources would be impacted except by natural erosional processes.

The beneficial “impact” of finding new fossils of scientific significance could not occur as a result of this project if the project is not completed.

### **4.2.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

#### ***Geology***

Impacts could occur to the geologic environment as a result of Proposed Action if alteration of existing land surface steepens slopes or otherwise increases runoff or causes undercutting that could initiate slumping, landslides or other mass movements. If existing BLM construction restrictions on slopes and construction design described in the project Plan of Development

reports are followed the possibility of the project initiating landslides or other mass movements, flooding is considered unlikely.

Impacts could occur to the geologic environment and project facilities as a result of inherent geologic hazards (e.g., landslides, mass movements, earthquakes), but this is considered unlikely. However the nearly horizontal attitude of rocks at the surface and relatively low relief lessens the chance for naturally occurring mass movements. In addition, no significant landslides or mass movement deposits occur within the project and no earthquake epicenters have been documented within 20 km of the project area.

### ***Minerals/Oil and Gas***

With the exception of sand and gravel deposits located primarily along the New Fork River there are no known solid mineral deposits in the project area. This area would be spanned by the transmission line and as a result construction of the project under Alternative II will not affect minerals in any significant way Oil and Gas is produced at great depth. Construction associated with Alternative II, III, or IV would affect only the surface and near surface and as a result would not affect oil and gas.

### ***Paleontology***

Excavation associated with surface and near surface disturbance associated with the Proposed Action could result in the destruction of paleontological resources. The potential for this is greatest where unit 2 of the Wasatch Formation will be disturbed because unit 2 is known to contain and produce scientifically significant fossils at many locations in and near the project area.

The potential for the destruction of paleontological resources as a result of excavation is much less for units 1 and 3 which have not been documented to produce fossils of scientific significance within the project area.

The potential for the destruction of paleontological resources as a result of excavation is considered negligible for Recent sediments, which also have not been documented to produce fossils of scientific significance within the project area.

Mitigation described below including monitoring and general measures could result in a beneficial “impact” if as a result of excavation new fossils of scientific importance are discovered, collected, and studied.

### **4.2.3 Alternative III**

Alternative II would have the same impacts as described for the 25 kV distribution portion of the Proposed Action.

### **4.2.4 Alternative IV**

Alternative IV would have the same impacts as described for the 25 kV distribution, 69 kV transmission and substation portions of the Proposed Action.

#### **4.2.5 Cumulative Effects**

No cumulative impacts to paleontology, geology or minerals are identified.

#### **4.2.6 Mitigation**

The magnitude of impacts associated with the destruction of potential fossil resources can be reduced by the implementation of paleontological resource mitigation measures described in the following subsections. The measures include general measures and specific measures that are summarized in Table 1 of Appendix 5.

##### ***General Mitigation Measures***

General measures are proposed to mitigate potential adverse impacts to fossil resources that may occur anywhere in the project area. The following measures should be applied to the entire Project Area:

Worker Instruction. Construction personnel should be instructed about the types of fossils they could encounter and the steps to take if they uncover fossils anywhere during construction of the project. Instruction by a qualified, permitted paleontologist will be the responsibility of the project proponent and should emphasize the non-renewable nature of paleontological resources, and that collection or excavation of fossil materials from federal lands without a federal permit is illegal, as is the disposal of fossils to avoid dealing with or documenting them.

Discovery Contingency. Contingencies should be implemented in the event that significant fossils are discovered during ground disturbance. Construction that could adversely affect discovered fossils is usually redirected until a qualified, permitted paleontologist has determined the importance of the uncovered fossils, and determined the extent of the fossiliferous deposits. A permitted paleontologist will then determine and implement recommendations regarding further mitigation, if any is warranted, as discussed with the BLM authorized officer.

##### ***Specific Mitigation Measures***

Specific measures should be implemented in an effort to mitigate potential adverse impacts to fossil resources areas underlain at the surface, or within a few feet of the surface, by the Wasatch Formation.

Monitoring. Only areas underlain by surface exposures of Unit 2 of the Wasatch Formation along the north and east side of Blue Rim and one area underlain by Unit 3 of the Wasatch Formation, which field survey revealed produce vertebrate fossils should be monitored during surface disturbance. Details on these are is provided in Table 1 in Appendix 5.

Curation of Specimens. Fossil specimens of scientific significance recovered, if any, during the project should be curated into the collections of a museum repository acceptable to the land management agencies involved with the Pinedale Transmission Project. The Departmental Collections of the Geology and Geophysics Department at the University of Wyoming is the curation facility recommended. Specimens should be prepared to the point of identification, identified, and catalogued into the permanent collections of an established institution.

Submission of a Final Technical Document. Adverse impacts to paleontological resources are usually not considered reduced to an insignificant level until a final technical report is prepared and submitted following completion of the mitigation program. The final report should contain the results of the mitigation work, including an accession list of fossil specimens collected listed by locality, and the final disposition of the fossils. The final report should also contain a discussion of the scientific significance of the specimens and geologic and paleontological setting of the fossils and their localities. A confidential appendix containing copies of locality maps and standard locality data sheets for each locality, if any specimens were discovered and collected, should be included with the report, and copies of the report should be filed with the project proponent, agencies involved, and the repository where the fossils are curated.

### 4.3 AIR RESOURCES

The Anticline Oil and Gas SEIS (BLM 2008d) identified and analyzed to impacts ambient air pollutant concentrations (including ozone), atmospheric deposition (acid rain) and visibility that would result from continued development of the PAPA. The details of these analyses are contained in Section 4.9.3.1 of the SEIS (BLM 2008d).

#### **4.3.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the existing and future oil and gas operations in the Pinedale Anticline Field would continue to use diesel generators to power onsite equipment. The generators and vehicle traffic related to service and maintenance personnel visiting the generators would continue to emit harmful pollutants into the air over the life of the oil field and, in turn, continue to exacerbate the ozone issues experienced in the Pinedale region.

#### **4.3.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

The Proposed Action would replace the use of internal combustion generators at eight customer sites with electric power. The Pinedale region would experience a beneficial impact to air quality resulting from the proposed action, which would reduce emissions at these sites. Information obtained from the operators of the eight customer sites indicated that the following reductions in emissions would be realized as a result of electrification of the sites.

**Table 4-4. Estimated Emissions Reductions from Electrification of Eight Customer Sites**

<b>Chemical</b>	<b>Total Tons Per Year (TPY)</b>
Nitrogen Oxides (NO <sub>x</sub> ) <sup>1</sup>	54.1
Carbon Monoxide (CO) <sup>2</sup>	65.2
Volatile Organic Compounds (VOC) <sup>3</sup>	39.6
Sulfur Dioxide (SO <sub>2</sub> ) <sup>4</sup>	1.2
Particulate Matter (PM) <sup>5</sup>	1.2
Hazardous Air Pollutants (HAP)s <sup>6</sup>	2.9
Formaldehyde <sup>7</sup>	1

<sup>1</sup> NO<sub>x</sub> estimate for 8 of 8 facilities

<sup>2</sup> CO estimate for 7 of 8 facilities

- <sup>3</sup> VOC estimate for 8 of 8 facilities
- <sup>4</sup> SO<sub>2</sub> estimate for 5 of 8 facilities
- <sup>5</sup> PM estimate for 5 of 8 facilities
- <sup>6</sup> HAPs estimate for 5 of 8 facilities
- <sup>7</sup> Formaldehyde estimate for 1 of 8 facilities.

Temporary air quality impacts would occur during construction from the use of construction vehicles and equipment. The impacts associated with emissions from construction equipment will be short-term, temporary impacts. An overall improvement in air quality would occur over the lifespan of the oil field as a result of this project.

### **4.3.3 Alternative III**

Alternative III would have the same long-term effects on air quality as Alternative II. Short term, temporary effects from construction equipment would also occur as a result of Alternative III. These effects from the 25 kV line would remain the same. However, since the 69 kV line and the substation would not be constructed, there would not be emission from those elements of the proposed action. The 230 kV line would remain within the currently authorized corridor and would require the construction of an additional one mile of line as compared to the 230 kV alignment amendment included in the proposed action. This additional mile of construction would contribute additional short-term impacts to air quality from additional emissions from construction equipment.

### **4.3.4 Alternative IV**

Alternative IV would have the same long-term effects on air quality as Alternative II. However, since the 230 kV line would remain within the currently authorized corridor, it would require the construction of an additional mile of line as compared to the 230 kV alignment amendment included in the proposed action. This additional mile of construction would contribute additional short-term impacts to air quality from additional emissions from construction equipment.

### **4.3.5 Cumulative Effects**

If additional oil and gas facilities beyond the eight contained in the Proposed Action are converted to electric power, the air quality improvements described in Chapter 4 of this EA would increase. Each additional site that is connected to the electric power system would represent additional generators that would not be required for operation of the well pads. The additional electricity required for this project would be generated from supplemental energy sources such as wind and natural gas. The natural gas power generation, if utilized to serve these customers, will result in emissions. However, due to the clean air requirements of natural gas facilities and the quantity of power generated at these facilities, the economies of scale will result in cleaner, more efficient electricity generated from natural gas than that generated from onsite generators.

### **4.3.6 Mitigation**

All activities would be required to comply with all applicable local, state, and federal air quality laws, statutes, regulations, standards, and implementation plans. Additional mitigation of air quality impacts would also be implemented, including:

- Maintenance of construction equipment in good operating condition to ensure engines run efficiently.

- Maintenance of emission controls on vehicles and construction equipment to ensure effective pollutant emission reductions.

#### **4.4 GLOBAL CLIMATE CHANGE**

The Anticline Oil and Gas SEIS (BLM 2008d) identified and analyzed greenhouse gasses that would result from continued development of the PAPA. The details of these analyses on global climate change are contained in Section 4.9.3.1 of the SEIS (BLM 2008d).

##### **4.4.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the existing and future oil and gas operations in the Pinedale Anticline Field would continue to use diesel generators to power onsite equipment. This would result in the continued release of GHGs into the environment. The effects of GHG emissions and climate change are not precisely quantifiable at this time. Qualitative assessment of this information indicates that the No Action alternative would contribute to additional climate change.

##### **4.4.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

The Proposed Action would replace the use of internal combustion generators at eight customer sites with electric power. The reductions in GHGs resulting from the removal of these generators would provide a beneficial long-term impact to global climate change. Temporary negative impacts to global climate change would occur during construction resulting from the use of construction vehicles and equipment. The impacts associated with emissions of GHGs from construction equipment will be short-term, temporary impacts. An overall reduction in global climate change contributors would occur over the lifespan of the oil field as a result of this project.

##### **4.4.3 Alternative III**

Alternative III would have the same long-term effects on climate change as Alternative II. Short term emissions from construction equipment would also occur as a result of Alternative III. These effects from the 25 kV line would remain the same. However, since the 69 kV line and the substation would not be constructed, there would not be GHG emissions from those elements of the proposed action. The 230 kV line would remain within the currently authorized corridor and would require the construction of an additional mile of line as compared to the 230 kV alignment amendment included in the Proposed Action. This additional mile of construction would contribute additional impacts to climate change from additional GHG emissions from construction equipment.

##### **4.4.4 Alternative IV**

Alternative IV would have the same effects on climate change as Alternative II. However the 230 kV line would remain within the currently authorized corridor and would require the construction of an additional one mile of line as compared to the 230 kV alignment amendment included in the Proposed Action. This additional mile of construction would contribute additional impacts to climate change from additional GHG emissions from construction equipment.

#### **4.4.5 Cumulative Effects**

The cumulative effects for global climate change would be the same as those described for air quality in Section 4.3.5.

#### **4.4.6 Mitigation**

Mitigation for global climate change would be the same as that stated for air quality in Section 4.3.6.

### **4.5 SOILS**

#### **4.5.1 Impact Criteria**

Based on management objectives of the Pinedale RMP ROD, impact indicators for soils include destabilizing soil layers, accelerated erosion, and chemical degradation of the soil resource. Most soils in the Project Area have a high erosion potential and generally limited rehabilitation potential because of the relatively dry climate, thin soils, shallow depth to bedrock, excess salts, excess sand and/or small stones, clayey textures, and excess lime. Impacts to soils would be considered significant if a reduction in soil productivity and/or increased erosion would prevent successful reclamation or if soil disturbance or other activities resulted in a violation of the land use objectives identified in the Pinedale RMP ROD (BLM 2008a). Potential direct impacts to Project Area soils would result from the exposure and disturbance of in-place soils, and any resulting short-term and long-term topsoil loss, soil compaction, and increased susceptibility to wind and water erosion. Increased surface runoff and erosion would occur primarily in the short term and would decline in time due to natural stabilization through particle aggregation, soil structure development, and armoring.

Direct impacts would result from mechanical grading and leveling of soil. Indirect impacts to soils may result from crushing of vegetation by heavy equipment. Impacts to soils are assumed to be proportional to the amount of new surface disturbance including vegetation crushing. Potential impacts, both directly from ground disturbances and indirectly from vegetation crushing, would be more pronounced in areas of steeper slopes. Direct and indirect adverse impacts to soil resources can typically be reduced to below a level of significance through the implementation of effective mitigation measures.

#### **4.5.2 No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented and no new construction of the 25 kV distribution line, the 69 kV transmission line, or the Anticline substation would be authorized thus avoiding disturbance of 461 additional acres in the PAPA. Construction of the 230 kV transmission line segment would proceed as originally approved.

**Table 4-5. Disturbance Area Comparison Table**

<b>Project Action</b>	<b>No Action Alt</b>	<b>Proposed Action</b>	<b>Alt III</b>	<b>Alt IV</b>
25 kV	0	345 Ac	345 Ac	345 Ac
69 kV	0	127 Ac	0	127 Ac
Substation	0	15 Ac	0	15 Ac
Amended 230 kV	0	257 Ac	0	0
Approved 230 kV	283 Ac	0	283 Ac	283 Ac

<b>Total</b>	<b>283 Ac</b>	<b>744 Ac</b>	<b>628 Ac</b>	<b>770 Ac</b>
<b>Additional Disturbance Area<sup>1</sup></b>	<b>0</b>	<b>461 Ac</b>	<b>345 Ac</b>	<b>487 Ac</b>

<sup>1</sup> Area disturbed in addition to approved 230-kV line.

**4.5.3 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

Construction of the 25 kV distribution line, 69 kV transmission line, the 230 kV transmission line route amendment, and Anticline substation would potentially result in approximately 744 acres of total surface disturbance (however, only 461 more acres would be disturbed than the No Action Alternative). All soil impacts are expected to be short term; however, some soil loss could occur due to the physical alteration of the existing soil resource. For purposes of this analysis it is assumed that surface disturbance associated with the Proposed Action would occur in undisturbed areas. However, a large portion of the proposed routes lie adjacent to or near existing oil and gas facilities including an existing pipeline alignment; therefore, the new surface disturbance would be less than what is disclosed in this analysis.

Existing access roads and two-tracks would be used to gain access to the ROW and to move construction equipment to the area. For structures not immediately adjacent to existing roads, the contractor would travel overland within the authorized ROW from the nearest existing access road. Emphasis would be placed on traveling on existing access roads and two-tracks instead of overland, whenever practicable. Overland travel routes may require minor surface grading in areas with excessively undulating terrain to accommodate site access by large equipment. If grading is necessary, areas would be coordinated with BLM and grading will not commence without BLM approval.

Approximately 16 poles of the 25 kV overhead crossing of the New Fork River would need to be located in the riparian/floodplain area. These poles would be placed in areas that can be accessed from existing and/or overland routes to the extent feasible and within engineering constraints while considering a safe work environment for workers to minimize disturbance in the riparian area. Equipment would not operate within the river channel.

At structure sites, relatively level areas would be needed to facilitate the safe operation of equipment, such as construction cranes and bucket trucks. These areas would be approximately 150 feet long by 100 feet wide. Grading would be avoided when possible and would only be needed on excessively undulating or steep terrain.

Pulling and tensioning sites would be located at dead end and route angle change structures. At running angles the work area for pulling and tensioning would be approximately 100 feet wide by 250 feet in-line beyond the structure. At dead end and angles structures, surface disturbance from pulling and tensioning may occur within a 250-foot radius to the outside of the angle structure. When possible, full reel lengths would be used between dead-end or angle structures to minimize the number of pulling and tensioning locations required. Final locations and quantities of pulling and tensioning sites would be determined by the contractor and approved by the BLM Authorized Officer. As with structure sites, these work areas would be cleared of vegetation only to the extent necessary to minimize disturbance.

Rocky Mountain Power would utilize, to the extent practicable, existing substation yards for construction staging areas to avoid impacting additional undisturbed lands. Other staging areas on private lands may be required, and would be coordinated by the contractor with the landowner in advance of construction.

Soils along the proposed distribution and transmission line routes are predominantly less susceptible to surface disturbances, but also include soils of piedmonts and alluvial fans and/or floodplain and bottomland soils occurring near the New Fork River. Direct impacts would include vegetation removal, soil surface compaction, and surface-disturbance, including soil blading, grading, trenching, and stockpiling.

Potential impacts to soils from construction also include surface runoff, soil contamination, intermittent stream bank and channel instability, and sedimentation. Stockpiled soils and exposed subsoils in the areas trenched to install the underground distribution line would be subject to accelerated water and wind erosion due to loss of protective vegetative cover, increased runoff, low infiltration, and more direct wind exposure. Vehicle traffic increases soil compaction, which results in reduced soil productivity from loss of soil structure, increased erodibility, reduced infiltration, and decreased water storage capacity. Sensitive soils within the proposed route alignments are relatively uncommon; however, sensitive soils are more susceptible than more common soil types to surface disturbances and erosive forces, and these soils are typically a function of increased slope, shallow depth, texture, and exposure.

Upland soils surrounding the proposed distribution and transmission line route alignments developed over sedimentary formations typically high in clay content, which often results in poor infiltration, high runoff, and high slumping potential. In general, there are no large extents of steep slopes (greater than 25%) along the route where increased surface-disturbance would likely result in slumping and/or landslides. Upland soils that have developed from lacustrine parent material often have elevated saline and sodic properties, which often have low reclamation potential due to water quality impacts and poor vegetation establishment.

Construction in the proposed project areas would disturb soils developed from piedmonts and alluvial fans. These soils may be highly susceptible to gullying when disturbed; however, most of these soils are considered non-sensitive with moderate reclamation potential.

In areas where vegetation is cleared for grading and over trenching, the upper six to ten inches of soil would be removed and stockpiled separately from any spoil. After line construction, disturbed areas would be graded to blend as near as possible with the natural contours, the upper six to ten inches of soil would be replaced and reseeded as necessary. All areas disturbed would be reclaimed according to agency requirements and the Reclamation Plans contained in the project PODs. Appropriate seed mixtures would be broadcast on the disturbed area, after seedbed preparations are complete. After broadcasting, the seed would be lightly harrowed or raked into the ground. The seed mixtures would be used to promote establishment of grasses in the short-term while the shrubs would become established over a longer period.

#### **4.5.4 Alternative III**

Vegetation disturbance would be limited to 345 acres if construction is limited to the 25 kV distribution line (116 acres less than the Proposed Action). Approximately 21 miles of overhead line and 2 miles of underground line would be constructed. All disturbed areas would be restored as described under the Proposed Action.

#### **4.5.5 Alternative IV**

Construction of the 25 kV distribution line, the 69 kV transmission line, and Anticline substation would disturb 487 acres. 26-miles of overhead line and 2-miles of underground line would be constructed. 142 additional acres would be impacted under Alternative IV than Alternative III; and 26 more acres would be disturbed under Alternative IV than the Proposed Action because the longer approved 230 kV line route would be built under the Alternative IV scenario. All disturbed areas would be restored as described under the Proposed Action.

#### **4.5.6 Cumulative Effects**

Construction of the Proposed Action electrification projects would result in the disturbance of 461 acres of soil in addition to permitted action in the PAPA area, including construction of the approved 230 kV transmission line, oil and gas development, grazing, and recreational activities. However, impacts to soils from construction of the proposed facilities are expected to be temporary and would not impose long-term effects based on the relatively flat topography of the surrounding area and non-sensitive nature of the surrounding soils. The project laydown areas are anticipated to be located in previously disturbed areas avoiding additional increase of disturbed areas.

#### **4.5.7 Mitigation**

Surface-disturbance, including vegetation and topsoil removal, immediately expose soils to erosive forces; however, BMPs and environmental protective measures will be implemented to protect soil resources.

- Existing access roads and two-tracks would be used to gain access to the ROW and to move construction equipment to the area. For structures not immediately adjacent to existing roads, the contractor would travel overland within the authorized ROW from the nearest existing access road. Where this is not practicable, proposed construction off-ROW access routes will be identified and approved by BLM before construction.
- Outside of the trench areas, grading and vegetation removal would be implemented only as needed to gain access to the work sites and establish a safe working environment at the pole structures.
- Any grading required on overland routes would be coordinated with BLM and grading will not commence without BLM approval.
- Equipment would not be operated within the river channel.
- In areas where vegetation is cleared for grading and over trenching, the upper six to ten inches of soil would be removed and stockpiled separately from any spoil. After line construction, disturbed areas would be graded to blend as near as possible with the natural contours, the upper six to ten inches of soil would be replaced and reseeded as necessary.

- All areas disturbed would be reclaimed in accordance to agency requirements and the Reclamation Plans contained in the project PODs.

## **4.6 VEGETATION**

### **4.6.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented and no new construction of the 25 kV distribution line, the 69 kV transmission line, or the Anticline substation would be authorized. Impacts to vegetation resources from disturbing an additional 461 acres (from Alternative II) to construct these facilities would not occur.

Construction of the 230 kV line would occur within the previously approved route paralleling Highway 191 and Highway 351 resulting in the construction of approximately 1 mile of additional 230 kV line than would be constructed under the proposed 230 kV route amendment in the Proposed Action that would parallel a portion of the proposed 25 kV distribution line. Both of these segments lie within Wyoming big sagebrush habitat. The approved 230 kV line segment would temporarily disturb approximately 26 more acres of big sagebrush habitat than the Proposed Action 230 kV route amendment segment (Alternative II).

### **4.6.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

Direct impacts would include the removal of vegetation from the pole installation areas for overhead construction (0.23 acres) and construction of the substation (12 acres). Vegetation would also be impacted by damage from vehicles and heavy equipment on the overhead alignment and temporary use areas, trenching activity to bury 2.1 miles of the 25 kV distribution line, and approximately 3 additional acres temporarily impacted at the substation location. The Proposed Action would impact a maximum of 744 acres (total area of construction easements) of vegetation, most of which would be reclaimed following construction except for the 12 acre substation area and the pole installation locations. The approval of the 230 kV route amendment in the Proposed Action would reduce the area disturbed to construct the entire 230 kV project by approximately 26 acres. Therefore, the Proposed Action would increase vegetation disturbance in the Pinedale management area by 461 acres more than the No Action alternative, approximately 12.23 acres of this impact would be permanent vegetation loss.

The majority of the disturbance would occur in the big sagebrush shrubland or sagebrush steppe vegetation type, vegetation types that are abundant and have a wide area of distribution in southwestern Wyoming. Approximately 10 acres of the 25 kV line construction easement would be located in the New Fork River riparian and floodplain area. Accessing poles in the riparian areas via existing roads and/or overland routes to the extent feasible would minimize vegetation removal in riparian areas. The work areas at all structure sites and pulling and tensioning sites would be cleared of vegetation only to the extent necessary, (i.e. small brush) would be driven over rather than cleared.

In areas where vegetation is cleared by grading for structures and access on steep terrain and in areas of trenching, the upper six to ten inches of soil would be removed and stockpiled separately from any spoil. After line construction, disturbed areas would be graded to blend as near as

possible with the natural contours, the upper six to ten inches of soil would be replaced and reseeded as necessary. Overland access routes utilized during construction would be reclaimed and reseeded upon completion of construction. Reclamation would occur according to agency requirements and the Reclamation Plans contained in the project PODs. Appropriate seed mixtures would be broadcast on the disturbed area, after seedbed preparations are complete. After broadcasting, the seed would be lightly harrowed or raked into the ground. Post reclamation efforts would include monitoring and invasive weed control. If native seed mix does not successfully re-establish, non-native non-invasive species may be introduced if approved by BLM as meeting the range and wildlife management goals of the Pinedale RMP.

The seed mixtures would be used to promote establishment of grasses in the short-term while the shrubs would become established over a longer period. Grasses could require 2 to 3 years for successful re-establishment in the area's arid environment. The shrub component may require more than 20 to 50 years for recovery to pre-disturbance levels after reseeded and reclamation. Long-term productivity of grasses would not be affected.

#### **4.6.3 Alternative III**

Approximately 21.5 miles of overhead line and 2.1 miles of underground line would be constructed. Vegetation disturbance would be limited to 345 acres if construction is limited to the 25 kV distribution line, only 0.15 acre of this impact would be a permanent loss of vegetation. Alternative III would result in 345 more acres of vegetation impacts than No Action, but would result in 116 fewer acres of new vegetation impacts than the Proposed Action. Permanent disturbance would be limited to the pole locations; permanent loss of 12 acres of sagebrush habitat due to the construction of the substation would not occur. Construction access and techniques for building the overhead and underground lines and post construction reclamation, including work in the New Fork River riparian and floodplains areas, would occur as described for the Proposed Action.

#### **4.6.4 Alternative IV**

Construction of the 25 kV distribution line, the 69 kV transmission line, and Anticline substation would disturb 487 acres of predominantly big sagebrush shrubland and sagebrush steppe vegetation, with permanent losses limited to the 12 acre substation and pole locations (0.19 acre). 26 miles of overhead line and 2.1 miles of underground line would be constructed. Construction access and techniques for building the overhead and underground lines and post construction reclamation, including work in the New Fork River riparian and floodplains areas, would occur as described for the Proposed Action.

Vegetation impacts would be 142 acres greater under Alternative IV than Alternative III; and 26 more acres of vegetation impacts would occur under Alternative IV than the Proposed Action because the longer approved 230 kV line route would be built under the Alternative IV scenario.

#### **4.6.5 Cumulative Impacts**

The big sagebrush shrubland is the dominant vegetation type along the distribution and transmission line route alignments, substation and surrounding areas. Due to the widespread distribution of big sagebrush shrubland in southwest Wyoming, a relatively small proportion of this plant community would be impacted by the Proposed Action. Reclamation and revegetation

efforts would be required for all of the proposed electrification projects. These efforts typically involve recontouring and planting of native grasses and shrub seed. This would result in the establishment of grasses in the short-term while the shrubs would become established over a longer period. Grasses could require 2 to 3 years for successful re-establishment in the area's arid environment. The shrub component may require more than 30 years for recovery to pre-disturbance levels after reseeding and reclamation.

#### **4.6.6 Mitigation Measures**

Mitigation measures proposed to limit/offset vegetation impacts focus on minimizing vegetation removal, controlling introduction/spread of invasive weedy species, and restoration of sagebrush and grassland habitats.

- Existing access roads and two-tracks would be used to gain access to the ROW and to move construction equipment to the area. For structures not immediately adjacent to existing roads, the contractor would travel overland within the authorized ROW from the nearest existing access road.
- Outside of the trench areas, grading and vegetation removal would be implemented only as needed to gain access to the work sites and establish a safe working environment at the pole structures.
- The work areas at all structure sites and pulling and tensioning sites would be cleared of vegetation only to the extent necessary, i.e. small brush would be driven over rather than cleared.
- In areas where vegetation is cleared for grading and over trenching, the upper six to ten inches of soil would be removed and stockpiled separately from any spoil. After line construction, disturbed areas would be graded to blend as near as possible with the natural contours, the upper six to ten inches of soil would be replaced and reseeded as necessary.
- Construction equipment would be thoroughly washed before entering Sublette County. Vehicles operating in the floodplain of the New Fork River would be washed before entering other areas with aquatic habitat to avoid transferring aquatic invasive species. Reclamation would occur in accordance to agency requirements and the Reclamation Plans contained in the project PODs.
- All seed mix, erosion control materials, and reclamation materials would be certified weed free.
- All reclamation of disturbed land would be conducted with a diverse mix of noninvasive, certified weed-free seed demonstrated effective for post-disturbance land uses and approved by the BLM. In designated and important wildlife habitats, this mix should be designed to restore pre-disturbance wildlife use.
- Monitor reclamation efforts and control invasive species after construction and reclamation work is completed. The BLM and Sublette County Weed and Pest Control would be consulted to determine treatment for noxious weeds, if identified.

## **4.7 SENSITIVE STATUS PLANTS**

### **4.7.1 Alternative I – No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented and no new construction would be authorized. Potential disturbance to sensitive plants or suitable habitat within the proposed 25 kV distribution line, 69 kV transmission line, and Anticline substation would not occur.

Construction of the 230 kV line would occur within the previously approved route resulting in the construction of approximately one additional mile of 230 kV line than would be constructed under the 230 kV route amendment in the Proposed Action. The approved 230 kV line segment would disturb approximately 26 acres more than the Proposed Action 230 kV route amendment.

### **4.7.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

Suitable habitat for Trelease's racemose milkvetch, meadow milkvetch, and Ute ladies'-tresses exist within the vicinity of the proposed 25 kV distribution line and 69 kV and amended 230 kV transmission line route amendment and the proposed Anticline substation area. Trelease's racemose milkvetch, meadow milkvetch, and Ute ladies'-tresses have not been documented. Although BLM sensitive species meadow milkvetch is not listed as a species that occurs in the Pinedale Field Office area, WYNDD documented potential suitable habitat within one mile of the Proposed Action project area.

Areas containing moist soils in mesic or wet meadows, subirrigated or seasonally flooded soils in valley bottoms, gravel bars, old oxbows, or floodplains bordering springs, lakes, rivers or perennial streams between 4,500 and 6,800 feet in elevation could support Ute ladies'-tresses. Poles placed in the New Fork River riparian and floodplain areas would be located in areas that can be accessed from existing and/or upland routes to the extent feasible and within engineering constraints while considering a safe work environment for workers to minimize disturbance in the riparian area, thus minimizing potential impacts to Ute ladies'-tresses habitat.

Landform and/or soil conditions within the sagebrush habitat in the project area may be suitable to support several BLM sensitive plant species. Such habitat, if present, would be temporarily impacted by the proposed project construction. However, no sensitive plants have been documented in the area and the large portion of the proposed route alignments and substation location are located within and adjacent to areas already disturbed or approved for future development in the PAPA.

Therefore, the Proposed Action is not expected to have a direct effect on any ESA listed or BLM sensitive species and is not likely to cause a trend to federal listing or a loss of viability of any sensitive plant species. However, the Proposed Action would increase vegetation disturbance in the Pinedale management area by 461 acres more than the No Action alternative and would therefore increase the disturbance (primarily temporal disturbance) to sensitive plant habitat.

### **4.7.3 Alternative III**

Alternative III would result in 345 more acres of vegetation impacts than No Action, but would result in 116 fewer acres of new vegetation impacts than the Proposed Action. Permanent disturbance would be limited to the pole locations; permanent loss of 12 acres of sagebrush habitat due to the construction of the substation would not occur. Potential impacts to suitable habitat for BLM sensitive plant species habitat would be greater under Alternative III than No Action but would be less compared to the Proposed Action. As per the Proposed Action, limitation of construction equipment in the New Fork River riparian and floodplain would minimize impacts to habitat that could support to Ute ladies'-tresses.

### **4.7.4 Alternative IV**

New construction disturbance under Alternative IV would be 487 acres more than No Action and 26 acres more than the Proposed Action, including the 12 acre loss of sagebrush habitat at the substation. Vegetation impacts would be 142 acres greater under Alternative IV than Alternative III. Therefore, potential impacts to sensitive plants suitable habitat would greater under Alternative IV than any of the other alternative. However, per the Proposed Action, limitation of construction equipment in the New Fork River riparian and floodplain would minimize impacts to habitat that could support to Ute ladies'-tresses.

### **4.7.5 Cumulative Impacts**

Sagebrush-dominated habitat that supports several sensitive plants species in the Pinedale Field Office areas would be impacted by the soil and vegetation disturbance associated within construction of the Anticline Electrification projects. However, few acres will be permanently impacted, and shrub habitat should begin to recover after 15 - 30 years. Cumulative impacts to threatened, endangered, candidate, or BLM sensitive plant species are not anticipated because the species have not been reported in the project areas and the areas would be reclaimed as part of the Proposed Action.

### **4.7.6 Mitigation Measures**

The following measures are recommended to protect habitat that could support federally listed and BLM sensitive species:

- Existing access roads and two-tracks would be used to gain access to the ROW and to move construction equipment to the area. For structures not immediately adjacent to existing roads, the contractor would travel overland within the authorized ROW from the nearest existing access road. Upland routes would be used as feasible if overland tracking is needed to access pole locations in the New Fork riparian area.
- Outside of the trench areas, grading and vegetation removal would be implemented only as needed to gain access to the work sites and establish a safe working environment at the pole structures.

## **4.8 NOXIOUS WEEDS AND INVASIVE SPECIES**

### **4.8.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the additional 487 acres disturbed in the proposed 25 kV line, 69 kV line, and substation project areas would not occur. Thus, avoiding an additional opportunity for weedy species to spread in the area or be introduced to the area.

However, construction of the approved 230 kV transmission route would disturb approximately 26 acres more than Proposed Action 230 kV route amendment. Although the approved route generally parallels existing roadways, soil disturbance would occur in a similar manner and the possibility of weedy species introduction would be similar along both routes. Therefore, under the No Action alternative, construction of the 230 kV transmission line would open up more area for weedy species introduction than construction of the line in the proposed 230 kV route amendment. Weed management efforts would not change in the Pinedale management area.

#### **4.8.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

Invasive and noxious weed species can be introduced and become established in areas disturbed by construction, vehicle traffic, road maintenance, and topsoil removal. Invasive plant species are commonly found on newly disturbed and reclaimed sites. Construction of the projects would increase the potential for introduction of noxious and invasive plants to the oil and gas field area.

Establishment of noxious weeds leads to displacement of native species and shifts in plant community composition and ecosystem functioning. The resulting changes in the plant community can alter wildlife habitat, wildlife and livestock forage, and the fire regime. Additionally, sites dominated by weeds often have a different visual character that may contrast with the surrounding native vegetation. Indirect impacts resulting from weed infestations on the alignment would include changes in the fire cycle and increased economic costs from weed management efforts. The establishment of some invasive and noxious weed species can result in long-term reclamation problems. Cultural (i.e., mechanical or grazing methods) and chemical controls are generally required to eliminate or control these species.

Although some weed infestation may be anticipated in areas disturbed by construction of the Proposed Action projects, the application of weed preventative and control measures as outline in the project PODs would minimize impacts from weed species. These measures include careful handling of vegetation and soils stripped from identified weed infestations, cleaning of equipment before and after entering the management area to prevent the transport of weed seeds from or to other locations, the use of weed-free mulch and straw bales to control erosion, prompt establishment of the desired vegetation after construction, use of certified “noxious weed-free” seed on all areas to be seeded, and subsequent monitoring and treatment methods after construction and reclamation work is completed. Implementation of these measures would reduce the potential spread of weedy species and impacts associated with non-native species invasion.

#### **4.8.3 Alternative III**

Alternative III would potentially disturb 345 more acres than No Action, and 116 fewer acres than the Proposed Action. Implementation of proposed weed control measures described previously would reduce the potential spread of weedy species and impacts associated with non-native species invasion avoiding long-term adverse impacts.

#### **4.8.4 Alternative IV**

As discussed previously more area would be disturbed under Alternative IV than any of the other alternatives, resulting a slightly higher probability of weedy species being introduced to the area. However, implementation of proposed weed control measures described previously would reduce the potential spread of weedy species and impacts associated with non-native species invasion avoiding long-term adverse impacts.

#### **4.8.5 Cumulative Impacts**

Past, ongoing and reasonably foreseeable activities in this area include oil and gas development, ranching and grazing. These activities have all contributed to native vegetation removal and an increase in invasive and noxious weed species in the area. The Anticline Electrification project would occur adjacent to gas and oil facilities in a designated utility corridor. Reclamation efforts have been implemented for previously disturbed areas but extensive areas remain unclaimed. The proposed electrical facilities would impact additional acreage in this area and require reclamation of all disturbed areas. This additional disturbance would increase the likelihood of noxious and invasive weeds being introduced to the area.

#### **4.8.6 Mitigation Measures**

Measures to prevent introduction and spread of invasive weedy species would be as follows:

- Construction vehicles and equipment would be cleaned, power-washed, and free of soil, seeds and vegetation debris before entry and use of access roads to prevent transporting weed seeds and before moving on to other sites after the Anticline Electrification project construction is completed.
- All seed mix, erosion control materials, and reclamation materials would be certified weed free.
- Monitor reclamation efforts and control invasive species after construction and reclamation work is completed. The BLM and Sublette County Weed and Pest Control would be consulted to determine treatment for noxious weeds, if identified.

### **4.9 THREATENED, ENDANGERED OR CANDIDATE SPECIES/BLM SENSITIVE SPECIES**

#### **4.9.1 Alternative I - No Action Alternative**

Under the No Action Alternative, BLM would deny the Proponent's application to construct the 25 kV distribution line, the 69 kV transmission line, the 230 kV transmission line route amendment and the Anticline substation. None of the effects to threatened, endangered or candidate species and special status species discussed below would occur in the 25 kV, 69 kV and substation project areas. However, construction of the approved 230 kV transmission line would result in an additional mile of overhead 230 kV line to be constructed in the Pinedale management area than would be constructed if the route was amended as proposed under Alternative II. A portion of the approved 230 kV line lies within the 2 mile buffer of several greater sage grouse leks and within 0.5 mile of a ferruginous hawk nest.

## **4.9.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

### **4.9.2.1 Endangered Species Act Animal Species**

Species listed or candidate for listing under the ESA which are known or could potentially occur in project area include the black-footed ferret (endangered), greater sage-grouse (candidate), and yellow-billed cuckoo (candidate). Four endangered fish species (Colorado pikeminnow, humpback chub, bonytail chub, and razorback sucker) inhabit the Colorado River System downstream from the project area in the Green River, below Flaming Gorge Dam.

#### ***Black-footed Ferret***

Potentially suitable habitat for black-footed ferrets is present within the project area where white-tailed prairie dog colonies occur. Short-term disturbance to prairie dog colonies would likely occur as a result of the Proposed Action construction activities including cross country movement of construction equipment to the pole installation locations and between poles to string the line. A minor loss of prairie dog habitat would result from the placement of poles within prairie dog towns. A maximum of 28.7 acres would be temporarily disturbed within the prairie dog towns during construction of the 25 kV and 69 kV lines and approximately 576 square feet (0.013 Ac) of area would be permanently impacted due to the placement of approximately 36 poles in the mapped prairie dog towns.

Reclamation efforts in all areas of ground disturbance in the prairie dog towns would target reestablishment of native grass and shrubs suitable for white-tailed prairie dogs and stabilize soil and control weeds per BLM requirements.

Placement of the poles and lines in the area could attract raptors and increase diurnal hunting in the prairie dog town areas. The proposed perch deterrents would reduce but not exclude raptor use of the power poles. However, if black-footed ferrets were to re-populate the area, the poles and lines should not contribute to black-footed ferret predation as black-footed ferrets are nocturnal. Despite potential impacts to prairie dogs, a black-footed ferret prey base, direct impacts to black-footed ferrets are not expected because recent surveys in the project area failed to locate black-footed ferrets.

#### ***Colorado River Fish***

The USFWS has incorporated a Recovery Implementation Program Recovery Action Plan which identifies actions currently believed to be required to recover the endangered fishes in the most expeditious manner in the Upper Colorado River Basin. Water depletions from tributary waters within the Colorado River Basin are considered to jeopardize the continued existence of these fish species. There would be no use or depletion of surface water sources with the Proposed Action. Therefore, the Proposed Action would not impact these fish species or the proposed recovery actions.

#### ***Greater Sage-Grouse***

Sage-grouse may be impacted by temporary removal or crushing (reduction in habitat quality) of sagebrush habitat during construction, disturbance from construction noise and human activity, permanent loss of sage brush habitat at pole installation locations and the Anticline substation

site, potential increase in predation if pole structures are used as raptor perches, and potential avoidance of habitat in the vicinity of the transmission structures.

Impacts to vegetation can reduce nesting and foraging habitat through direct disturbance and indirectly through the proliferation of noxious weeds and other invasive species. Weeds would decrease habitat quality within the project area and could spread to areas outside the project alignments. Therefore, impacts to sagebrush-dependent species such as sage-grouse could increase with increased surface disturbance.

Sage-grouse would be temporarily impacted by the reduction of habitat during construction and reclamation. Following successful reclamation of the temporarily disturbed areas, there would be no long-term impacts to desert steppe habitat except for approximately 10,865 square feet (0.25 acre) lost to pole construction and 12 acres at the substation.

Pole structures offer perches for raptors and may increase raptor predation in the project area. A study in southwestern Wyoming suggested perch deterrents can reduce raptor and raven predation (Slater and Smith 2008). Results of driving surveys, behavioral observations and prey remains surveys all suggested raptor use of cross arm and pole top perches was significantly lower on lines with deterrents compared to lines without deterrents. A ten-fold decrease in single prey items were found under the lines that had deterrents installed (Slater and Smith 2008). The perch deterrents reduced but did not exclude raptor use of the power poles. All overhead lines would be required to be constructed using a perch minimizing design, including pole caps. The design would consist of post-side mount insulators on the 25 kV and 69 kV lines and pole caps on the 230 kV line using best available science for minimizing perching while maintaining raptor safe design.

The distribution and transmission line structures do not result in habitat fragmentation for most species since they have a relatively small footprint. The poles are not expected to restrict the movement of sage-grouse. However, some studies have indicated that sage-grouse avoid vertical structures, possibly due to increased concentration of raptors using the poles as perches (Holloran and Anderson 2005). To reduce the number of overhead line and support poles, the 25 kV tap lines would be buried except in locations where the lines are required to cross the designated pipeline corridors.

Construction of the transmission and distribution lines across sagebrush habitat could alter the utilization of the habitat by sage-grouse. Greater sage-grouse nesting and brood rearing habitat is assumed to include areas within a 2-mile radius around each active lek. Most of the 25 kV line, all of the 69 kV line, and approximately 7.5 miles of the amended 230 kV line would cross habitat within 2 miles of known leks. Approximately 3,000 linear feet of the 25 kV and 69 kV lines would cross within almost 0.25 mile of one documented lek if Segment 2A is the selected route for the 25 kV line Segment 2. Both other Segment 2 alternatives (2B and 2C) would lie at least 800 feet from the 0.25 mile buffer. Of these two alternatives, Segment 2C would be approximately 400 feet further west of this 0.25 mile lek buffer and would lie downslope of a ridgeline placing the poles out of the line of sight of this lek buffer.

Surface disturbing and disruptive activities would be prohibited in suitable sage-grouse nesting and early brood-rearing habitat within two miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitat outside the 2-mile buffer, from March 15 to July 15. Surface disturbing and disruptive activities would also be prohibited within 0.25 mile of an occupied lek from 8 p.m. to 8 a.m. from March 1 to May 15. Long-term impacts to sage grouse from construction are not anticipated if seasonal stipulations are followed. However, long-term impacts to sage grouse may occur from loss of suitable habitat and the indirect behavioral changes resulting from new overhead structures – avoidance of tall structures to avoid predation by raptors. In the 25 kV Segment 2 section where the project lies closest to the any lek as discussed above, locating the line along the Segment 2C route would place the line in a location not visible from these leks.

Sage-grouse winter concentration areas would be crossed by a portion of the 25 kV line Segment 4 (and parallel proposed 230 kV line) and the underground section of Segment 5. Surface disturbing and disruptive activities would be prohibited within sage-grouse winter concentration areas from November 15 to March 15 to avoid impacts to sage grouse in the local area including any that would reside in the Core Population areas identified several miles east of the project area.

Management actions adopted in BLM's current Pinedale Resource Management Plan (BLM 2008) are targeted to maintain self-sustaining, productive sage-grouse populations in the planning area. The Pinedale RMP wildlife management actions for traditional leasing areas include sage grouse protection measures consistent with or more restrictive than IM WY-2012-019 guidelines for activities outside of sage grouse Core Population Areas and in winter concentration areas. These management actions were analyzed in the Pinedale RMP 2008 NEPA analysis. The proposed action adopts all the current Pinedale RMP management actions that protect greater sage-grouse including more restrictive surface disturbing and disruptive activities prohibitions than specified in the WY-2012-019.

Greater sage-grouse would not be significantly impacted because greater seasonal restrictions would be followed, disturbance of sagebrush habitat would be minimized as practicable to allow a safe work environment, all temporarily disturbed areas would be restored and revegetated, and overhead lines would be constructed using a perch minimizing design, including pole caps.

### ***Yellow-Billed Cuckoo***

The 25 kV line crossing the New Fork River would be located in potential western yellow-billed cuckoo habitat. The construction easement at this crossing would encompass approximately 10 acres. An estimated 16 poles may be placed within the New Fork River riparian/floodplain habitat which would result in the loss of approximately 256 square feet of riparian/floodplain habitat (0.006 Ac). All other vegetation impacts would be temporary and would not be expected to occur throughout the entire 10 acre construction easement since existing and/or overland routes would be used to access pole sites where feasible to minimize vegetation disturbance/removal in the New Fork River riparian and floodplain areas. These minor vegetation impacts would not negatively impact the yellow-billed cuckoo. Additional potential impacts to the cuckoo could include collisions with the overhead distribution line at the river crossing. However, the potential of this impact would be reduced with the incorporation of flight diverters on the segment of the distribution line crossing that crosses the river.

#### **4.9.2.2 BLM Sensitive Animal Species**

Most impacts to BLM sensitive wildlife would be short-term and would involve, but not be limited to, removal (habitat loss or fragmentation) or crushing (reduction in habitat quality) of existing vegetation, soil compaction, and disturbance from construction noise and human activity. Impacts to vegetation can reduce nesting and foraging habitat from direct disturbance and indirectly from proliferation of noxious weeds and other invasive species. Weeds would decrease habitat quality within the project area and could spread to areas that support sensitive species outside the alignment. Therefore, impacts to sensitive species could increase with increasing surface disturbance within suitable habitat for each species if weeds become established in areas disturbed by project construction. Following successful reclamation, there should be no long-term significant impacts to vegetation productivity although there may be a change in species composition as a result of the reclamation.

Construction is not expected to create long-term new edge features in sagebrush habitat that would inhibit movement of sagebrush species through otherwise continuous habitat. Transmission line support structures do not result in habitat fragmentation for most species since they have a relatively small footprint. The poles are not expected to restrict the movement any species. However, transmission structures offer perches for raptors and may increase predation on sensitive species. Therefore, there may be avoidance of suitable habitat near transmission lines by special status species due to increased concentration or composition of raptors using the structures as perches. All overhead lines would be required to be constructed using a perch minimizing design, including pole caps. The design would consist of post-side mount insulators and pole caps using best available science for minimizing perching while maintaining raptor safe design. Additionally, to reduce the number of overhead line and support poles, the 25 kV tap lines would be buried except in locations where the lines are required to cross the designated pipeline corridors.

Following successful reclamation of the temporarily disturbed areas, there would be no long-term impacts to desert steppe habitat except for approximately 10,865 square feet (0.23 acre) lost to pole construction and 12 acres at the substation. An estimated 16 poles may be placed within the New Fork River riparian/floodplain habitat which would result in the loss of approximately 256 square feet of riparian/floodplain habitat (0.006 Ac).

#### ***Pygmy Rabbit***

Pygmy rabbits would be impacted by the temporary crushing and removal of big sagebrush within the construction corridors and area surrounding the Anticline substation and permanent loss of sagebrush habitat at the pole locations (maximum 0.23 acre) and the substation (12 acres). Pygmy rabbits need stands of relatively taller and denser sagebrush than the surrounding habitat. Pygmy rabbits may not use sagebrush that begins to re-establish in a reclaimed area for approximately 30 years, resulting in a longer term loss of habitat. Pygmy rabbits could also experience increased predation from temporary loss of shrub cover and potential increase in raptor perching within the distribution and transmission line ROWs. These actions could adversely affect pygmy rabbits.

### ***White-tailed Prairie Dog***

The 25 kV distribution line and 69 kV transmission line would cross approximately 5,000 feet of mapped white-tail prairie dog towns (the two lines would be constructed adjacent to each other thus impacting the same general area). A maximum of 28.7 acres would be temporarily disturbed within the prairie dog towns during construction of the 25 kV and 69 kV lines. Short-term disturbance to prairie dog colonies would likely occur as a result of the Proposed Action construction activities including cross country movement of construction equipment to the pole installation locations and between poles to string the line. A minor loss of prairie dog habitat would result from the placement of poles within prairie dog towns. Approximately 576 square feet (0.013 Ac) of area would be permanently impacted due to the placement of approximately 36 poles in the mapped prairie dog towns.

Placement of the poles and lines in the area could attract raptors and increase diurnal hunting in the prairie dog towns. The proposed perch deterrents would reduce, but not exclude, raptor use of the power poles. A slight increase in predation may be expected to impact individual prairie dogs, but would not negatively affect the population at the colony level.

Reclamation efforts in all areas of ground disturbance in the prairie dog towns would target re-establishment of native grass and shrubs suitable for white-tailed prairie dogs and stabilize soil and control weeds per BLM requirements.

### ***Idaho Pocket Gopher***

Idaho pocket gopher habitat would be impacted by the temporary crushing and removal of big sagebrush within the construction corridors and area surrounding the Anticline substation and permanent loss of desert steppe habitat at the pole locations (0.25 acre) and the substation (12 acres). The temporarily impacted sage-grassland would be revegetated, although a change in species composition could be expected on a short-term or long-term basis and there would be an increased potential for weedy species to become established. A slight increase in predation could occur if the Idaho pocket gopher occurs in the project area.

### ***Bats***

The minor impact to the riparian vegetation should not have any impact on bat nocturnal foraging activities or migratory movements.

### ***Trumpeter Swan***

The minor impact to the riparian vegetation in the New Fork River floodplain would have an unmeasurable effect on trumpeter swan forage habitat. Flight diverters be placed on the lines within the New Fork River riparian and floodplain area would minimize the probability of trumpeter swans colliding with the overhead distribution lines across the New Fork River. No significant impact to trumpeter swans would result from construction or operation of the project.

### ***Sensitive Raptors***

Most of the currently active raptor nests (use within the last 3 years) within the proposed project area lie within the New Fork River riparian area, except for two burrowing owl nests in the 25 kV Segment 2 / Segment 6 areas, and several ferruginous hawk nests south of Highway 351.

Neither of these ferruginous hawk nests occur within 1 mile of the proposed project routes (although one lies within 0.5 mile of the approved 230 kV route segment).

One burrowing owl nest lies within several hundred feet of the 25 kV Segment 2B\C alternative ROW (approximately 1,000 feet west of a sage-grouse lek 0.25 mile buffer). Segment 2A would lie at least 1000 feet from this burrowing owl nest but would lie just immediately adjacent to the lek 0.25 mile buffer for approximately 2,000 feet. Therefore, selection of the Segment 2B/C alternative to move further from the sage-grouse lek would bring this line segment closer to this burrowing owl nest. The second burrowing owl nest lies within approximately 800 feet of the 25 kV Segment 6 near an existing pipeline/road. No surface-disturbance would be permitted within 0.5 mile of burrowing owl nests from April 1 through August 15.

If surveys find any newly active ferruginous hawk or bald eagle nests within 1 mile of the project area, no surface-disturbance would be permitted within 1 mile of active ferruginous hawk nests from February 1 through July 31 or from February 1 through August 15 within 1 mile of bald eagle nests. No permanent structures requiring repeated human presence would be permitted within 1,400 feet of ferruginous hawk nests or 2,600 feet from bald eagle nests. The current construction proposal would start August 16 and be completed by January 31 to avoid impacts to nesting raptors. These seasonal timing stipulations and surface use restriction would protect nesting habitat; however, impacts to foraging habitats in the form of loss of prey species and prey species habitats could still occur outside of the restricted periods.

Raptors may also be impacted by increased fatalities due to electrocutions and collisions with transmission lines. The proposed overhead crossing would be raptor safe in accordance with APLIC recommendations, a perch minimizing design (including pole caps), and bird flight diverters would be installed within the riparian corridor.

### ***Long-billed Curlew***

The segments of the distribution and transmission lines that cross mixed grass habitat could impact long-billed curlew habitat. It is estimated that approximately one mile of the 25 kV and 69 kV lines would cross mixed grass habitat. Approximately 38 poles would be installed across this habitat that would result in a loss of approximately 576 square feet of mixed grass habitat. The short-term disturbance to the approximately 30 acres of mixed grass habitat within the 25 kV and 69 kV construction corridors, minor permanent loss of habitat and potential increase in raptor predation should not adversely impact long-billed curlews in the project area.

### ***Mountain Plover***

Mountain plovers that may use prairie dog towns or other grassland and short sagebrush habitat along the alignment would be temporarily displaced during construction and experience a short-term loss of habitat while grass species become re-established in the areas disturbed by construction. Permanent loss of habitat due to pole construction would be minor (less than 0.1 acre). This minor permanent loss of habitat and potential increase in predation is not expected to not adversely impact mountain plovers in the project area.

### ***Loggerhead Shrike***

The most significant impact to loggerhead shrikes would likely be the longer-term loss of big sagebrush from the construction corridors (approximately 650 acres) that offer hunting perches and nesting habitat. Mature big sagebrush would not be expected to be restored to these areas for decades. However, there is an abundance of big sagebrush habitat in the project vicinity so it loggerhead shrikes would have thousands of acres of big sagebrush habitat available in adjacent areas while the construction corridors recover and, therefore, should not be significantly impacted.

### ***Sagebrush Dependent Songbirds***

The crushing or removal of sagebrush habitat (approximately 650 acres) in the construction corridors would result in a long-term loss (at least 30 years) of habitat for sage sparrow, sage thrasher, and Brewer's sparrow. Approximately 12.23 acre of sagebrush habitat would be permanently lost due to construction of the poles and substation. These species could also experience an increase in predation. The project would have a negative impact on sagebrush-obligate bird species until sagebrush was re-established in the project area. However, since abundant sagebrush habitat occurs in adjacent areas impacts to the sagebrush-obligate songbirds should not be significant.

### ***Sensitive Fish Species***

Removal of riparian habitat could increase erosion and impact water quality in the project area riparian/floodplain habitat. However, strategic selection of pole locations in the New Fork River riparian and floodplain area and access to those pole locations via existing and/or upland routes as feasible would minimize vegetation removal in riparian areas. Construction vehicles would not track across the river channel. Impact to the New Fork River riparian vegetation is expected to be minimal.

The trenching of the underground segments of the 25 kV line would occur at least 3,000 feet from the New Fork River. Erosion control measures developed in the project Stormwater Pollution Protection Plan would prevent sediment from leaving the project work area or entering wetlands. All chemicals, solvents and fuels would be kept 500 feet away from the New Fork River and associated wetlands.

The unintentional spread of aquatic invasive species from one body of water to surface waters within the project area may be considered a violation of Wyoming Game and Fish Commission regulations. If aquatic invasive species are spread into the project area, aquatic species may be impacted. However, no equipment will enter water bodies.

No direct impacts to aquatic species would occur and no construction is anticipated to deliver sediment to the river. Therefore, there will be no impact to aquatic habitat or the sensitive fish species in the New Fork River and downstream habitats.

### ***Northern Leopard Frog***

Riparian habitat impacts will be minimal, only 256 square feet of riparian habitat would be permanently impacted by pole construction in the New Fork River riparian/floodplain area. Erosion control measures developed in the project Stormwater Pollution Protection Plan would

prevent sediment from leaving the project work area or entering wetlands. All chemicals, solvents and fuels would be kept 500 feet away from the New Fork River and associated wetlands. The minor disturbance to riparian habitat would not adversely impact northern leopard frogs.

### **4.9.3 Alternative III**

Fourteen fewer miles of overhead line would be constructed and 116 fewer acres would be disturbed under Alternative III than the Proposed Action reducing the area of potential habitat impacts and number of tall structures and elimination of the 12 acres of permanent habitat loss at the proposed substation site.

#### **4.9.3.1 Endangered Species Act Animal Species**

Impacts to the prairie dog towns would be reduced to the placement of 18 poles (288 square feet permanent impact) and maximum of 11.5 acres of temporary vegetation impacts within a 100-foot wide construction easement. The reduced number of poles would decrease the potential increase in raptor predation of prairie dogs, thus reducing the impact to black-footed ferret prey. Similar to the Proposed Action no impacts to downstream fisheries would occur under Alternative III. Potential impacts to greater sage-grouse would be reduced with construction limited to the 25 kV line. Temporary disturbance areas in sagebrush habitat would be reduced to the 100-foot-wide 25 kV corridor construction easement. Estimated permanent sagebrush habitat loss would be 6,960 square feet (0.16) following successful reclamation of the temporarily disturbed areas. Approximately 155 fewer poles would be erected under Alternative III than the Proposed Action reducing predator perches and number of poles visible from lek areas. All seasonal restrictions and design criteria enforced under the Proposed Action to protect greater sage-grouse would be implemented under Alternative III. Impacts to the New Fork River riparian/floodplain crossing would be the same as the Proposed Action as the 25 kV line is the only project feature crossing the river in either alternative. Thus potential impacts to the yellow-billed cuckoo would be the same under either the Proposed Action or Alternative III. Fewer overhead electrical lines in the area would reduce avian collisions with overhead power lines.

#### **4.9.3.2 BLM Sensitive Animal Species**

Temporary disturbance areas in sagebrush habitat would be reduced to the 100-foot-wide 25 kV corridor construction easement thus reducing impacts to all sagebrush-dependent bird and mammal species. Estimated permanent sagebrush habitat loss would be 6,960 square feet (0.16) following successful reclamation of the temporarily disturbed areas. Approximately 155 fewer poles would be erected under Alternative III than the Proposed Action reducing predator perches. All seasonal restrictions and design criteria enforced under the Proposed Action to raptor nests would be implemented under Alternative III. Fewer overhead electrical lines in the area would reduce avian collisions with overhead power lines.

Similar to the Proposed Action no impacts to downstream fisheries would occur under Alternative III. Impacts to the New Fork River riparian/floodplain crossing would be the same as the Proposed Action as the 25 kV line is the only project feature crossing the river in either alternative. Thus potential impacts to riparian-dependent sensitive species would be the same under either the Proposed Action or Alternative III.

#### **4.9.4 Alternative IV**

Alternative IV would impact 142 acres more than Alternative III, including the 12-acre permanent impact resulting from substation construction, and impact 26 more acres than the Proposed Action. Five more miles of overhead line would be constructed under Alternative IV than the Alternative III, and 1 more mile of overhead line would be constructed under Alternative IV than the Proposed Action since the approved 230 kV segment is 1 mile longer the proposed 230 kV route amendment. These increased habitat impacts would primarily result from be temporary disturbances associated with construction of one additional mile of 230 kV line.

##### **4.9.4.1 Endangered Species Act Animal Species**

Similar to the other alternatives there would be no impacts to black-footed ferrets or any impacts to downstream fisheries. Impacts to sage-grouse would be similar to the Proposed Action, increased impacts to sagebrush habitat would be limited to the construction of one additional mile of 230 kV line (approximately 6-7 additional poles) compared to the Proposed Action. Impacts to the potential yellow-bellied cuckoo habitat within New Fork River riparian/floodplain crossing would be the same as the Proposed Action as the 25 kV line is the only project feature crossing the river in either alternative.

##### **4.9.4.2 BLM Sensitive Animal Species**

Potential impacts to prairie dog towns would be slightly higher under Alternative IV than Alternative III or the Proposed Action as the original 230 kV line would cross several hundred feet of prairie dog town located along Highway 351 not crossed by the amended 230 kV in the Proposed Action. Impacts to sagebrush-dependent species, raptors, and riparian-dependent species would be similar to the Proposed Action.

#### **4.9.5 Cumulative Impacts**

As with other wildlife and plant species, the CIAA for threatened, endangered, and BLM sensitive animal species varies according to their range within the PFO. Impacts from this project would add to existing impacts from other disturbances in the CIAA and include direct loss of habitat, and indirect impacts from potential weed proliferation, noise, human presence, vehicle traffic, oil and gas development, grazing, and other activities resulting in direct mortality or loss of habitat quality.

##### **4.9.5.1 Endangered Species Act Animal Species**

No incremental impacts to black-footed ferrets or down river fish would occur so no impacts could occur to these species. The small impact to potential yellow-bellied cuckoo habitat should not contribute future impacts to yellow-bellied cuckoos. No other surface disturbance activities in the New Fork River riparian/floodplain are known to be proposed in the project area vicinity. The proposed project would contribute to incremental impacts to short-term disturbance and long-term loss of sagebrush habitat. However, these impacts would occur within areas designated for oil and gas development and would be minor compared to the cumulative effects of the existing and potential future oil and gas developments. Potential cumulative impacts to sage-grouse that could result from the Proposed Action would primarily be limited to temporary loss of sagebrush habitat, reduction of habitat used by sage-grouse due to the presence of pole structures and possible increased raptor predator. However, with implementation of the timing, design and mitigation stipulations potential cumulative impacts to sage-grouse would not be significant.

#### **4.9.5.2 BLM Sensitive Animal Species**

Cumulative impacts to BLM sensitive wildlife species are not anticipated because the species are not expected to be negatively affected as a result of the Proposed Action with implementation of the BLM wildlife stipulations and other project BMPs.

#### **4.9.6 Mitigation Measures**

##### **4.9.6.1 Endangered Species Act Animal Species**

The following BLM seasonal wildlife stipulations and BMPs would be applied to all route options to minimize impacts to federally listed or candidate species:

- Surface disturbing and disruptive activities would be prohibited in suitable sage-grouse nesting and early brood-rearing habitat within two miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitat outside the 2-mile buffer, from March 15 to July 15.
- Surface disturbing and disruptive activities would be prohibited within 0.25 mile of an occupied lek from 8 p.m. to 8 a.m. from March 1 to May 15.
- Surface disturbing and disruptive activities would be prohibited within sage-grouse winter concentration areas from November 15 to March 15.
- Flight diverters would be placed on all lines within the New Fork River riparian and floodplain area.
- All overhead lines would be required to be constructed using a perch minimizing design, including pole caps.
- All reclamation of disturbed land would be conducted with a diverse mix of noninvasive, certified weed-free seed demonstrated effective for post-disturbance land uses and approved by the BLM. In designated and important wildlife habitats, this mix should be designed to restore pre-disturbance wildlife use.
- Survey white-tail prairie dog towns for black-footed ferrets in nonblock cleared areas as directed by USFWS in accordance with current USFWS guidelines and recommendations.

Additionally, 25 kV tap lines would be buried except in locations where the lines are required to cross the designated pipeline corridors.

##### **4.9.6.2 BLM Sensitive Animal Species**

The following BLM seasonal wildlife stipulations and BMPs would be applied to all route options to minimize impacts to sensitive wildlife:

- All surface-disturbing activity would be seasonally restricted from February 1 through August 15 within a 0.5-mile radius of all active raptor nests. An active raptor nest is defined as a nest that has been occupied within the past 3 years.
- All surface-disturbing activity would be seasonally restricted from March 1 through July 31 within a 1-mile radius of all active ferruginous hawk nests. An active ferruginous hawk nest is defined as a nest that has been occupied within the past 3 years.

- Surface disturbing or human activities would not be allowed between November 1 and April 1 within one mile of known bald eagle winter use areas.
- All surface-disturbing or human activity would be seasonally restricted from February 1 through August 15 within 1.0 mile of all active bald eagle nests. An active eagle nest is one that has been occupied once in the past 5 years.
- Surface disturbing activity in mountain plover habitat between April 10 and July 10, requires presence / absence surveys. Survey results would determine when activities would be permitted.
- Surface disturbing and disruptive activity would be prohibited within ½ mile of occupied burrowing owl nest from April 1 through August 15. Surveys may be required to determine nesting status.
- Activities and facilities that create barriers to the seasonal movements of big game would be avoided.
- Flight diverters would be placed on all lines within the New Fork River riparian and floodplain area.
- All overhead lines would be required to be constructed using a perch minimizing design, including pole caps.

Additionally, 25 kV tap lines would be buried except in locations where the lines are required to cross the designated pipeline corridors.

#### **4.10 WILDLIFE AND AQUATIC RESOURCES**

##### **4.10.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the 25 kV distribution line, the 69 kV transmission line, the 230 kV transmission line route amendment, and the Anticline substation would not be constructed. None of the effects to wildlife and aquatic resources discussed below would occur in the 25 kV line, 69 kV line, and substation project areas. However, the approved 230 kV transmission line is one mile longer than the amended 230 kV route. Twenty acres of the approved 230 kV line crosses mapped pronghorn migration corridors and 86 acres of pronghorn crucial winter range.

##### **4.10.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation - Proposed Action**

Most impacts to wildlife and aquatic resources would result from loss of seasonal forage habitat and degraded habitat quality. These changes in wildlife habitat and/or habitat quality can be caused directly or indirectly by project activities such as crushing or removing existing vegetation, soil compaction from construction and maintenance traffic, disturbance from noise and human activity, and increased erosion and sedimentation of streams and water resources. The Proposed Action would increase the impacts related to traffic noise and dust in the project area due to construction and the traffic related to workers commuting to the work sites. Increased traffic during construction could increase vehicle/wildlife collisions and stress on wildlife.

#### **4.10.2.1 Big Game**

During construction when noise and human presence are high within the area, big game would be displaced into adjacent habitat. Once construction and reclamation are complete, species are expected to return to their historic ranges and use patterns. Habitat loss or conversion could cause shifts in big game use in the area. For example, pronghorn may avoid the power line rights-of-way if they no longer provides suitable habitat or they may be attracted to the reclamation because it provides easy access to forage. Portions of the 25 kV, 69 kV lines, amended 230 kV line and approved 230 kV line would cross pronghorn crucial winter ranges and migration corridors. Only the 25 kV line would cross moose crucial winter range.

#### ***Pronghorn***

The migration corridor for pronghorn would be temporarily affected, but the power lines would not create a barrier for big game seasonal movement. Of the total of 744 acres that would be disturbed by the Proposed Action, a maximum of 89 acres would be located within pronghorn migration corridor if Segment 2C is selected for the 25 kV line route. Selection of the 25 kV Segment 2A or 2B routes would impact approximately half of the pronghorn migration area impacted by the Segment 2C alternative as shown in Table 4-6. The permanent ROW easement of the approved 230 kV line (No Action alternative) would also be encroach on 20 acres of the pronghorn migration corridor, approximately half of the Proposed Action alternative. Placement of the distribution and transmission lines across portions of the pronghorn migration corridor is not expected to negatively affect pronghorn use of corridor. Therefore, selection of the 25 kV segment 2 route option should not be based on level of pronghorn migration corridor impacts.

**Table 4-6. Proposed Action Acres of Impact – Pronghorn Migration**

<b>Action</b>	<b>Pronghorn Migration Impact (acres)</b>		
	<b>Temporary</b>	<b>Permanent</b>	<b>Total</b>
No Action (approved 230 kV seg.)	0	20	20
Proposed Action (with Segment 2A)	13	21	34
Proposed Action (with Segment 2B)	16	21	37
Proposed Action (with Segment 2C)	47	42	89

The entire Proposed Action project area north of Highway 351 and a portion south of the highway lies within pronghorn winter range. Approximately 178 acres of the permanent ROW areas plus the substation area lies within pronghorn crucial winter range under all of the 25 kV Segment 2 options, while temporary impacts differ slightly between these options. The Proposed Action would impact 91 more acres of pronghorn crucial winter range than the No Action alternative. However, pronghorn use of the area is not expected to change as they are currently observed using areas immediately adjacent to the oil and gas facilities in the PAPA. Permanent loss of the pronghorn crucial winter range would occur at the substation (12 acres) and pole locations (approximately 0.15 acre).

**Table 4-7. Proposed Action Acres of Impact – Pronghorn Crucial Winter Range**

Action	Pronghorn Migration Impact (acres)		
	Temporary	Permanent	Total
No Action (approved 230 kV seg.)	0	86	86
Proposed Action (with Segment 2A)	220	177	397
Proposed Action (with Segment 2B)	214	178	392
Proposed Action (with Segment 2C)	212	178	390

An exception to BLM’s pronghorn winter range restrictions may be requested to allow for the construction of all project features in a single construction season that would not start until August 16 to accommodate other sensitive species restrictions listed in Section 4.9. Portions of the project may need to be constructed within pronghorn winter range (not overlapping with greater sage-grouse winter concentration areas and moose crucial winter range) between November 15 and January 31. Disturbance during occupancy of crucial winter range may result in higher density use in other areas of crucial winter range and use of non-crucial range. However, this short-term disturbance is not expected to adversely impact pronghorn.

***Moose***

The moose critical winter range is limited to the New Fork River riparian and floodplain area. Only the 25 kV line would cross this area – impacts would be the same under all alternatives except No Action as the approved 230 kV segment does not cross the New Fork River. Although permanent and temporary impacts would total 26 acres within the 25 kV line river crossing, temporary impacts in the New Fork River riparian and floodplain area would be minimal and no permanent loss of habitat is expected as minimal intrusion into these areas would occur during construction. The river crossing corridor includes few mature trees or shrubs, thus tall-growing riparian vegetation removal would be minimal for electrical line clearance. Activities or surface use would not be allowed from November 15 to April 30 within moose crucial winter habitat. Construction and operation of the 25 kV line across the New Fork River should not impact use of this area as moose crucial winter range.

**Table 4-8. Acres of Impact – Moose Crucial Winter Range**

	No Action Approved 230 kV Segment (acres)		25 kV Segment (same for Proposed Action, Alt III, and Alt IV) (acres)	
	Permanent	Temporary	Permanent	Temporary
Moose Crucial Winter Range	0	0	7	19

**4.10.2.2 Non-special Status Wildlife Species**

The crushing or removal of sagebrush habitat (approximately 650 acres) in the construction corridors would result in a long-term loss (at least 30 years) of habitat for the wildlife that use sagebrush habitat. Approximately 12.23 acre of sagebrush habitat would be permanently lost due to construction of the poles and substation. These species could also experience an increase in predation. The project would have a negative impact on sagebrush-obligate species until sagebrush was re-established in the project area. However, since abundant sagebrush habitat occurs in adjacent areas impacts to these species should not be significant.

An estimated 16 poles may be placed within the New Fork River riparian/floodplain habitat which would result in the loss of approximately 256 square feet of riparian/floodplain habitat (0.006 Ac). All other vegetation impacts would be temporary and would not be expected to occur throughout the entire 10 acre construction easement since existing and/or overland routes would be used to access pole sites where feasible to minimize vegetation disturbance/removal in the New Fork River riparian and floodplain areas. These minor vegetation impacts would not negatively impact species that utilize the riparian floodplain habitat. Additionally, erosion control measures developed in the project Stormwater Pollution Protection Plan would prevent sediment from leaving the project work area or entering any adjacent riparian or wetland areas. All chemicals, solvents and fuels would be kept 500 feet away from the New Fork River and associated wetlands, thus avoiding impacts to riparian and wetland dependent species.

Placement of the poles and lines in the area could attract raptors and increase raptor predation in the project area. The project would incorporate a perch minimizing design (including pole caps). However, proposed perch deterrents would reduce but not exclude raptor use of the power poles so some increased level of increased predation would be expected.

Raptors, waterfowl and other migratory birds may also be impacted by increased fatalities due to electrocutions and collisions with transmission lines. However, the potential of this impact would be reduced with the incorporation of flight diverters on the segment of the distribution line crossing that crosses the river. All necessary seasonal restrictions enforced raptor nests would be implemented if found within 0.5 mile of the project area.

#### **4.10.2.3 Aquatic Resources**

Removal of riparian habitat could increase erosion and impact water quality in the project area riparian/floodplain area. However, strategic selection of pole locations in the New Fork River riparian and floodplain area and access to those pole locations via existing and/or upland routes as feasible would minimize vegetation removal in riparian areas. Construction vehicles would not track across the river channel. Impact to the New Fork River riparian vegetation is expected to be minimal.

No underground power line crossings are proposed for perennial water courses or areas with riparian canopy. The top layer of substrate would be removed and stockpiled separately for any buried lines that would cross intermittent streams. The top layer of substrate would be placed as the final grade material and would not be mixed with ditch spoil or other excavated material. Reclamation would include bank stabilization and reseeding of disturbed areas. Vegetation removal in riparian areas would be minimized. Overland travel would be implemented to the extent feasible and within engineering constraints while considering a safe work environment.

Impacts to populations of game and non-game fishes in the New Fork River are not expected to occur as a result of pole installation. The trenching of the underground segments of the 25 kV line would occur at least 3,000 feet from the New Fork River. Erosion control measures developed in the project Stormwater Pollution Protection Plan would prevent sediment from leaving the project work area or entering wetlands. All chemicals, solvents and fuels would be kept 500 feet away from wetlands, streams and the New Fork River.

The unintentional spread of aquatic invasive species from one body of water to surface waters within the project area may be considered a violation of Wyoming Game and Fish Commission regulations. If aquatic invasive species are spread into the project area, aquatic species may be impacted. However, no equipment will enter water bodies.

No direct impacts to aquatic species would occur and no construction is anticipated to deliver sediment to the river. Therefore, there will be no impact to aquatic habitat.

#### **4.10.3 Alternative III**

Alternative III would impact approximately the same amount of pronghorn migration area as the Proposed Action. Alternative III would permanently impact approximately 14 fewer acres of pronghorn crucial winter range than the Proposed Action and 78 more acres than No Action. As under the Proposed Action the 25 kV Segment 2C would affect the largest amount of pronghorn migration area. Pronghorn would not be negatively affected by Alternative III actions.

**Table 4-9. Alternative III Acres of Impact – Pronghorn Migration**

Action	Pronghorn Migration Impact (acres)		
	Temporary	Permanent	Total
No Action (approved 230 kV seg.)	0	20	20
Alternative III (with Segment 2A)	10	27	37
Alternative III (with Segment 2B)	10	27	37
Alternative III (with Segment 2C)	27	36	63

**Table 4-10. Alternative III Acres of Impact – Pronghorn Crucial Winter Range**

Action	Pronghorn Migration Impact (acres)		
	Temporary	Permanent	Total
No Action (approved 230 kV seg.)	0	86	86
Alternative III (with Segment 2A)	157	164	321
Alternative III (with Segment 2B)	156	165	321
Alternative III (with Segment 2C)	155	164	319

Impacts to moose crucial winter range would be no different from the Proposed Action; see Table 4-8.

Fourteen fewer miles of overhead line would be constructed and 116 fewer acres would be disturbed under Alternative III than the Proposed Action. Potential impacts to the New Fork River riparian and floodplains areas would be the same under both alternatives. No direct impacts to perennial waterways would occur and any impact to intermittent streams that may be trenched to bury underground segments would be reclaimed to restore drainage and habitat functions.

Temporary disturbance areas in sagebrush habitat would be reduced to the 100-foot-wide 25 kV corridor construction easement thus reducing impacts to all sagebrush-dependent species.

Estimated permanent sagebrush habitat loss would be 6,960 square feet (0.16) following successful reclamation of the temporarily disturbed areas. Approximately 155 fewer poles would be erected under Alternative III than the Proposed Action reducing predator perches. All necessary seasonal restrictions enforced raptor nests would be implemented if found within 0.5 mile of the project area. Fewer overhead electrical lines in the area would reduce avian collisions with overhead power lines.

**4.10.4 Alternative IV**

Alternative IV would temporarily impact 13 more acres of pronghorn migration area than the Proposed Action and 13 to 49 more acres than Alternative III (depending on the selected 25 kV Segment 2 route). Alternative IV would permanently impact approximately 23 more acres of pronghorn crucial winter range than the Proposed Action, 36 more acres than Alternative III and 114 more acres than No Action. As under the Proposed Action and Alternative III, the 25 kV Segment 2C would affect the largest area of pronghorn migration area.

**Table 4-11. Alternative IV Acres of Impact – Pronghorn Migration**

Action	Pronghorn Migration Impact (acres)		
	Temporary	Permanent	Total
No Action (approved 230 kV seg.)	0	20	20
Alternative IV (with Segment 2A)	14	33	47
Alternative IV (with Segment 2B)	17	33	50
Alternative IV (with Segment 2C)	48	54	102

**Table 4-12. Alternative IV Acres of Impact – Pronghorn Crucial Winter Range**

Action	Pronghorn Migration Impact (acres)		
	Temporary	Permanent	Total
No Action (approved 230 kV seg.)	0	86	86
Alternative IV (with Segment 2A)	196	200	396
Alternative IV (with Segment 2B)	190	201	391
Alternative IV (with Segment 2C)	188	200	388

Impacts to moose crucial winter range would be no different from the Proposed Action, see Table 4-8.

Alternative IV would impact 142 acres more than Alternative III and 26 more acres than the Proposed Action. Alternative IV would cause the most soil disturbance of the alternatives. However, erosion and sediment control BMPs specified in the project SWPPPs should avoid delivery of sediment to surface waters. No direct impacts to perennial waterways should occur and any impact to intermittent streams that may be trenched to bury underground segments would be reclaimed to restore impacted drainage and habitat functions.

**4.10.5 Cumulative Impacts**

Surface disturbance and habitat fragmentation have existed in varying degrees within and surrounding the proposed pipeline ROW and have increased over time with continuing energy exploration, development, and production.

Some species have adapted to human presence in the CIAA. Additional disturbance would likely cause new behavioral adaptations, movement, and/or avoidance of activity areas. RFFAs in the CIAA that would impact wildlife include oil and gas exploration and mineral resource extraction, road construction, residential development, recreation, wildlife species management, and livestock grazing. Impacts to wildlife from this project would add to existing impacts from other disturbances in the area.

#### **4.10.6 Mitigation Measures**

The following BLM seasonal wildlife stipulations would be applied to all route options:

- Activities or surface use would not be allowed from November 15 to April 30 within moose crucial winter habitat.
- Activities or surface use would not be allowed from February 1 to April 30 within pronghorn crucial winter habitat.
- The top layer of substrate would be removed and stockpiled separately for any buried lines that would cross intermittent streams. The top layer of substrate would be placed as the final grade material and would not be mixed with ditch spoil or other excavated material. Reclamation would include bank stabilization and reseeding of disturbed areas.
- Vegetation removal in riparian areas would be minimized and in accordance with RMP's Vegetation Management Specification Manual, overland travel would be implemented to the extent feasible and within engineering constraints while considering a safe work environment for workers.
- Erosion control measures developed in the project Stormwater Pollution Protection Plan would prevent sediment from leaving the project work area.
- All chemicals, solvents and fuels would be kept 500 feet away from streams and the New Fork River. Secondary containment will be used to store such materials.
- No equipment will enter water bodies.
- All surface-disturbing activity would be seasonally restricted from February 1 through August 15 within a 0.5-mile radius of all active raptor nests. An active raptor nest is defined as a nest that has been occupied within the past 3 years.
- Activities and facilities that create barriers to the seasonal movements of big game would be avoided.
- Flight diverters would be placed on all lines within the New Fork River riparian and floodplain area.
- All overhead lines would be required to be constructed using a perch minimizing design, including pole caps.
- All reclamation of disturbed land would be conducted with a diverse mix of noninvasive, certified weed-free seed demonstrated effective for post-disturbance

land uses and approved by the BLM. In designated and important wildlife habitats, this mix should be designed to restore pre-disturbance wildlife use.

#### **4.11 WETLANDS, RIPARIAN RESOURCES AND FLOODPLAINS**

##### **4.11.1 Alternative I - No Action Alternative**

Under the No Action Alternative, the Proposed Action would not be implemented and no construction of the 25 kV distribution line, the 69 kV transmission line, or the Anticline substation would be authorized. No construction work would occur in the New Fork River riparian and floodplain areas. Potential temporary impacts to other smaller wetlands and intermittent drainages within the Proposed Action area would be avoided.

Construction of the 230 kV line would occur within the previously approved route resulting in the construction of approximately one additional mile of 230 kV line than the 230 kV route amendment in the Proposed Action.

##### **4.11.2 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

Approximately 13.6 acres of construction easement would be in the New Fork River riparian and floodplain areas. A few poles for the overhead crossing of the New Fork River would need to be located in the riparian/floodplain area. These poles would be placed in areas that can be accessed from existing and/or upland routes to the extent feasible and within engineering constraints while considering a safe work environment. This would minimize vegetation removal in the New Fork River riparian area.

No underground power line crossings are proposed for perennial water courses or areas with an overhead riparian canopy. The top layer of substrate would be removed and stockpiled separately for any buried lines that would cross intermittent streams. The top layer of substrate would be placed as the final grade material and would not be mixed with ditch spoil or other excavated material. Reclamation would include bank stabilization and reseeded of disturbed areas.

Wetland areas outside of the New Fork River riparian area would be identified and marked before construction. A trained wetland biologist and the contractor would complete a preconstruction walkthrough to identify areas that will need special care for access (wetlands) and construction protocol if areas cannot be avoided. However, outside of the New Fork River area, placement of poles in wetland habitat it is not expected to be required, and no mapped wetlands occur in or near the proposed underground segments of the 25 kV line. A post construction walkthrough would be done to make sure any disturbed wetland soils are restored and appropriate wetland seed mix is applied to these areas.

##### **4.11.3 Alternative III**

Actions in the New Fork River riparian and floodplain area would be the same under Alternative III or the Proposed Action. There would be lower probability in encountering wetland habitat in the Alternative III project area simply due to the reduced project size (14 fewer miles of overhead line would be constructed). Impacts to intermittent drainages or wetland that could

result from trenching to install the underground lines would be the same as the Proposed Action as these potential impacts are only associated with the 25 kV line. However, impacts to the riparian vegetation and wildlife species dependent on riparian and wetland habitat would also be minimal to negligible under Alternative III.

#### **4.11.4 Alternative IV**

Actions in the New Fork River riparian and floodplain area would be the same under Alternative IV and the Proposed Action or Alternative III. Impacts to intermittent drainages or wetland that could result from trenching to install the underground lines would be the same as the Proposed Action as these potential impacts are only associated with the 25 kV line. There would be slightly higher probability in encountering intermittent drainages and/or wetland habitat in the Alternative IV project area than the Proposed Action due to the slightly larger project area. The probability of impacting intermittent drainages and wetland habitat in Alternative IV project area would also be higher than under Alternative III. Impacts to the riparian vegetation and wildlife species dependent on riparian and wetland habitat would also be minimal to negligible under Alternative IV.

#### **4.11.5 Cumulative Impacts**

Wetlands, floodplains, waters of the U.S., and riparian areas would be avoided where possible during implementation of this and other proposed projects in the area. No cumulative impacts are anticipated from the Proposed Action due to minimal disturbance that would occur in wetland and riparian resources. Some minor surface disturbance may occur at wetlands or intermittent drainages along the proposed distribution and transmission route alignments (overhead and underground segments), but these impacts will be minor and temporary and will not constitute long term impacts to either wetland or riparian resources. No permanent cumulative impacts are anticipated because all future development would comply with Section 404 of the Clean Water Act and Executive Orders 11988 and 11990.

#### **4.11.6 Mitigation Measures**

The following BLM stipulations would be implemented to minimize impacts to wetland, riparian and floodplain areas:

- No underground power line crossings are proposed for perennial water courses or areas with an overhead riparian canopy. The top layer of substrate would be removed and stockpiled separately for any buried lines that would cross intermittent streams. The top layer of substrate would be placed as the final grade material and would not be mixed with ditch spoil or other excavated material. Reclamation would include bank stabilization and reseeded of disturbed areas.
- Poles in the New Fork River riparian area would be placed in areas that can be accessed from existing and/or upland routes to the extent feasible and within engineering constraints while considering a safe work environment.
- Wetland areas outside of the New Fork River riparian area would be identified and marked before construction. A trained wetland biologist and the contractor would complete a preconstruction walkthrough to identify areas that will need special care for access (wetlands) and construction protocol if areas cannot be avoided.
- A post construction walkthrough would be done to make sure any disturbed wetland soils have been restored and appropriate wetland seed mix is applied to these areas.

## 4.12 VISUAL RESOURCES

The natural gas development in the PAPA has disturbed areas of VRM Class II lands, primarily along the New Fork River near the proposed 25 kV crossing. Visual impacts associated with the existing and future natural gas development have been discussed in Section 4.7.3.1 of the SEIS for the Pinedale Anticline Oil and Gas Exploration and Development Project (BLM 2008d).

### **4.12.1 Impact Criteria**

Visual resources impacts would be considered significant if the impacts of the proposed Project do not conform to the designated VRM classifications or management goals within the Project Area.

### **4.12.2 Alternative I - No Action Alternative**

There would be no new impacts to visual resources associated with the No Action Alternative. If the 230 kV transmission line is constructed within the currently authorized corridor, this would include approximately 10 miles of 230 kV line on BLM lands in Class III areas along Highway 191 and Highway 351.

### **4.12.3 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

The Proposed Action would be consistent with the BLM’s VRM objectives. The following table contains the distance within each VRM Class of each line segment and route option.

**Table 4-13. VRM Classes by Alignment and Route Option**

<b>Alignment</b>	<b>VRM Class II</b>	<b>VRM Class III</b>	<b>VRM Class IV</b>
25 kV (Route Option 2A)	3,240 ft	77,259 ft	19,528 ft
25 kV (Route Option 2B)	9,888 ft	73,921 ft	19,528 ft
25 kV (Route Option 2C)	11,485 ft	71,908 ft	19,528 ft
69 kV (Route Option A)	0 ft	25,666 ft	0 ft
69 kV (Route Option B)	6,592 ft	19,644 ft	0 ft
69 kV (Route Option C)	8,180 ft	17,640 ft	0 ft
Proposed 230 kV Reroute	0 ft	29,705 ft	14,751 ft
Authorized 230 kV Route	0 ft	52,062 ft	0 ft

VRM Class II and III lands would be crossed at the northern end of the proposed 25 kV distribution and 69 kV transmission alignments, associated with the New Fork River. These lands are classified as such because of their scenic riparian characteristics, including the river, expansive floodplain, willow shrubs and tall cottonwood trees. The 25 kV and would cross VRM Class II lands within the floodplain of the New Fork River in areas with existing oil and gas infrastructure including well pads and pipelines. The 25 kV alignment would utilize an existing power line corridor between oil and gas pipelines to the west and a waterline to the east. This corridor is maintained ROW that includes few mature trees or shrubs, thus riparian vegetation removal will be minimal. The objectives of the VRM classification would be

maintained at this location. Construction and operation would retain the existing character of the landscape and the level of change would be low.

Segments 2B and 2C of the 25 kV line and the accompanying 69 kV line would cross additional Class II lands south of Boulder South Road and west of Middle Crest Road. This area also contains existing oil and gas development including well pads and pipelines. The objectives of the VRM classification would be maintained at this location. Construction and operation would retain the existing character of the landscape and the level of change would be low.

The remainder of the proposed pipeline alignment would cross VRM Class III and IV lands. VRM Class III allows for moderate change to the character of the landscape and VRM Class IV allows for major modifications of the existing character of the landscape. Construction and operation of the proposed power line is consistent with VRM Class III and IV objectives. The proposed Anticline substation would also be located on VRM Class III lands south and west of the distribution line crossing of Highway 351.

#### **4.12.4 Alternative III**

Alternative III would have the same impacts to visual resources as Alternative II with the exception of the removal of the 69 kV line from VRM Class II and III areas, the removal of the substation from VRM Class III areas and the removal of the 230 kV line from VRM Class III and IV areas. The 230 kV line would remain in VRM class III areas for 5.4 additional miles as compared to the route in Alternative II.

#### **4.12.5 Alternative IV**

Alternative III would have the same impacts to visual resources as Alternative II with the exception of the removal of the 230 kV line from VRM Class III and IV areas. The 230 kV line would remain in VRM class III areas for 4.2 additional miles as compared to the route proposed in Alternative II.

#### **4.12.6 Cumulative Effects**

The visual impacts Cumulative Impact Assessment Area (CIAA) for the project would include the view shed from north of the New Fork River to Highway 191 east of the Falcon Compressor Station site. Additional distribution lines that may be needed in this area would likely be buried which would minimize cumulative impacts to visual resources within the region.

#### **4.12.7 Mitigation**

Non-specular conductor would be used throughout the project.

### **4.13 RECREATIONAL RESOURCES**

As described in Section 3.13 of this report, the existing oil and gas development within the project area has impacted the available recreation opportunities. These impacts were described and analyzed in Section 4.6.3.1 of the Anticline Oil and Gas SEIS and identified that development and production of natural gas resources in the PAPA affected the visual and aesthetic quality associated with dispersed recreational experiences (BLM 2008d).

#### **4.13.1 Impact Criteria**

Management objectives for recreation resources for the PFO are to ensure the continued availability of diverse outdoor recreational opportunities sought by the public, while protecting other resources; maintain or enhance the health and viability of recreation-dependent resources and settings; mitigate conflicts between recreation and other types of resource uses; accommodate existing land uses; and provide for the anticipated recreational uses and use levels in the resource area (BLM 2008a).

#### **4.13.2 Alternative I - No Action Alternative**

There would be no impacts to recreational resources associated with the No Action Alternative.

#### **4.13.3 Alternative II – 25 kV Distribution, 230 and 69 kV Transmission and Substation – Proposed Action**

The Proposed Action would be consistent with the BLM recreation management objectives. The project area is a heavily developed portion of the Pinedale Anticline Oil and Gas Development Area and recreation within the immediate area is relatively limited when compared to other areas within the Pinedale region. The primary recreational resource within the project area is the New Fork River and the nearest campground is the New Fork Campground located approximately 4.5 miles from the Proposed Action. Hunting near the proposed action consists mainly of pronghorn hunting, although sage grouse, moose, mule deer and white-tailed deer hunting may also occur. Waterfowl hunting may also occur along the New Fork River. During construction, temporary impacts to hunting and fishing will occur from construction noise and the presence of equipment.

Long term impacts will occur at the New Fork River crossing from the presence of the 25 kV distribution structures crossing the river. The river crossing is located in a portion of the New Fork River floodplain that already contains disturbances including well pads and pipelines. The addition of a 25 kV distribution line in an area with existing industrial development and ongoing disturbance would not substantially alter the recreational setting or recreational experience at this location. The project is located at a sufficient distance from the New Fork River Campground that impacts will not occur to recreation at this camping facility.

#### **4.13.4 Alternative III**

Alternative III would have the same effects on recreation as Alternative II.

#### **4.13.5 Alternative IV**

Alternative IV would have the same effects on recreation as Alternative II.

#### **4.13.6 Cumulative Effects**

The CIAA for recreation is the greater Pinedale region. Cumulative impacts to recreation resources would be the same as those described for the Proposed Action. Construction of the proposed power lines would cause a temporary loss of dispersed recreation on BLM-managed lands near construction sites. However, it is anticipated that these impacts would be short term and negligible. Long term impacts will occur at the New Fork River crossing from the presence of the 25 kV distribution structures crossing the river. The river crossing is located in a portion of the New Fork River floodplain that already contains disturbances including well pads and

pipelines. The addition of a 25 kV distribution line in an area with existing industrial development and ongoing disturbance would not substantially alter the recreational setting or recreational experience at this location.

**4.13.7 Mitigation**

No mitigation would be required for recreational resources.

**5.0 TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED**

An EA must be prepared when a federal government agency considers approving an action within its jurisdiction that may impact the human environment. An EA aids federal officials in making decisions by disclosing information on the physical, biological, and social environment of a proposed project. This EA has been prepared by the BLM PFO in Pinedale, Wyoming. BLM has used third-party contractors to study, gather data, and prepare documents. Tribes, individuals, organizations, and agencies consulted during the preparation of this EA include:

- BLM PFO – lead agency
- U.S. Fish and Wildlife Service (USFWS)
- Wyoming State Historic Preservation Office (SHPO)
- Wyoming Game and Fish Department (WYGFD)
- Sublette County
- Rocky Mountain Power
- Eastern Shoshone Tribe of the Wind River Reservation
- Arapaho Tribal Business Shoshone-Bannock Tribes of the Fort Hall Reservation

These agencies were actively involved in preparing, reviewing, and/or creating the draft EA, and in developing mitigations and BMPs to reduce impacts from the proposed project.

**6.0 LIST OF PREPARERS**

The following tables identify the BLM Interdisciplinary Team (Table 6-1) and the consultant Interdisciplinary Team (Table 6-2) that were principally involved in preparing this EA.

**Table 6-1. List of BLM Interdisciplinary Team EA Preparers**

Name	Responsibility
<b>Pinedale Field Office</b>	
Bill Wadsworth	Project Lead, Lands and Realty
J. D. (Sam) Drucker	Archeologist & Paleontological Coordinator
Mark Thonhoff	Wildlife Biologist
Joshua Hemenway	Wildlife Biologist
Sheryl McCulloch	Realty Specialist
Kyle Schumacher	Natural Resource Specialist
Tim Zebulske	Supervisory Natural Resource Specialist
Lauren McKeever	Planning & Environmental Coordinator
Greg Noble	Assistant Field Manager (Land/Minerals)
Dave McCulloch	Environmental Protection Specialist

**Table 6-2. List of Consultant Interdisciplinary Team EA Preparers**

Name	Primary Role
<b>GeoEngineers</b>	
Shawn Mahugh	Project Manager, GIS Specialist
Judith Light	Biology Lead
Lisa Berntsen	Principal Reviewer
Jennifer Dadisman	Resource Specialist
Lisa Carssow	Editor
<b>Parus Consulting</b>	
Cindy Arrington	Archaeology Lead
Nancy Sikes, PhD	Archaeology Specialist
<b>Erathem-Vanir Geological Consultants</b>	
Gustav Winterfeld, PhD	Paleontological Lead

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