

DRAFT
Environmental Impact Statement
for the Gateway West Transmission Line Project
Wyoming, Idaho, and Nevada

July 2011



Wyoming State Office



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BLM/WY/PL-11/038+1430

The photograph used for the cover of the Draft EIS was taken near Kemmerer, WY, from Dempsey Ridge Road north of Coke Mountain and east of the Tunp Range facing south, Key Observation Point 636 in the visual resources analysis. The transmission lines and towers depicted in this photograph are computer-generated simulations.

Gateway West Transmission Line Project Environmental Impact Statement

Draft

Final

Supplemental

Lead Agency	Bureau of Land Management, Department of the Interior	
Cooperating Agencies	Medicine Bow-Routt, Caribou-Targhee, and Sawtooth National Forests; National Park Service (National Trails Office, Minidoka National Historic Site, Hagerman Fossil Beds National Monument, Fossil Butte National Monument, Craters of the Moon National Monument and Preserve, and City of Rocks National Reserve); U.S. Fish and Wildlife Service (Ecological Services Division, Seedskaadee and Cokeville Meadows National Wildlife Refuges); U.S. Army Corps of Engineers; Bureau of Indian Affairs; the States of Idaho and Wyoming; Idaho Army National Guard; Cassia, Power, and Twin Falls Counties, Idaho; Lincoln, Sweetwater, and Carbon Counties, Wyoming; the Medicine Bow and Saratoga Encampment-Rawlins Conservation Districts in Wyoming; and the City of Kuna, Idaho.	
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Abstract

Idaho Power Company and PacifiCorp, Inc. jointly submitted an application for a right of way grant and special use permit for the construction and operation of a 230/500 kV transmission line from the Windstar Substation at Glenrock, Wyoming, to the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The transmission line would be approximately 1,103 miles long. This environmental impact statement evaluates the proposed action as stated in the application including environmental protection measures. It also examines the impacts of several possible alternative route locations in portions of Wyoming, Idaho, and Nevada, a structure variation, a design variation in Wyoming, and a schedule variation. Route alternatives were developed to avoid (or minimize impacts to) historical features, important wildlife or forested habitat, National Wildlife Refuges, National Monuments, state parks, recreational activities, restricted areas, irrigated agricultural lands, and planned infrastructure and housing developments. Alternatives were also considered that were specifically requested by the Wyoming Governor's Office, were "more direct" (shorter distance), and that adhered to utility corridors previously established by BLM and Forest Service land use plans, including corridors established by the Approved Resource Management Plan Amendments/Record of Decision (ROD) for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States and Record of Decision: USDA Forest Service Designation of Section 368 Energy Corridors on National Forest System Land in 10 Western States. Granting of the right of way and special use permit would require amendments of seven Bureau of Land Management Resource Management Plans (Casper, Cassia, Green River, Jarbidge, Kemmerer, Rawlins, and Morley Nelson Snake River Birds of Prey National Conservation Area), five Bureau of Land Management Framework Plans (Malad, Twin Falls, Bennett Hills/Timmerman Hills, Bruneau, and Kuna) and two Forest Service Plans (Revised Forest Plan for the Caribou National Forest and Medicine Bow Revised Land and Resource Management Plan). Depending on alternatives selected, amendments to the Sawtooth Forest Plan and Wells Resource Management Plan could also be required. Significant impacts were identified from construction and operation of the transmission line on historical resources (historic trails), visual quality, and cumulative impacts on several resources based on past and present levels of disturbance. The comment period on the Draft EIS will close 90 days from the date of publication of the EPA's Notice of Availability in the Federal Register.

EXECUTIVE SUMMARY

INTRODUCTION

Idaho Power Company and PacifiCorp (doing business as Rocky Mountain Power), collectively known as the Proponents, applied to the Bureau of Land Management (BLM) for a right-of-way (ROW) grant to use the National System of Public Lands for portions of the Gateway West Transmission Line Project (Gateway West or Project) on May 7, 2007. The original application was revised in October 2007, August 2008, May 2009, and January 2010 to reflect changes and refinements in their proposed Project. This application was assigned the case file numbers of IDI-35849 for Idaho, NVN-089270 for Nevada, and WYW-174598 for Wyoming.

The Proponents propose to construct and operate approximately 1,103 miles of new 230-kilovolt (kV) and 500-kV electric transmission system consisting of 10 segments between the Windstar Substation at Glenrock, Wyoming, and the Hemingway Substation approximately 30 miles southwest of Boise, Idaho. The proposed transmission line would supplement existing transmission lines and relieve operating limitations, increase capacity, and improve reliability in the existing electric transmission grid. This would allow for the delivery of up to 3,000 megawatts (MW) of additional energy for the Proponents' larger service areas, principally in Utah and Idaho, and to other interconnected systems. The Project includes three proposed substations, an expansion at one planned substation to be constructed for other purposes, and expansions at eight existing substations. Other associated facilities include communication systems, optical fiber regeneration stations, and substation distribution supply lines.

PURPOSE AND NEED

BLM is the lead federal agency under the National Environmental Policy Act and will coordinate the preparation of the environmental analysis. The cooperating agencies include the U.S. Department of Agriculture Forest Service (Forest Service) (the Caribou-Targhee, Medicine Bow-Routt, and Sawtooth National Forests); the National Park Service (including the National Trails Office, Minidoka National Historic Site, Hagerman Fossil Beds National Monument, Fossil Butte National Monument, Craters of the Moon National Monument and Preserve, and the City of Rocks National Reserve); the U.S. Fish and Wildlife Service (Ecological Services Division, Seedskaadee and Cokeville Meadow National Wildlife Refuges [NWRs]) Wyoming; the U.S. Army Corps of Engineers (USACE); the Bureau of Indian Affairs; the States of Idaho and Wyoming; Idaho Army National Guard (IDANG); Cassia, Power, and Twin Falls Counties, Idaho; Elko County, Nevada; Lincoln, Sweetwater, and Carbon Counties, Wyoming; the Medicine Bow and Saratoga Encampment-Rawlins Conservation Districts in Wyoming; and the City of Kuna in Idaho.¹

The purpose of the federal action on federally managed lands is to determine if providing for the use of those lands for portions of the Gateway West Project is in the

¹ BLM and the cooperating agencies may be referred to collectively hereafter as "the Agencies."

public interest. The need for the action is established by the federal agencies' responsibility under the Federal Land Planning and Management Act² to respond to an application for a ROW. In addition, the USACE must respond under the Clean Water Act³ to an application for a permit to discharge dredged or fill material into waters of the United States, including wetlands.

ISSUES

Issues raised through scoping include effects on visual resources, cultural resources, socioeconomics, environmental justice, plants and wildlife, including special status species, water resources, land use, conformance with land use plans, agriculture, reclamation, control of invasive plant species, recreation, wilderness characteristics, transportation, air quality, noise, electrical environment, and public safety. Chapter 3 of the Draft EIS discusses how the Proposed Route and the Route Alternatives would affect key issues.

PROPOSED ACTION AND ALTERNATIVES

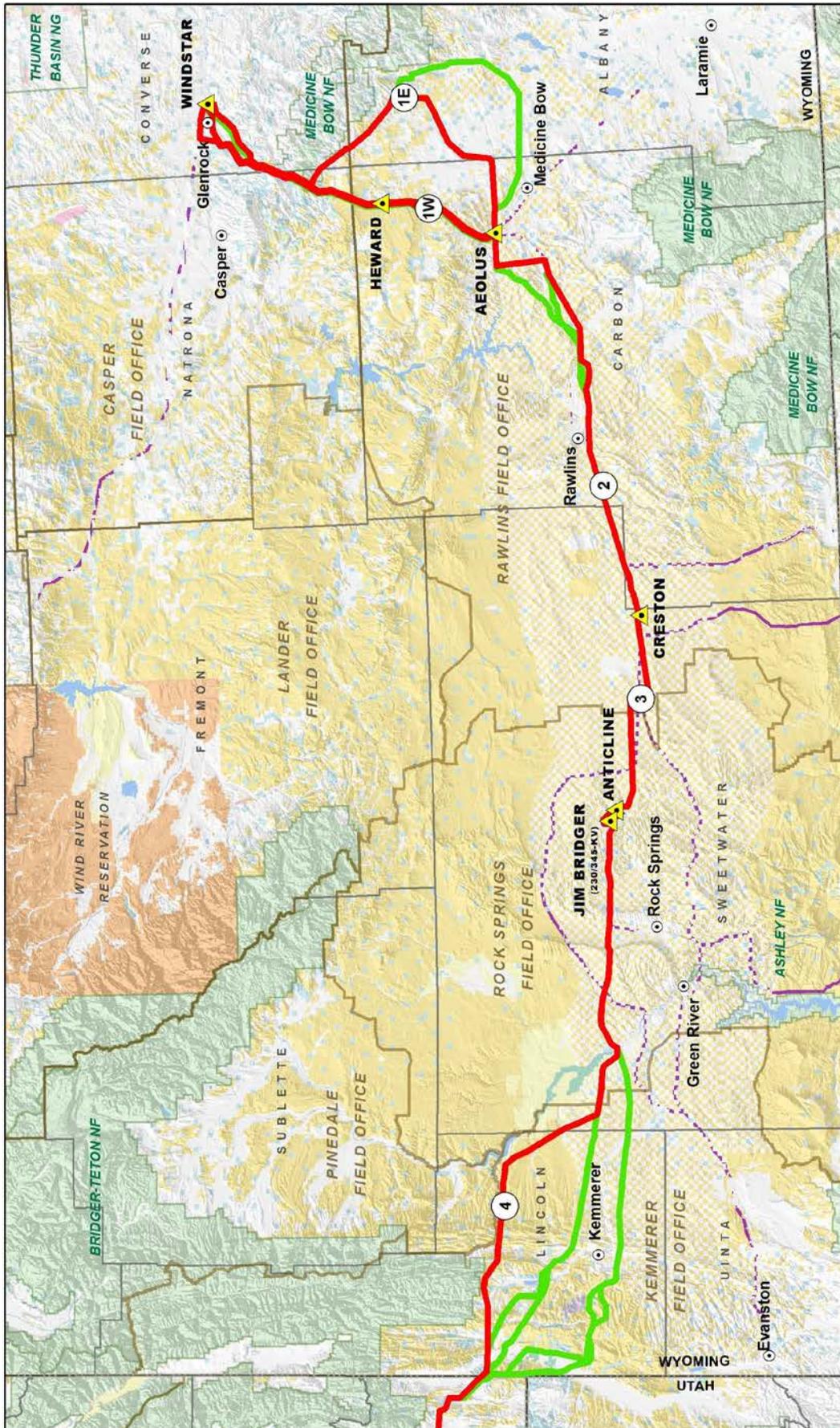
PROPOSED ACTION

The Project would begin in Wyoming at the Windstar Substation and take two paths to the Aeolus Substation—one to the east (Segment 1E) to access new wind energy, and one (Segment 1W) that would follow or parallel the West-wide Energy (WWE) corridor and an existing 230-kV line proposed for reconstruction (Figure ES-1). It would then proceed as a double-circuit 500-kV line from Aeolus to Populus. At Populus, the Gateway West Project would split into two single-circuit 500-kV roughly parallel paths—Segments 5, 6, and 8 would travel on a more northerly route toward the Hemingway Substation through the Borah and Midpoint Substations, while Segments 7 and 9 would travel a more southerly route through the Cedar Hill Substation to the Hemingway Substation (Figure ES-2). Segment 10 would provide an interconnection between the Cedar Hill and Midpoint Substations and also provide an interconnection between the more northerly and more southerly routes. The Proponents have proposed this split because of the need to serve loads along the way and also to increase reliability.

The Proponents' overall Project approach was to use the WWE corridor and other designated ROW corridors and existing utility corridors, if feasible and unless there was a compelling reason to avoid them. In many cases, the proposed routing closely follows the WWE corridor; however, the WWE corridor is only designated across federally managed lands, and about half the land along the route is privately owned. In some locations, the WWE corridor is too narrow to allow for the required separation (generally 1,500 feet) from existing transmission lines already in the corridor.

² Federal Land Policy and Management Act of 1976, as amended, 43 United States Code (U.S.C.) § 22

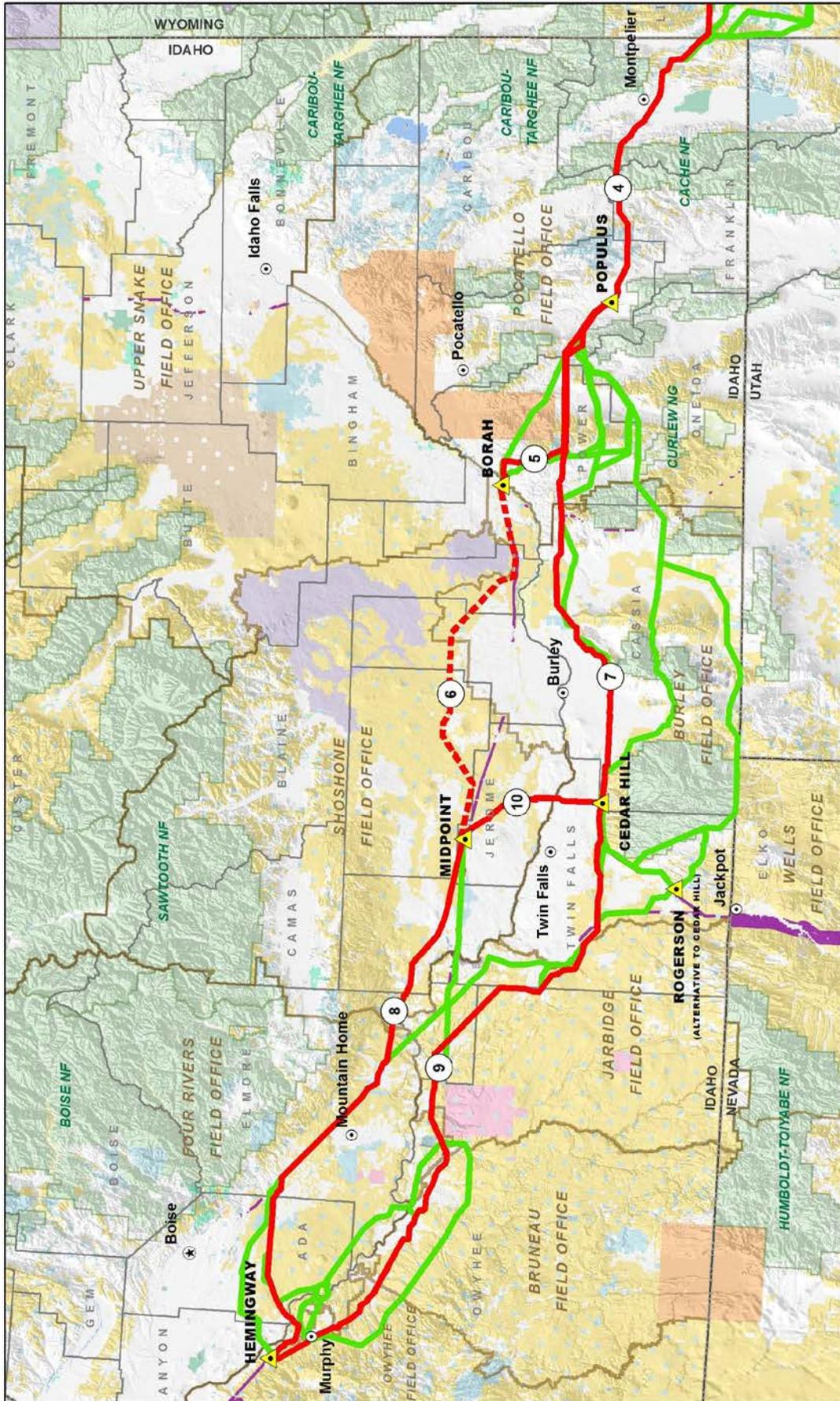
³ Clean Water Act of 1972, as amended, 33 U.S.C. § 1251



Gateway West
Transmission Line Project
Idaho, Nevada, Wyoming
Wyoming Routes
FIGURE ES-1

- Route Features**
- Proposed Route
 - Feasible Alternative
 - Energize Existing 345kV line to 500kV
- Project Features**
- Substation Location
 - West-Wide Energy Corridor
 - Segment Number
- Administrative**
- City, Town
 - State Capital
 - County Boundary
 - State Boundary
- Transportation**
- Interstate
 - airports





Gateway West
Transmission Line Project
Idaho, Nevada, Wyoming

Idaho and Nevada Routes
FIGURE ES-2

Route Features

- Proposed Route
- Feasible Alternative
- Existing 345kV line to 500kV

Project Features

- Substation Location
- West-Wide Energy Corridor
- Segment Number

Administrative

- City, Town
- State Capital
- County Boundary
- State Boundary

Transportation

- Interstate
- airports

The transmission line segments would cross federal, state, and private lands. Table ES-1 summarizes miles crossed by ownership for the Proposed Action. The ROW width requested for the transmission line ranges from 125 feet for single-circuit 230-kV and 250 feet for single-circuit 500-kV to 300 feet for double-circuit 230-kV and 500-kV segments.

Table ES-1. Proposed Action Summary of Miles and Percent Crossed by Ownership

Segment	Length (Miles)						Percent of Total				
	BLM	NF ^{1/}	State	Private	Other ^{2/}	Total	BLM	NF	State	Private	Other
Segment 1E – Windstar to Aeolus	11.6	2.8	22.0	64.0	0.1	100.6	11.5	2.8	21.9	63.7	0.1
Segment 1W(a) – Windstar to Aeolus	26.6	2.3	18.5	29.1	0.0	76.5	34.7	3.0	24.2	38.0	
Segment 1W(c) – Dave Johnston to Aeolus	24.2	2.3	15.4	28.7	0.1	70.6	34.2	3.3	21.8	40.6	0.1
Segment 2 – Aeolus to Creston	36.9		6.2	53.5	0.1	96.7	38.2		6.4	55.3	0.1
Segment 3 – Creston to Anticline ^{3/}	29.0		1.0	26.5		56.5	51.3		1.8	46.9	
Segment 4 – Anticline to Populus	82.2	9.2	10.7	97.7	3.2	203.0	40.5	4.5	5.3	48.1	1.6
Segment 5 – Populus to Borah	13.2		3.5	37.8	0.1	54.6	24.2		6.4	69.2	0.2
Segment 6 – Borah to Midpoint ^{4/}				0.5		0.5				100.0	
Segment 7 – Populus to Cedar Hill	28.1		4.3	85.7		118.1	23.8		3.6	72.6	
Segment 8 – Midpoint to Hemingway	86.5		9.3	33.4	1.8	131.0	66.0		6.9	25.5	1.6
Segment 9 – Cedar Hill to Hemingway	128.7		4.6	28.4		161.7	79.6		2.8	17.6	
Segment 10 – Midpoint to Cedar Hill	13.1			20.3	0.1	33.6	39.2			60.6	0.3
Total Project^{5/}	480.5	16.7	95.2	506.7	5.7	1,103.4	43.5	1.5	8.6	45.9	0.5

1/ Totals reflect mileage crossed on National Forest System (NFS) land.

2/ Other includes Bureau of Reclamation, U.S. Fish and Wildlife Service, etc.

3/ Segment 3 includes 5.5 miles of 345-kV and 4.3 miles of 230-kV single circuit line.

4/ Segment 6 does not include ground-disturbing activity except in association with the expanded Borah and Midpoint Substations.

5/ Totals may not equal 100 percent due to rounding.

Details of construction and operations, common to all alternatives, are summarized in Section 2.7 of the EIS and detailed in Appendix B. Environmental protection measures (EPMs), proposed by the Proponents, are provided in Appendix C and are considered part of the Project description for the proposed and alternative routes and design variations.

Structure and Schedule Variations

After analysis and comparison with the alternative structure types considered, the double-circuit 500-kV horizontal lattice tower has been proposed for those line segments requiring a double-circuit configuration. However, two single-circuit 500-kV structures in a 350-foot-wide ROW (wider than the 300-foot width of the proposed single-tower, double-circuit structure) are an economically feasible structure alternative for the line segments requiring two 500-kV circuits and are analyzed as a structure option for Segments 2 through 4.

Due to the uncertain economic conditions, some of the potential customers for Gateway West have cancelled or deferred project development plans. To maintain flexibility in an uncertain market and still meet customer requests, the Proponents have proposed a Schedule Variation for detailed analysis applicable to Segments 1 through 4. Chapter 2, Table 2.1-7 in the Draft EIS shows the Schedule Variation construction schedule. Key elements of the Schedule Variation are described below.

- Constructing Segments 1E, 1W(a), 3A (345-kV line between the Anticline yard and the existing Jim Bridger Substation); one circuit of Segments 2, 3, and 4;

construction of the Heward and Anticline Substations; and modifications to the Windstar, Aeolus, and Populus Substations.

- Shifting construction of Segment 1W(c); one circuit of Segments 2, 3, and 4; and modifications to the Windstar, Aeolus, Creston, Anticline, and Populus Substations to the 2018 to 2020 time frame⁴.
- The second circuit for Segments 2, 3, and 4 would be operated at 500 kV when constructed; the Creston Substation would be constructed as a 500-kV substation; and Segment 3B (230 kV to the existing Jim Bridger Substation) would not be needed.

ROUTE ACTION ALTERNATIVES

Alternatives were developed within each Project segment rather than from the beginning (Windstar Substation) and end points (Hemingway Substation) of the entire project. Project segments are defined by substations since these are the logical connection points of the Gateway West Project with other transmission and distribution lines.

Several alternatives were considered but eliminated from detailed study because it became clear that they provided no environmental benefit over the Proposed Action or one of the other alternatives considered in detail; they were not feasible for environmental, physical, or economic reasons; or they did not reasonably meet the Proponents' Purpose and Need.

Alternatives considered in detail are compared with the Proposed Action based on the same beginning and ending points so all the Action Alternatives can be compared equally. Not all of the Proposed Action segments had feasible alternatives, and some segments only had alternatives proposed for part of their length. Alternatives considered in detail, as well as alternatives considered and eliminated, are shown on Figure A-1 (in Appendix A), and are discussed in detail for each resource in Chapter 3 of the Draft EIS.

Alternative routes were analyzed for route segments 1E, 1W(a), 2, 4, 5, 7, 8, and 9. No alternatives were identified for Segment 6 because it is a rebuild of an existing line. No feasible alternatives were identified for Segments 3 and 10. Segment 3 generally follows Interstate 80 and existing transmission lines and Segment 10 follows a WWE corridor for all but 2.3 miles of its 33.6-mile length. Segments with feasible alternatives are discussed below.

Alternatives 1E-A, 1E-B, and 1E-C Compared to the Proposed Route

Segment 1E of the Proposed Route was developed to avoid multiple transmission lines on private lands in the Dave Johnston – Rock Springs transmission corridor near the North Platte River and to access planned wind energy resources in northwest Albany County, Wyoming. Among the key factors considered in routing this segment were

⁴ The exact time frame for construction of the second single-circuit 500-kV transmission line and associated substation modification depends on market conditions and could occur from 1 to 5 years after completion of the first single-circuit 500-kV line. For the purpose of the environmental analysis, a midrange of 2018 to 2020 was selected.

visual resources, wildlife resources (sage-grouse, big game winter range, and nesting raptors), and geologic features (an ice cave).

Alternative 1E-A was developed as an alternative to the northern segment of the Proposed Route in response to visual and land use impact concerns expressed by local citizens along the Proposed Route. This alternative would minimize the effect of separate transmission lines on private lands located along the existing Dave Johnston – Rock Springs transmission line corridor. Alternative 1E-A is shorter than the comparison portion of the Proposed Route (16.1 miles vs. 17.6) but would have more impacts on visual resources as seen from residences in the Glenrock area. This alternative would parallel an existing transmission line corridor (Segment 1W[c]) for over 80 percent of its length versus approximately 2 percent for the comparison portion of the Proposed Route. However, if Segment 1W(a) of the Proposed Route is built as proposed, Segment 1E of the Proposed Route would be adjacent to the 1W(a) line for approximately half of its length. Alternative 1E-A would cross more big game winter range (30.8 miles vs. 28.0) but less sage-grouse core area (0.5 acre vs. 8.9) than the comparison portion of the Proposed Route. This alternative would be within the buffer of one raptor nest whereas the comparison portion of the Proposed Route would not.

Alternative 1E-B was primarily developed as an alternative to the southern portion of the Proposed Route to avoid sage-grouse core areas. Alternative 1E-B would not cross any sage-grouse core areas whereas the Proposed Route would cross 15.4 miles of this habitat. This alternative would be consistent with the State of Wyoming's Sage-Grouse Core Area strategy, whereas the comparison portion of the Proposed Route would not. This route would cross more Visual Resource Management (VRM) Class II lands (2.6 miles vs. 0) and would result in a new transmission line in the foothills of the Laramie Mountains, creating greater permanent disturbance.

Alternative 1E-C was developed to be approximately 1,500 feet from an existing 230-kV transmission line. Therefore, this alternative would be consistent with the State of Wyoming's Sage-Grouse Core Area strategy, whereas the comparison portion of the Proposed Route would not. This alternative would cross fewer miles of VRM Class I and II lands (0.5 mile vs. 4.8 miles for the comparison portion of the Proposed Route). Alternative 1E-C would be in close proximity to an ice cave, a geologic feature located on private land, which the Proposed Route would avoid. This alternative would cross less big game winter range (32.3 miles vs. 49.1) and would cross the buffers on 6 raptor nests compared to 14 for the comparison portion of the Proposed Route. Alternative 1E-C would not meet the Proponents need to provide 230-kV infrastructure farther east where wind energy resources are planned.

Alternative 1W-A Compared to the Proposed Route

Segment 1W of the Proposed Route was developed to follow an existing utility corridor for most of its length. Among the key factors considered in routing this segment were wildlife resources (sage-grouse, big game winter range, and raptors), cultural resources, historic trails, and wetlands.

Alternative 1W-A was developed as an alternative to the north end of the Proposed Route that uses existing BLM- and Forest Service-designated ROW corridors. This alternative would be parallel to an existing transmission line corridor for 10.7 miles vs.

6.4 miles for the comparison portion of the Proposed Route. Alternative 1W-A would be shorter than the comparison portion of the Proposed Route (16.2 miles vs. 20.3) and, therefore, would result in less overall disturbance. However, it would result in up to three transmission lines on some private parcels. Alternative 1W-A would cross one raptor nest buffer whereas the Proposed Route would not cross any. Both Alternative 1W-A and the comparison portion of the Proposed Route would be consistent with the state's Sage-Grouse Core Area strategy identified in the Wyoming Governor's Executive Order (EO) 2011-5. This alternative would impact 3.6 acres of wetlands whereas the comparison portion of the Proposed Route would not cross any. Alternative 1W-A would potentially affect slightly more cultural resource sites (36 vs. 34) than the comparison portion of the Proposed Route. Alternative 1W-A would cross one fewer historic trail than the comparison portion of the Proposed Route (two vs. three).

Alternatives 2A, 2B, and 2C Compared to the Proposed Route

Segment 2 of the Proposed Route was developed to follow the WWE corridor and existing BLM-designated ROW corridor where feasible. Among the key factors considered in routing this segment were visual resources visible from the Fort Fred Steele State Historic Site and nearby residences, sage-grouse and big game winter range, mining leases, and Special Recreation Management Areas (SRMAs). The current Proposed Route would have the least impact on Fort Fred Steele and residences among the Route Alternatives.

Alternative 2A was developed to maximize the use of the WWE corridor and existing BLM-designated ROW corridor. This alternative is similar in length to the comparison portion of the Proposed Route; however, visual impacts to visitors to Fort Fred Steele State Historic Site would be greater compared to the other alternatives and the comparison portion. Alternative 2A would disturb more sage-grouse core area than the comparison portion of the Proposed Route (16.8 acres vs. 14.9) and would impact more acres of mineral leases (92 acres vs. 83). Alternative 2A would cross less big game winter range than the comparison portion of the Proposed Route (39.4 miles vs. 62.8). Both Alternative 2A and the comparison portion of the Proposed Route would cross the Continental Divide SRMA and the North Platte River SRMA.

Alternative 2B was originally considered by the Proponents as the Proposed Route. Due to local landowner concerns and visual impacts to visitors to the Fort Fred Steele State Historic Site located on the North Platte River as well as several eagle nests in the area, the Proponents relocated the Proposed Route several miles to the south and BLM left the original Proposed Route as an alternative to be analyzed in detail. This alternative would not impact sage-grouse core area and would affect slightly less big game winter range than the comparison portion of the Proposed Route (10.4 miles vs. 16.8). Alternative 2B would affect fewer acres of mineral leases (34 acres vs. 54). Alternative 2B would cross the Continental Divide SRMA whereas the corresponding portion of the Proposed Route would cross the Continental Divide SRMA and the North Platte River SRMA. Alternative 2B would be less visible from the Fort Fred Steele State Historic Site than the comparison portion of the Proposed Route.

Alternative 2C was developed to maximize use of the Wyoming Governor's sage-grouse transmission line corridor to be consistent with EO 2011-5. This alternative would cross

less sage-grouse core area than the Proposed Route (24.1 acres vs. 27.7). This route would be shorter than the Proposed Route or the other alternatives, and thus would result in less disturbance; however, it would impact more acres of mineral leases (63 acres vs. 57). It would also lie on more public and less private land than the comparison portion of the Proposed Route. Neither Alternative 2C nor the corresponding portion of the Proposed Route would cross an SRMA or be near the Fort Fred Steele State Historic Site.

Alternatives 4A, 4B, 4C, 4D, 4E, and 4F Compared to Proposed Route

Initial routing for Segment 4 of the Proposed Route focused on an existing east-west 345-kV ROW with three existing lines originating at the Jim Bridger Power Plant and heading west/northwest into southeastern Idaho. Concerns regarding sage-grouse core area, big game winter range, cultural resources, historic trails, visual resources, and siting on private versus public lands resulted in the identification of six alternative routes.

Alternative 4A was developed to parallel the existing 345-kV corridor where feasible. This alternative would be consistent with EO 2011-5 and was recommended by the Office of the Governor of Wyoming whereas the comparison portion of the Proposed Route would not be consistent. This alternative would be 5 miles shorter and would result in less overall disturbance than the corresponding portion of the Proposed Route. Alternative 4A would cross less VRM Class II lands (13.5 miles vs. 19.1) than the comparison portion of the Proposed Route and less big game winter range (80.1 miles vs. 127.0). Alternative 4A would impact fewer cultural resources than the Proposed Route (189 compared to 250) but would cross historic trails more times (11 compared to 7).

Alternatives 4B through 4F would not be consistent with EO 2011-5. Alternative 4F would cross the least sage-grouse core area (27 miles) and 4C and 4E would cross the most (approximately 57 miles); the comparison portion of the Proposed Route would cross 31.9 miles and Alternative 4A would cross 28.4 miles. Alternatives 4B through 4F would cross, or be in proximity to, more land uses where visual impacts to recreationally and culturally sensitive areas are possible, such as the Cokeville NWR (Alternatives 4B through 4E), the Bear River Special Management Area (Alternatives 4B through 4D), the Raymond Mountain Special Management Area (Alternative 4F), and Fossil Butte National Monument (Alternatives 4B and 4C); however, these alternatives would cross less VRM Class II land than the comparison portion of the Proposed Route. Overall, visual impacts would be least under Alternative 4D. Alternatives 4B through 4E would cross between 102.3 to 117.8 miles of designated big game winter range, whereas the comparison portion of the Proposed Route would cross 127.0 miles and Alternatives 4A and 4F 70.1 and 80.1, respectively. Alternatives 4D, 4E, and 4F would have the fewest cultural resource impacts; Alternative 4B would affect the most cultural resources. Alternatives 4B through 4E would cross historic trails approximately the same number of times as the comparison portion of the Proposed Route (6 to 7), while Alternatives A and F would cross more times (11 and 10, respectively).

Alternatives 5A, 5B, 5C, 5D, and 5E Compared to Proposed Route

Segment 5 alternatives were identified through scoping and in discussions with various stakeholders. Among the key factors considered in routing this segment were visual resources near the Deep Creek Mountains, agricultural lands in the Arbon and Rockland Valleys, crossing the Fort Hall Indian Reservation, residential developments, the Arbon Elementary School, and the East Fork Rock Creek Recreation Area, as well as potential disturbance to nesting bald eagles along the Snake River.

Alternatives 5A and 5B were developed to reduce visual impacts and limit road construction on forested BLM-managed lands in the Deep Creek Mountains. Unlike the Proposed Route, both alternatives would avoid the recreation area. They would also avoid all raptor nest buffers, as would the comparison portion of the Proposed Route. Alternative 5A would come within 1,000 feet of three residences, compared to four for Alternative 5B and the comparison portion of the Proposed Route.

Alternative 5C would parallel an existing transmission line through the Fort Hall Indian Reservation, rather than create a new corridor. In doing so, the length and overall visual impacts would be less under Alternative 5C than the comparison portion of the Proposed Route. However, Alternative 5C would result in additional visual and cultural impacts to the Fort Hall Indian Reservation. Alternative 5C is the preferred route of Power County. Neither Alternative 5C nor the comparison portion of the Proposed Route would be within 1,000 feet of a residence or school.

Alternative 5D was the Proponents' original Proposed Route, but issues were raised by local landowners about impacts to agricultural land. The Proponents agreed to move their Proposed Route several miles to the east and keep the original Proposed Route as an alternative to be analyzed in detail (Alternative 5D). Alternative 5D would affect more agricultural land than would be impacted by the comparison portion of the Proposed Route. Additionally, Alternative 5D would be more visible from residences in the Rockland Valley compared to the Proposed Route, which takes better advantage of topography to minimize visual impacts from the valley. However, it would cross within 1,000 feet of an elementary school (the only alternative to do so) and 24 residences, compared to 10 for the comparison portion of the Proposed Route.

Alternative 5E was developed as an alternative approach to the crossing of the Snake River as requested by Power County. However, it would not meet the separation criteria (minimum of 1,500 feet) from existing high-voltage transmission lines the Proponents established as part of the Project purpose and need. Because it would be adjacent to an existing line, Alternative 5E would have fewer visual effects than the comparison portion of the Proposed Route, would also avoid potential disturbance to nesting raptors, and would affect less agricultural land. It would cross within 1,000 feet of 2 residences compared to 10 for the comparison portion of the Proposed Route.

Alternatives 7A, 7B, 7C, 7D, 7E, 7F, 7G, 7H, 7I, and 7J Compared to Proposed Route

Key factors considered in routing the first third of Segment 7 were similar to those discussed under Segment 5, because the segments parallel one another to the point west of the Deep Creek Mountains where they diverge. Additional factors considered in

routing this segment were impacts to agricultural operations, rural residences, a local hang gliding area, visual resources, National Historic Trails (NHTs), cultural resources, big game winter range, sage-grouse key habitat, designated roadless areas, and local planning goals.

Alternatives 7A and 7B would parallel Alternatives 5A and 5B to the point where they exit the Deep Creek Mountains; therefore, their purpose for development and issues were discussed above. Both alternatives would cross less big game winter range than the comparison portion of the Proposed Route (6.9 and 10.3 acres, respectively, vs. 16.9) but more sage-grouse key habitat (4.6 and 7.9 miles, respectively, vs. 0 miles). Alternative 7B would impact more agricultural land (244 acres vs. 150) than the comparison portion, Alternative 7A approximately the same; both alternatives would cross within 1,000 feet of three residences, compared to two for the comparison portion of the Proposed Route.

Alternative 7C was developed to avoid impacts to sage-grouse, whereas the comparison portion of the Proposed Route would cross 0.2 mile of key habitat. Alternative 7C would cross more big game winter range (7.3 miles vs. 4.8). It would affect less agricultural land than the comparison portion of the Proposed Route (71 acres vs. 119). This alternative would be farther from the Parting of the Ways location on the NHT system. This alternative would cross within 1,000 feet of two residences, compared to none for the comparison portion of the Proposed Route.

Alternative 7D was developed to avoid BLM-managed lands that have an easement restriction that does not allow both transmission line segments cross the Oregon and California NHTs. Alternative 7D would cross 2.5 miles of sage-grouse key habitat compared to 1.7 miles for the comparison portion of the Proposed Route and would cross the same amount of big game winter range (2 miles). Neither Alternative 7D nor the comparison portion of the Proposed Route would cross within 1,000 feet of a residence and both impact a similar amount of agricultural land (37 acres).

Alternative 7E was developed to avoid two sage-grouse leks, sage-grouse habitat in the Water Canyon area, and a local recreational area used as a hang glider launch site. Alternative 7E would cross slightly more sage-grouse key habitat than the comparison portion of the Proposed Route (3.2 miles vs. 3.0). Alternative 7E would cross within 1,000 feet of four residences, compared to seven for the comparison portion of the Proposed Route, and would impact a similar amount of agricultural land (12 and 14 acres, respectively).

Alternative 7F was developed to avoid visual impacts to residential development in the Delco area. This alternative would cross less private land than the comparison portion of the Proposed Route; however, it would cross a scenic byway to the town of Albion. Alternative 7F would cross more big game winter range (10.7 miles vs. 9.3) but less sage-grouse key habitat (3.3 miles vs. 5.1) than the comparison portion of the Proposed Route, although it would not avoid the Water Canyon area. This alternative would impact less agricultural land (29 acres vs. 66) than the comparison portion of the Proposed Route. It would not cross within 1,000 feet of a residence whereas the comparison portion of the Proposed Route would cross within 1,000 feet of seven. Both

Both Alternative 7F and the Proposed Route would affect a planned runway at the Dry Creek Sky Ranch.

Alternative 7G was developed to minimize the extent to which the transmission line would be within a BLM motorized vehicle winter closure area. This vehicle closure area is designated for wintering big game and sage-grouse. Alternative 7G would run along the northern border of the vehicle closure area, whereas the comparison portion of the Proposed Route would run farther within. Despite this difference, Alternative 7G would disturb a comparable amount of big game winter range (3.2 miles vs. 3.1) and sage-grouse key habitat (also 3.2 miles vs. 3.1) as the comparison portion of the Proposed Route. Alternative 7G would also disturb more agricultural land than the comparison portion of the Proposed Route (17 acres vs. 7). Both Alternative 7G and the comparison portion of the Proposed Route would cross within 1,000 feet of one residence.

Through a lengthy process of collaboration with the landowners; local, state, and federal agencies, and the Proponents, Alternative 7I was developed to avoid proximity to agricultural facilities (e.g., dairies and agricultural land). It should be noted that Alternative 7I was presented and supported by local landowners over the Proposed Route but was not supported by the Proponents. As a compromise to the Proposed Route and Alternative 7I, the Proponents developed and support Alternative 7H (which was originally considered but eliminated during their siting study). Cassia County has stated its objection to Alternative 7H. After additional consideration, local landowners proposed Alternative 7J, which requires that an alternative substation, the Rogerson Substation, be constructed instead of Cedar Hill and be located 24 miles southwest of the proposed location for the Cedar Hill Substation.

Alternatives 7H, 7I, and 7J would be longer than the comparison portions of the Proposed Route (9.4, 55.3, and 58.2 miles, respectively). Alternatives 7H, 7I, and 7J would impact less agricultural land (between approximately 490 and 580 acres less) than the comparison portions of the Proposed Route. The three alternative routes would impact less big game winter range, 37.3, 45.4, and 47.9 miles, respectively, than the comparison portions of the Proposed Route (50.1 miles for the 7H and 7I comparison portion and 60.0 miles for the 7J portion). Alternatives 7H, 7I, and 7J, being longer, would result in greater amounts of ground disturbance during construction, operations, and maintenance than the comparison portions of the Proposed Route; they would also have a greater visual impact to sensitive federal lands. Alternatives 7I and 7J would have the potential to impact visitors to the City of Rocks National Reserve as well as local sensitive viewing areas such as Sparks Basin, Granite Pass, the Sawtooth National Forest, and the California NHT. Alternatives 7I and 7J would pass along the southern edge of the proposed Tunnel Hill Archaeological District. In addition, Alternatives 7I and 7J would cross into Nevada for 7.2 miles, the only alternatives that would cross that state. Finally, these alternatives would cross more sage-grouse key habitat (41.1, 67.8, and 73.0 miles, respectively, vs. 11.9 and 16.8) and cross more nesting raptor buffers (54, 66, and 85, respectively, vs. 12 and 32) than the comparison portions of the Proposed Route.

Alternatives 8A, 8B, 8C, 8D, and 8E Compared to the Proposed Route

Key factors considered in routing this segment included using the WWE corridor where possible, conflicts with agricultural lands, residential development, visual resources, the Morley Nelson Snake River Birds of Prey National Conservation Area (SRBOP), the Guffey Butte-Black Butte Archaeological District, and the IDANG Orchard Training Area.

Alternative 8A was developed to maximize use of the WWE corridor. This alternative would cross 6.2 miles of VRM Class I (but no Class II) land whereas the comparison portion of the Proposed Route would cross 3.2 miles of Class I and 8.1 miles of Class II. The comparison portion of the Proposed Route would be close to the communities of Hagerman and Glens Ferry, the Hagerman Fossil Beds, and the Billingsley Creek Wildlife MA. This alternative would impact more cultural resources than its comparison portion of the Proposed Route (84 vs. 33). It would cross within 1,000 feet of 46 residences compared to 14 for the comparison portion of the Proposed Route. It would affect slightly less agricultural land (182 vs. 188 acres).

Alternative 8B, originally considered for the Proposed Route to avoid the SRBOP and the IDANG Orchard Training Area, became an alternative due to opposition from the cities of Kuna and Melba, Idaho. Alternative 8B is in close proximity to several residential areas, crossing within 1,000 feet of 55 residences compared to 12 for the comparison portion of the Proposed Route, resulting in greater visual effects on these communities. This alternative would cross within the Kuna city boundary and may affect future development patterns. This alternative would avoid crossing the SRBOP. Alternative 8B would affect more agricultural land (213 acres vs. 29) than the comparison portion of the Proposed Route. Unlike the Proposed Route, it would not cross the archaeological district.

Alternative 8C was also originally considered as part of the Proposed Route. However, it would have an adverse visual impact on residential areas. Although it would only cross within 1,000 feet of one residence, this route would be close to planned expansion of the planned Mayfield Springs community. The comparison portion of the Proposed Route would not be within 1,000 feet of a residence and would not affect the planned subdivision. Alternative 8C would cross more agricultural land (12 acres vs. 0) than the comparison portion of the Proposed Route.

Alternative 8D was developed to avoid the Alpha Maneuver Sector of the IDANG Orchard Training Area (but not the Bravo Sector). The IDANG recently commented that it would prefer a route that completely avoids the training area. Other environmental impacts would be similar to the comparison portion of the Proposed Route.

Alternative 8E was developed to avoid the Halverson Bar non-motorized area in the Guffey Butte-Black Butte Archaeological District. This route would still cross the SRBOP. Neither this alternative nor the comparison portion of the Proposed Route would cross within 1,000 feet of a residence. However, it would follow a portion of Alternative 9D. If that route were selected, Alternative 8E could not be used. Conversely, if Alternative 8E were selected, the Alternative 9D route could not be used.

Alternatives 9A, 9B, 9C, 9D, 9E, 9F, 9G and 9H Compared to the Proposed Route

Key factors considered in routing this segment were agricultural and residential development in Owyhee County, visual resources, the Jarbidge Military Operations Area, Saylor Creek Air Force Range, Balanced Rock County Park, Bruneau Dunes County Park, the Cove Non-motorized Area, and Salmon Falls Creek Wild and Scenic River (WSR).

Alternative 9A was the Proponents' original Proposed Route. The Proponents worked with local citizens, landowners, and the BLM to move a 7.8-mile portion of the Proposed Route about a mile to the south to avoid impacts to irrigated agriculture and dairies, leaving the original Proposed Route as an alternative to be analyzed in detail.

Alternative 9A and the comparison portion of the Proposed Route would both cross within 1,000 feet of one residence, and Alternative 9A would impact an additional 3 acres of agriculture land compared to the comparison portion of the Proposed Route.

Alternative 9B was developed to maximize use of the WWE corridor and to parallel existing utility corridors; however, Alternative 9B would have greater visual impacts due to its proximity to private lands, historic trails, and VRM Class I lands. Alternative 9B would be within 1,000 feet of seven residences, compared to none for the comparison portion of the Proposed Route. It would disturb more agricultural land than the comparison portion of the Proposed Route (206 acres vs. 45). Alternative 9B would avoid crossing both the WSR and the eligible WSR portions of Salmon Falls Creek; the comparison portion of the Proposed Route would cross the eligible portion only. Both Alternative 9B and the comparison portion of the Proposed Route would avoid crossing Balanced Rock County Park.

Alternative 9C would parallel existing transmission lines in corridors for a greater extent than the comparison portion of the Proposed Route (10.4 miles vs. 1.0) but would have a greater visual impact on Balanced Rock County Park due to its proximity. Alternative 9C would be within 1,000 feet of five residences, compared to none for the comparison portion of the Proposed Route. This alternative would impact more agricultural lands than the comparison portion of the Proposed Route (62 acres vs. 0). Alternative 9C would not cross the eligible WSR portion of Salmon Falls Creek whereas the comparison portion of the Proposed Route would.

Alternatives 9D and 9E were developed as a result of collaboration with citizens, landowners, the BLM, the Owyhee County Task Force, and the Proponents to avoid private lands and maximize the use of public lands in Owyhee County. Both alternatives would deviate from the WWE corridor, which would be followed by the comparison portion of the Proposed Route; however, both alternatives would cross less private land (3.3 and 1.3 miles, respectively, vs. 18.4 miles). Alternatives 9D and 9E would not cross within 1,000 feet of a residence, whereas the comparison portion of the Proposed Route would be within 1,000 feet of nine residences. Both alternatives would impact less agricultural lands (19 and 3 acres, respectively, vs. 199 acres). Alternative 9D would cross more BLM-managed VRM Class II lands (11.5 miles vs. 0.2) than the comparison portion of the Proposed Route. Alternative 9D would be within the SRBOP for well over half of its length.

Alternatives 9F and 9H were proposed by the BLM to avoid the non-motorized portion of Swan Falls, avoiding both the Cove Non-motorized Area and the non-motorized portion of the Guffey Butte-Black Butte Archaeological District. Alternative 9F would cross the river twice, once near the C.J. Strike SRMA and again near the Swan Falls Dam. However, the route it would follow to avoid the non-motorized area in the historic district would be the same alignment that Alternative 8E would follow. If 8E were selected, Alternative 9F could not also be selected. Therefore, Alternative 9G was proposed by the BLM. It would avoid the non-motorized portion of the historic district but not the Cove Non-motorized Area. Alternative 9G follows the same route as Alternative 9D through the Cove area, then, where Alternative 9D/9G merge with Alternative 9F/9H, it follows the same route as 9H. It would cross the river approximately 3 miles south of the Alternative 9F crossing point. Alternative 9F would be within 1,000 feet of eight residences, compared to nine residences for the comparison portion of the Proposed Route, whereas Alternative 9G would not be within 1,000 feet of any residences. Impacts to agricultural land from Alternative 9G would be similar to those for Alternative 9D.

Alternative 9H is another route developed by the BLM that would avoid the Cove Non-motorized Area and the non-motorized portion of the Guffey Butte-Black Butte Archaeological District. Like Alternative 9G, this route was proposed in the event that Alternative 8E was selected and Alternative 9F could not be used. As with Alternative 9F, Alternative 9H would be within 1,000 feet of eight residences, compared to nine for the comparison portion of the Proposed Route. Both Alternatives 9F and 9H would cross within 300 feet of two residences, less than the six residences along the comparison portion. Impacts to agricultural land would be similar to those for Alternative 9F.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the Project would not be constructed or operated. No Project-related impacts to physical or biological resources would occur. Impacts to these resources would continue as a result of natural events (such as fire, drought, and severe weather) and existing and future developments in the area. No direct Project-related impacts to socioeconomics would occur. However, as discussed in Chapter 1 of this Draft EIS, the Gateway West Project is needed to supplement existing transmission lines and relieve current congestion, capacity, and reliability constraints in the existing electric transmission grid, and allow for the delivery of up to 3,000 MW of additional energy for the Proponents' larger service areas, primarily in Utah and Idaho. The purpose and need of the proposed Project would not be met under the No Action Alternative and existing constraints coupled with projected increases in demand in the Proponents' service areas could result in insufficient supply to meet energy demand and an increase in the potential for supply outages. These potential impacts could have detrimental socioeconomic impacts, with negative impacts to existing businesses and economic activities, as well as businesses and economic activities that might otherwise consider locating in the affected service areas.

EFFECTS

The following section summarizes the effects analysis documented in Chapter 3 of the Draft EIS.

VISUAL RESOURCES

BLM administered-lands crossed by the Project were analyzed based on the VRM system. National Forest System (NFS) lands crossed by the Project were analyzed based on the Scenery Management System (SMS) or the Visual Management System (VMS), depending on the National Forest crossed by the Project. Generally, the proposed transmission line would be in conformance with the visual classifications VRM III and VRM IV. On NFS lands, the transmission line would be generally consistent with a Low or Very Low (SMS)/Modification and Maximum Modification (VMS). However, the transmission lines were considered to not be in conformance with VRM Classes I and II on BLM-managed lands and with Very High, High, and Moderate (SMS) and Preservation, Retention, and Partial Retention (VMS) on NFS lands. Management plan amendments would be needed where a proposed or alternative route does not conform with the visual management objectives on federal land.

CULTURAL RESOURCES

Construction of the transmission line and its ancillary facilities could directly impact existing cultural resources, such as prehistoric or historic archaeological sites, districts, buildings, trails, roads, and landscapes. In limited cases, the setting of an historic property could be indirectly impacted by the Project. Construction or other ground-disturbing activities could directly or indirectly impact previously undetected cultural resources, especially buried resources. Such impacts are likely to be adverse. Identification of new or previously recorded cultural resources and increased use of existing and new access roads may encourage unauthorized site access, artifact collection, and vandalism. Construction access roads are temporary features, however, and vegetation along those roads would be allowed to grow back once construction is completed. Over time, these roads would be indistinguishable from other two-track roads in the Analysis Area. The visual impacts of these roads on historic trails/roads are considered to be minimal, because their appearance and purpose are not incompatible with the historic features. Short-term impacts on the setting and feeling for NHTs and Traditional Cultural Properties may be introduced through the addition of structural elements to the landscape.

Mitigation measures would avoid potential impacts to cultural resources if relocation of Project features is possible. However, if avoidance is not feasible, potential impacts would be mitigated through measures established through consultation under Section 106 of the National Historic Preservation Act.

SOCIOECONOMICS

Construction of the Proposed Action would generate economic activity in the form of Project-related expenditures on materials and supplies. The Project would also employ construction workers who would in turn be expected to spend much of their income

within the Analysis Areas and increase output in the sectors that provide consumer goods and services. The proportion of workers likely to come from outside the Analysis Area would vary by Engineering, Procurement, and Construction (EPC) contract and over the construction period because the mix of labor categories or skills will vary. For the purposes of analysis, the Proponents estimate that during peak construction periods 20 percent of the workforce would be local (i.e., normally reside within commuting distance of the job sites), and would likely commute to and from their homes to work each day. The remaining 80 percent of the workforce would either temporarily relocate to the affected regions or commute from their permanent residences.

Many non-local workers would provide their own housing in the form of recreational vehicles (RVs) or pop-up trailers, with the remaining non-local workers expected to require rental housing (apartments, houses, mobile homes) and motel or hotel rooms. Construction workers, particularly those working in less populated areas, would be expected to commute longer distances to the job site, with commutes of up to 90 minutes each way possible. Existing housing resources, rental housing, hotels and motels, and RV spaces tend to be concentrated in and around the larger communities in the Analysis Areas. Projected local and non-local employment totals are summarized for average weekly and peak employment by EPC Analysis Area in Table 3.4-20 of the Draft EIS. Very few, if any, of the workers employed during the construction phase of the Project would be expected to permanently relocate to the area.

ENVIRONMENTAL JUSTICE

Data compiled by the U.S. Census at the block group level indicate the presence of minority and low income communities in the vicinity of the Proposed Route and Route Alternatives. Construction of the proposed Project is not, however, expected to have high and adverse human health or environmental effects on nearby communities. Adverse construction-related impacts would likely include increases in local traffic and noise, as well as dust, and could result in temporary delays at some highway crossings. Construction workers temporarily relocating to the Project area would increase demand for local housing resources. These impacts would be temporary and localized, and are not expected to be high. Potential impacts on public safety are discussed in Section 3.22 – Public Safety.

Construction would also increase demand for education, health care, and municipal services, as well as potentially increase demand for police and fire protection services. However, these impacts are also expected to be temporary and would not measurably affect the quality of services currently received by local communities and residents. Local construction expenditures for materials and supplies and spending by workers directly employed by the Project are expected to benefit local economies. Construction would also generate state and local tax revenues. The Project would benefit service industry occupations that are typically relatively low paid, particularly those associated with accommodation and food service. These benefits would result from increased demand and spending by construction workers temporarily relocating to the Project region, and would be short-term.

VEGETATION COMMUNITIES

The effects of a transmission line crossing shrub-steppe and other low vegetation would generally be minor, and would consist of the localized impacts from clearing and grading of lands, as well as the use, maintenance, or restoration of the Project components. For impact analysis, all construction sites are assumed to have total loss of existing vegetation, although some construction sites may not need to be graded, which would reduce the loss of vegetation.

In forested areas, clearing for construction of the transmission line would include clearing all vegetation from the construction work area for each tower and cutting trees and tall shrubs out of the ROW to avoid damage or danger to the conductors. Ongoing ROW maintenance would include continuing to cut trees and tall shrubs along the ROW. The area within the ROW would no longer be available for growing and harvesting timber products.

INVASIVE PLANT SPECIES

Vegetation removal and soil disturbance during construction could create optimal conditions for the establishment of noxious weeds and invasive species. Noxious weeds and invasive species produce abundant seed, have few natural competitors, and once established spread quickly and overtake desirable plant communities. Vehicles and construction equipment traveling from weed-infested areas into weed-free areas could disperse noxious weed and invasive species seeds. If weed seeds are transported, this could result in the establishment of weeds in previously weed-free areas or expand the distribution or abundance of existing noxious weeds and invasive species populations. Additionally, activities such as excavation and transportation of borrow materials and topsoil, land clearing, and reclamation may contribute to the spread of noxious weeds and invasive species. Vegetation removal, soil disturbance, and the use of materials from outside sources associated with these activities encourage germination of weed seeds and spread of roots and seeds. Disturbed areas may be seeded by airborne seeds from plants in adjacent habitats, which may include seeds from noxious weeds or invasive species. After construction, noxious weeds and invasive species can persist or become established in disturbed and reclaimed areas and those that are present in the construction areas may spread into adjoining habitats.

EPMs and Agency mitigation measures would substantially reduce the potential for the spread of noxious weeds and invasive species that could result from construction of the Project.

WETLANDS

Construction of the Project would impact wetlands and riparian areas in a variety of ways, primarily as a result of the vegetation clearing. Removal of vegetation could alter various functions provided by these areas, including their ability to provide wildlife habitat, and trap sediment and nutrients. Soil disturbances and removal of vegetation within a wetland or riparian area could temporarily alter the area's ability to moderate food flow, control sediments, or facilitate surface water flow. Removal of vegetation

could also increase water and soil temperatures, and alter the species composition within these areas.

Increased soil disturbances can lead to invasions by exotic plant species, which can alter the composition and function of wetlands and riparian areas. Blasting within or adjacent to a wetland could fracture the bedrock and alter the hydrology of a perched water table, thereby leading to drier conditions and impairment of revegetation efforts. Withdrawal of water for use during construction may have temporary effects on wetlands adjacent to streams, by reducing water input. Failure to restore disturbed areas to their preconstruction conditions (contours, hydrology, segregation, and restoration of topsoil) could impede the re-establishment of desirable wetland and riparian vegetation during revegetation efforts.

Although some Project-related disturbances would be temporary and confined to the construction phase, other impacts would continue through the operations phase, especially in areas where construction sites are located within forested wetlands or riparian areas. Construction impacts in forested wetlands and forested riparian areas would generally involve a conversion to a different wetland type (i.e., a change to shrub or herbaceous vegetation cover), rather than a loss of wetland acreage. Similar changes would occur in riparian areas within the ROW. It is likely that recovery would be fairly rapid in herbaceous and shrub wetlands, and construction in these types is not likely to cause a conversion to a different type. Long-term impacts could include soil compaction from heavy equipment, or alteration of surface or subsurface water movement in wetlands and riparian areas from blasting effects.

In general, wetlands and riparian areas were avoided during selection of construction sites; however, some wetlands and riparian areas are intersected by the preliminary Project design. Impacts would be avoided and minimized during final design by rerouting Project components outside of wetlands, and limiting impacts to upland areas to the extent practical; however, there would likely be some locations where this would not be feasible (such as areas within the Bear River floodplain).

WILDLIFE AND FISH

Clearing of vegetation for Project facilities may decrease habitat quantity and quality for wildlife species, and the degree of this impact would vary depending on vegetation type and recovery time. In addition to the direct effects of habitat loss, the proposed Project could indirectly impact wildlife through habitat fragmentation (breaking up of contiguous areas of vegetation/habitat into smaller patches). Fragmentation can affect wildlife and habitat quality by altering nutrient flows/cycling, increasing the rate of invasion by noxious weeds and invasive wildlife species, lowering the carrying capacity of a habitat/patch, and disrupting meta-population dynamics (Sanders et al. 1991). In addition, fragment edges (both natural and created) play a crucial role in ecosystem interactions and landscape function, including the distribution of plants and animals, fire spread, vegetation structure, and wildlife habitat.

Impacts to big game from Project construction would include vehicle collisions, noise, fugitive dust, habitat loss and alteration, and visual disturbance, which is a change in the viewshed of the animal that is perceived as alarming. Noise and visual disturbance

and fugitive dust could displace big game from both winter and parturition areas during crucial periods. This displacement could affect winter survival by causing animals to mobilize energy reserves that are needed to survive the winter. This could also impact reproductive success if females are sufficiently disturbed to not provide adequate care for young.

Direct impacts on migratory birds could include collisions with construction vehicles or other equipment, direct removal of nesting habitat, destruction of nests, induced abandonment of nests due to construction noise, fugitive dust, and visual disturbance. Nesting birds are particularly sensitive to disturbance, and some disturbance could lead to nest failure or abandonment. Because Project construction and vegetation clearing would take place during the spring and summer when migratory birds are nesting, the potential exists for nest destruction and nest abandonment due to disturbance. The Proponents are advised of the need to comply with the Migratory Bird Treaty Act, under which destruction of eggs or nests is prohibited. Migratory birds include songbirds, waterfowl, shorebirds, and raptors.

A potential direct adverse impact from construction of the Project is decreased water quality from suspended sediment. High levels of suspended sediment and associated high turbidity can have adverse effects on fish behavior and physiology (e.g., blood chemistry, gill trauma, immune system resistance), and can cause mortality if levels become high enough. Loss of riparian habitat type and its associated benefits (e.g., shade, large wood, organic input, root stability) from both road presence and the clearing of trees from the transmission line's ROW would continue to occur during operations.

SPECIAL STATUS SPECIES

Impacts from construction activities could result in the crushing or removal of special status plants, as well as direct loss of habitat. Indirect impacts would include fragmentation of suitable habitat, alteration of fire regimes, introduction or spread of invasive exotic species, isolation of subpopulations due to physical separation by access roads or transmission infrastructure, increased erosion, and alteration of habitat microclimates or hydrology. Maintenance of vegetation in the ROW, including cutting of trees and taller shrubs, is not expected to affect any threatened, endangered, or sensitive plant species because, for this Project, all of these species occur in habitats dominated by low-growing vegetation. Whitebark pine, if listed, would be an exception but it would be avoided during final design.

The Proponents have proposed a series of EPMs meant to reduce or prevent impacts to special status plant species as well as to general vegetation (see Appendix C-1). In some cases the Agencies have determined that these EPMs are not sufficient, or are not in compliance with agency stipulations, and, therefore have recommended additional mitigation measures (see Table 2.7-1 for a summary of these measures).

The Project could result in direct mortality, or have direct adverse impacts on special status wildlife species' habitat. Indirect effects could occur if these species avoid the area during construction. Wildlife species likely to be affected include Canada lynx, Columbia spotted frog, greater sage-grouse, Columbia sharp-tailed grouse, grizzly bear,

mountain plover, northern leopard frog, pigmy rabbit, piping plover, least tern, whooping crane, yellow-billed cuckoo, bald eagle, black-tailed and white-tailed prairie dog, burrowing owl, Preble's meadow jumping mouse, and pocket gopher. Fish species that may be affected include Colorado pikeminnow, razorback sucker, humpback chub, bonytail, palled sturgeon, and various trout.

SOILS, GEOLOGIC HAZARDS, AND MINERALS

Project construction activities that would affect soils include clearing, grubbing, and grading along the ROW and at additional temporary workspaces; trenching; backfilling; excavating; and construction of permanent structures, such as transmission line towers, access and service roads, co-generation sites, and substations. The total Project construction disturbance area would comprise approximately 16,000 acres. Ground clearing during construction would increase the potential for erosion, as well as soil compaction. Removal of protective vegetation would expose soil to potential wind and water erosion. The Proposed Route would cross areas with soils that are highly susceptible to wind erosion. Reclamation would be necessary in disturbed soil areas. Appendix C-2 presents the Framework Reclamation Plan for Construction Activities that the Proponents would use for Project reclamation.

Landslides could occur in mountainous portions of the Project area. Landslides are often triggered by other natural events, including earthquakes, or precipitation sufficient to cause earth movements. Certain geologic formations such as the Green River Formation are known to be more susceptible to landslides than others. The greatest landslide risks are in Segment 4, where 46 percent of the routes cross areas of medium to high landslide risks. The route crosses areas where earth quakes may occur, especially in Segments 4, 5, and 7. Transmission lines and associated facilities could be negatively affected by geologic hazards, including earthquakes, landslides, subsidence, and blast vibrations in shallow bedrock.

Subsidence is the vertical sinking of earth, typically because of a natural or man-made void in underlying rock formations. There are no large areas of cavernous limestone or natural voids in the area crossed by the Proposed Route and Alternatives. Human-caused subsidence occurs in areas overlying extensive underground mine workings or in areas of aquifer drawdown or removal of other fluids, such as natural gas or crude oil. Because of their large extent, underground trona and coal mines are particularly susceptible to subsidence. Mineral extractions that could result in subsidence only occur in Segments 1 through 4, the risk is highest in Segment 4.

PALEONTOLOGY

Direct effects due to construction include the possible damage to paleontological specimens and possible loss of associated data. On the other hand, construction activities can also provide opportunities to recover specimens and associated scientific information that might be otherwise lost. Indirect effects due to construction include the unauthorized collecting or destruction of paleontological specimens due to increased access. The two construction sources of greatest potential impact are the excavation and leveling of pads for the towers and in the grading of access roads. The impacts from grading of access roads would be more amenable to mitigation than would the

augering impacts. Monitoring can detect resources as they are uncovered, and grading can be halted or rerouted to permit resource recovery.

WATER RESOURCES

Most of the impacts to water quality would occur due to the crossing of waterbodies by new access roads; as transmission line crossings would only impact small isolated areas of vegetation (due to initial clearing and ongoing tree height maintenance), which would not be expected to result in a substantial increase in stream temperatures, sedimentation, or alterations to stream stability or water quality. Road crossings could result in a potential for localized increases in surface water sedimentation, erosion, and water temperatures, due to the potential for in-water work, and the direct impacts to stream banks and adjacent vegetation. These impacts would be greatest in areas that contain forested riparian vegetation; however, the Project has been routed to avoid these areas to the extent practical. In addition, the Agencies have identified mitigation measures to reduce adverse effects.

It is unlikely that this Project would affect groundwater due to the shallow excavations required for Project foundations. Shallow groundwater of 13 feet or less is present only in Segments 4, 5, and 7. Any impacts to groundwater would be short-lived and consist mainly of temporary sedimentation. Excavations for transmission line structures may contact shallow groundwater; however, the groundwater contact would be unlikely to adversely impact this resource, unless an accidental chemical spill occurs near an open excavation. Fuels, other petroleum products, chemicals, and hazardous materials (including wastes) would be located in upland areas at least 500 feet away from streams, 400 feet for public wells, and 200 feet from private wells. Typically, contact with construction equipment would not impact groundwater quality except to increase turbidity temporarily in a limited area. The Project would not be expected to impact water quality in potable water wells.

LAND USE AND AGRICULTURE

Table ES-1 (above) summarizes land ownership by segment. Approximately 45 percent of the land crossed would be federal, 9 percent state, and nearly 46 percent would be privately owned. Federal land crosses by the Proposed Route are covered by over 20 resource management plans. Portions of the route would not conform with one or more components of many of these plans. Therefore, plan amendments would be required.

The Proposed Route would cross several important historic trails, including the Oregon, California, Mormon Pioneer, and Pony Express NHTs.

Short-term disruption of farming activities along the ROW could occur locally during construction. While agricultural mitigation measures are expected to reduce impacts, farmland and range land within the construction zone would be unavailable to agriculture during the construction interval. With the exception of land that would be occupied by towers and access roads for the life of the Project, farmland and range land within the construction zone would be available for agricultural use following the completion of construction. The Proponents do, however, recognize that the Project has the potential to have long-term detrimental impacts on farms and would negotiate

damage-related issues, such as reductions in the acreage available for cultivation or for use in forage production, with affected farmers compensated during the easement acquisition process. Potential impacts to agricultural property values would also be addressed during the easement acquisition process.

Potentially affected landowners and farmers have also expressed concern that the presence of a transmission line could have long-term negative impacts on agricultural operations in the immediate vicinity. Concerns raised with respect to operations include interference with Global Positioning Systems used to guide farming operations, the potential for the transmission line to accelerate the degradation or corrosion of irrigation systems used in the vicinity, the potential for stray voltage to cause electric shocks to farmers and farm workers in the immediate vicinity, and potential impacts to crop spraying in areas that are usually treated by aerial application. These potential concerns are discussed in detail in the Draft EIS.

AIR QUALITY

The construction activities that would generate emissions include land clearing, ground excavation, and cut and fill operations. These construction activities would occur 6 days per week for up to 12 hours per day during the construction periods. The intermittent and short-term emissions generated by these activities would include dust from soil disruption and combustion emissions from the construction equipment. Emissions associated with construction equipment include particulate matter with a diameter of less than 10 microns and 25 microns, nitrogen oxides, carbon monoxide, volatile organic compounds, sulfur oxides, and small amounts of air toxics. These emissions could result in minor, temporary impacts on air quality in the vicinity of the construction activities.

Emissions from construction of the transmission line, substations, and regeneration facilities are not expected to violate applicable ambient air quality standards because the construction equipment would be operated on an as-needed basis during daylight hours only and the emissions from gasoline and diesel engines would be minimized because the engines must be built to meet the standards for mobile sources established by the U.S. Environmental Protection Agency (USEPA). Most of the construction equipment would be powered by diesel engines that would meet current emissions standards based upon engine size and date of manufacture, and Project-related vehicles and construction equipment would be required to use the new low sulfur diesel fuel as soon as it is commercially available. The Agencies have identified mitigation measures that would substantially reduce impacts on federal lands and recommend that the Proponents implement them Project-wide.

NOISE

Project construction would produce noise from heavy equipment needed to build the proposed transmission line routes and electrical substations. Short-term use of equipment such as backhoes, cranes, front-end loaders, bulldozers, graders, excavators, compressors, generators, and various trucks would be needed for mobilizing crew, transporting and use of materials, line work, and site clearing and preparation. Use of drill rigs, large augers, and rock drills would be required for the

poured-in-place foundations at each tower location. It is not expected that pile driving would be needed during construction. Spur roads and access roads would require use of earthmoving equipment such as bulldozers and graders. Construction noise is usually made up of intermittent peaks and continuous lower levels of noise from equipment cycling through use. Noise levels associated with individual pieces of equipment would generally range between 70 and 90 A-weighted decibels (dBA; USDOT 2006). Maximum instantaneous construction noise levels would range from 80 to 90 dBA at 50 feet from any work site. Additional noise sources may include commuting workers, and trucks and helicopters moving material to and from the work sites.

Noise is expected to vary regularly throughout the construction period, making the calculation of a specific received sound level value at each noise sensitive area (NSA) location difficult. The critical distances corresponding to the USEPA noise guidelines and other criteria developed by the Project to assess construction noise impacts were calculated. Sound generation was modeled according to the grouping of construction equipment provided in Section 23 – Noise, Table 3.23-5, of the Draft EIS. The results of the modeling determined the distance from the construction site where sound levels would attenuate to the criteria levels. These distances included the following:

- A critical distance of 407 feet corresponding to the USEPA 70 dBA $L_{eq(24h)}$ guideline, and
- A critical distance of 280 feet corresponding to the USDOT 80 dBA $L_{eq(8h)}$ guideline.

Thus, NSAs situated within these critical distances may experience a short-term impact as a result of Project construction noise. While Project construction would generate unavoidable noise impacts at some NSAs, impacts would be temporary and intermittent.

Helicopters would be used in areas where access is limited or where there are environmental constraints to accessing the Project area with standard construction vehicles or equipment. Helicopter uses include delivery of construction laborers, equipment and materials to structure sites, structure placement (except tubular steel poles), hardware installation, and wire stringing operations. When helicopter construction methods are employed, activities would be based at a fly yard, which is a Project-material staging area located within 4 to 8 minutes from the work site. Helicopters generally fly at low altitudes; therefore, potential temporary increases to ambient sound levels would occur in the area where helicopters are operating as well as along their flight path. Typically, helicopters may generate noise levels of 89 to 99 dBA at 50 feet when in flight at 200 feet.

CUMULATIVE EFFECTS

The effects of the proposed Gateway West Project, when taken together with past, present, and reasonably foreseeable future actions, constitute the cumulative effects of the Project and are fully analyzed in Chapter 4. Chapter 4 also discusses the cumulative effects of land use plan amendments needed to allow for the Proposed or Alternative Routes when the amendment would change one or more land

classifications. For many resources, the effects of Gateway West, when combined with the effects of other known projects, are not cumulatively substantial. In other cases, although the effects of Gateway West are minor, when taken together with effects of other past, present, and proposed future actions, many of which collectively already present a substantial cumulative effect, the cumulative impact may be considerable. Finally, there are some effects of Gateway West that are by themselves large, and when considered with other effects, are also cumulatively substantial.

Resources for which Gateway West effects are minor and even when considered together with other projects remain less than cumulatively substantial include socioeconomics, environmental justice, weeds, wetlands, federally listed invertebrate species, lynx, wolf, yellow-billed cuckoo, bald eagle, minerals, paleontological resources, geologic hazards, transportation, air quality, electrical environment, public safety, and noise. Additional details are found in Chapter 4.

Gateway West, by itself, has minor effects on vegetation, soils, and waterbodies where crossed by access roads and therefore on habitat for most wildlife and fish species, including specifically sagebrush-obligate species (Columbian sharp-tailed grouse, mountain plover, white- and black-tailed prairie dogs, pygmy rabbits, greater sage-grouse, Wyoming pocket gopher, and burrowing owl) and riparian-obligate species (Columbia spotted frog, northern leopard frog, and Preble's meadow jumping mouse). However, even without Gateway West's effects, the loss of habitat and fragmentation from past and present events alone is considerable. When the Gateway West effects are taken together with historic and present events and projects as well as with multiple future projects, the level of soil and habitat loss and fragmentation continues to be considerable. The Proponents have offered off-site compensatory mitigation in recognition of the current critical condition of some types of habitat and the contribution that Gateway West may make to that loss. BLM has required additional mitigation and is considering further mitigation for habitat losses from the Project as detailed in Chapter 3.

The Gateway West Project would not have a measurable adverse effect on migratory bird populations or significant bird conservation sites. It would, however, have a small adverse effect on migratory bird habitats and ecological conditions through vegetation removal, fragmentation of native habitats, and possible increases in predation pressure due to adding perching substrate for avian predators and adding service roads sometimes used by canid predators. When taken together with the existing substantial habitat loss caused by past, present, and reasonably foreseeable actions, the cumulative impact on migratory bird habitat and ecological conditions is substantial.

Gateway West, by itself, would have minor adverse effects to private land uses or to agriculture with the degree of impact varying by alternative. When taken together with many of the factors that constrain and limit agriculture, including availability of irrigation water and development pressure on property values, additional land withdrawals for utility uses can be very important to individual farmers and to agricultural communities. On federal lands, both the Proposed Route and some alternatives would require changes in existing land use plans. In particular, visual resource or scenic management objectives would not be met if some of the proposed or alternative routes were chosen, and existing specifications for allowable levels of visual contrast would have to be

altered. Also, several land management plans would require amendments to allow the Project. In some cases, large areas of public lands would be reclassified, possibly allowing for additional projects without additional plan amendments. These impacts to land use planning goals are considerable, particularly when taken together with other transmission lines requesting similar consideration, which if granted along the same route would create a large utility corridor.

Any new water withdrawals in the watersheds of the Platte and Colorado Rivers (Segments 1 to 4 in Wyoming) would require either participation in the recovery programs for those rivers (provided for in programmatic biological opinions for each) or a separate consultation with the USFWS. Gateway West and all new proposed construction projects in those watersheds in Wyoming would require some water during construction and would be subject to concerns regarding withdrawals. BLM would participate in the USFWS recovery program and would require the Proponents to pay the assigned fee for water uses during construction over in either watershed. Any new withdrawals from either river are considered a significant adverse impact on warm-water fisheries and associated endangered fish species as well as riparian-obligate species of plants. However, participation in the recovery program relieves the Project of a jeopardy decision.

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

CONFORMANCE WITH FEDERAL MANAGEMENT PLANS

Table ES-2 lists the areas of non-conformance with Resource Management Plans, Management Framework Plans, and Forest Plans.

Table ES-2. Non-conformance with Resource Management Plans, Management Framework Plans, and Forest Plans

Plan	Routes not in Conformance
Casper Resource Management Plan (RMP)	Proposed 1E; Proposed 1W(a), 1W(c); Alternative 1E-C
Medicine Bow National Forest Revised Land and Resource Management Plan (Forest Plan)	Proposed 1E; Proposed 1W(a), 1W(c); Alternative 1E-C
Rawlins RMP	Proposed 1E, Alternative 1E-B; Proposed 2
Green River RMP	Proposed 3; Proposed 4, Alternatives 4B, 4C, 4D, 4E
Kemmerer RMP	Proposed 4, Alternatives 4A, 4B, 4C, 4D, 4E, 4F
Caribou Revised Forest Plan	Proposed 4
Malad Management Framework Plan (MFP)	Proposed 5, Alternative 5A, Alternative 5B; Proposed 7, Alternative 7A, Alternative 7B

Table ES-2. Non-conformance with Resource Management Plans, Management Framework Plans, and Forest Plans (continued)

Plan	Routes not in Conformance
Sawtooth Forest Plan	Alternatives 7H, 7I, 7J
Cassia RMP	Proposed 7, Alternatives 7E, 7H, 7I, 7J
Twin Falls MFP	Proposed 9, Alternative 9A; Alternatives 7I, 7J
Jarbidge RMP	Proposed 8, Alternative 8A; Proposed 9, Alternatives 9B, 9D/9G
Morley Nelson Snake River Birds of Prey National Conservation Area RMP	Proposed 8, Alternatives 8D, 8E; Proposed 9, Alternatives 9D, 9E, 9F, 9G, 9H
Bennett Hills/Timmerman Hills RMP	Proposed 8
Wells RMP	Alternatives 7I, 7J
Bruneau MFP	Proposed 9
Kuna MFP	Proposed 8, Alternatives 8B, 8C ^{1/}

1/ Additional alternatives would cross the Kuna MFP Management Area; however, these alternatives are addressed under the SRBOP RMP, which replaces the Kuna MFP in these areas.

PREFERRED ROUTE ALTERNATIVES AND BLM LAND USE PLAN AMENDMENTS

PREFERRED ROUTE ALTERNATIVES

Because of the broad range of positions on preferred route alternatives among cooperating agencies on some segments of the Project, the BLM is postponing identification of its preferred route alternative until the 90-day public comment period on this Draft EIS has closed and the BLM has completed its analysis of the comments received.

Some cooperating agencies have identified route preferences. They are:

- State of Wyoming:
 - Segment 1W: Construct adjacent to the existing 230-kV line (a combination of the Proposed Route and Alternative 1W-A)
 - Segment 1E: Alternative 1E-C
 - Segment 2: The Proposed Route, except in the vicinity of Hanna, Wyoming, where the State prefers Alternative 2C
 - Segment 3: The Proposed Route
 - Segment 4: Alternative 4A
- Idaho Army National Guard
 - Alternative 8D and place the proposed route outside of the Bravo Sector of the Orchard Training Area
- Cassia County, Idaho
 - Alternative 7I
 - Although not located in Cassia County, the County supports Alternative 7J

- Owyhee County, Idaho
 - First preference: Alternative 9D (the County expresses a strong preference for this alternative)
 - Second preference: Alternative 9E
- Power County, Idaho
 - Alternatives 5C and 5E
 - Although not located in Power County, the County supports Alternative 7J
- Twin Falls County, Idaho
 - Alternatives 7I and 7J

PREFERRED BLM LAND USE PLAN AMENDMENTS

BLM land use planning regulations require the BLM to identify preferred plan amendments in the Draft EIS that are needed to bring the project into conformance with land use plan management objectives. Preferred plan amendments are different from preferred routes. They are identified in the Draft EIS because proposed land use plan decisions (i.e., plan amendments) are **protested** during the Final EIS phase of the NEPA process as opposed to implementation decisions (i.e., approving a ROW grant), which are **appealed** at the Record of Decision phase of the NEPA process.

For the Gateway West Project, the BLM identified each potential situation of nonconformance by proposed and alternative routes with the respective land use plan. A plan amendment that would allow the proposed or alternative route to conform with the land use plan is presented and it is the BLM's preferred plan amendment for that situation. Plan amendments will only be implemented for those Project routes that are finally authorized. The needed plan amendments will be apparent in the Final EIS, when the BLM identified its preferred route alternative.

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
AC	alternating current
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ACSR	aluminum conductor steel reinforced
Agencies	BLM and the cooperating agencies
AGL	above ground level
AIRFA	American Indian Religious Freedom Act
AIZ	Aquatic Influence Zone
AM	amplitude modulation
ANSI	American National Standards Institute
APLIC	Avian Power Line Interaction Committee
AOI	Area of Inconsistency
ARPA	Archaeological Resources Protection Act
ATV	all-terrain vehicle
AUM	Animal Unit Month
AWEA	American Wind Energy Association
BA	Biological Assessment
BE	Biological Evaluation
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	best management practice
BO	Biological Opinion
BP	Before Present
BPA	Bonneville Power Administration
BWM	Bureau of Waste Management (NDEP)
CAFE	Corona and Field Effects
CAFO	concentrated animal feeding operation
CDC	Conservation Data Center
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CH ₄	methane

CIAA	Cumulative Impact Analysis Area
CMP	Comprehensive Management Plan
CO	carbon monoxide
CR	County Route
CRP	Conservation Reserve Program
CUP	conditional use permit
CWA	Clean Water Act
CWCS	Comprehensive Wildlife Conservation Strategies
dB	decibel
dB(A)	decibel, A-weighted
DC	direct current
DDC	density disturbance calculation
DICIAA	Direct Impact Change Impact Analysis Area
DOE	U.S. Department of Energy
DPS	Distinct Population Segment
Eagle Act	Bald and Golden Eagle Protection Act
EA	Environmental Assessment
EHS	extra high strength
EIS	environmental impact statement
ELF	extremely low frequency
EMF	electric and magnetic fields
EO	Executive Order
EPC	Engineering, Procurement, and Construction
EPCRA	Emergency Planning and Community Right-to-Know Act
EPM	environmental protection measure
EPRI	Electrical Power Research Institute
ERMA	Extensive Recreation Management Area
ERS	Economic Research Service
ESA	Endangered Species Act
ESRP	Eastern Snake River Plain
ESRI	Environmental Systems Research Institute
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act
FM	frequency modulation

FO	Field Office
Forest Plan	Land and Resource Management Plan
Forest Service	U.S. Department of Agriculture Forest Service
FSA	USDA Farm Service Agency
FSH	Forest Service Handbook
FSM	Forest Service Manual
FTE	full-time equivalent
G	Gauss
GAP	Gap Analysis Program
Gateway West	Gateway West Transmission Line Project
GHG	greenhouse gas
GIL	Gas Insulated Transmission Line
GIS	Geographic Information System
GMP	General Management Plan
GPS	Global Positioning System
GW	gigawatt
GYRA	Greater Yellowstone Recovery Area
HEA	Habitat Equivalency Analysis
HMA	Herd Management Area
HPFF	High Pressure Fluid Filled
HSWA	Hazardous and Solid Waste Act
HUC	Hydrologic Unit Code
Hz	hertz
I	Interstate
IBA	Important Bird Area
IBC	International Building Code
IDAPA	Idaho Administrative Procedures Act
IDANG	Idaho Army National Guard
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
IDT	Interdisciplinary Team
IDWR	Idaho Department of Water Resources
IEEE	Institute of Electrical and Electronic Engineers
IMPLAN	Impact Analysis for Planning
IOP	Interagency Operating Procedure
IPUC	Idaho Public Utilities Commission

IR	Instrument Route
IRA	Inventoried Roadless Area
IRMP	Integrated Resource Management Plan
IRP	integrated resource plan
ISC	(Wyoming) Industrial Siting Council
ISDA	Idaho State Department of Agriculture
IV	Impact Value
kcmil	one thousand circular mils
kHz	kilohertz
KOP	Key Observation Point
kV	kilovolt
kV/m	kilovolt per meter
LAU	Lynx Analysis Unit
L _{dn}	day-night sound level
L _{eq}	equivalent sound level
LWD	large woody debris
μV/m	microvolt per meter
mA	milliampere
MA	Management Area
MBF	thousand board feet
MBTA	Migratory Bird Treaty Act
MFP	Management Framework Plan
mG	milligauss
MHz	megahertz
MIS	Management Indicator Species
mm	millimeter
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MP	milepost
mph	mile per hour
MTR	Military Training Route
MUA	multiple use areas
MW	megawatt
MWh	megawatt-hours
NAGPRA	Native American Graves Protection and Repatriation Act
NAIP	National Agriculture Imagery Program
NAICS	North American Industrial Classification System

NDEP	Nevada Department of Conservation and Energy Resources, Division of Environmental Protection
NEPA	National Environmental Policy Act
NERC	North American Electrical Reliability Corporation
NESC	National Electrical Safety Code
NESHAP	National Emission Standards for Hazardous Air Pollutants
NF	National Forest
NFMA	National Forest Management Act
NFS	National Forest System
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NIEHS	National Institute of Environmental Health Sciences
NLCS	National Landscape Conservation System
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NPUC	Nevada Public Utilities Commission
NRHP	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NRS	Nevada Revised Statutes
NSA	noise sensitive area
NSO	no surface occupancy
NSR	New Source Review
NTTG	Northern Tier Transmission Group
NVCS	National Vegetation Classification System
NWI	National Wetland Inventory
NWR	National Wildlife Refuge
OATT	Open Access Transmission Tariff
OCTA	Oregon-California Trails Association
OHGW	overhead ground wire
OHV	off-highway vehicle
OPGW	fiber optic shield ground wire
OPS	Office of Pipeline Safety
ORV	outstandingly remarkable value
OSHA	Occupational Safety and Health Administration
OSLI	Office of State Lands and Investment
OVI	Overall Visual Impact

PA	Programmatic Agreement
PCA	Primary Conservation Area
PEIS	programmatic environmental impact statement
PFA	post-fledging area
PIAA	Project Impact Analysis Area
P.L.	Public Law
PM ₁₀	particulate matter greater than 10 microns
POD	Plan of Development
ppb	part per billion
PPE	personal protective equipment
Project	Gateway West Transmission Line Project
Proponents	Rocky Mountain Power and Idaho Power
PRRIP	Platte River Recovery Implementation Program
PSC	Public Service Commission
PSD	Prevention of Significant Deterioration
R2	Region 2 (Forest Service)
R4	Region 4 (Forest Service)
RCRA	Resource Conservation and Recovery Act of 1976
RCZ	Riparian Conservation Zone
ReGAP	Regional Gap Analysis Program
Reserve	City of Rocks National Reserve
RM	river mile
RMP	Resource Management Plan
RMO	Road Management Objective
RN	Roaded Natural
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
RV	recreational vehicle
SCFF	Self-Contained Fluid Filled
SCI	Survey Coverage Index
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SIO	Scenic Integrity Objective
SMA	Special Management Area
SMS	Scenery Management System
SO _x	sulfur oxides

SOPA	Schedule of Proposed Actions
SPCC	Spill Prevention, Countermeasures, and Control
SPM	Semi-primitive Motorized
SR	State Route
SRBOP	Morley Nelson Snake River Birds of Prey National Conservation Area
SRMA	Special Recreation Management Area
SSA	sole source aquifer
STATSGO	State Soil Geographic
SWIP	Southwest Intertie Project
SWPPP	Stormwater Pollution Prevention Plan
T/A/Y	tons per acre per year
TCP	traditional cultural property
TEH	Transmission Export Hub
TES	threatened, endangered, and sensitive
THPO	Tribal Historic Preservation Officer
TIRMP	Tribal Integrated Resource Management Plan
TMDL	total maximum daily load
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCR	visual contrast rating
VMS	Visual Management System
VOC	volatile organic compound
VQO	Visual Quality Objective
VR	Visual Route
VRM	Visual Resource Management
WDEQ	Wyoming Department of Environmental Quality
WECC	Western Electricity Coordinating Council
WGFD	Wyoming Game and Fish Department
WIA	Wyoming Infrastructure Authority
WIZ	Water Influence Zone

WSA	wilderness study area
WSR	Wild and Scenic River
WWE	West-wide Energy
WYNDD	Wyoming Natural Diversity Database
XLPE	Cross-Linked Polyethylene