3.14 SUMMARY OF ENVIRONMENTAL IMPACTS

This section summarizes the analyses in Sections 3.2 through 3.13. The coverage of the alternatives is general and intended to provide a comparison between the no action and action alternatives as well as between the zone route alternatives within particular zones. A discussion of the agency-preferred alternative is included in the summary tables that follow along with a discussion of a crossover link that is specific to the agency-preferred alternative.

As required by 40 CFR 1502.16, a preliminary determination of the proposed project's significant impacts is also presented in this section. This preliminary determination is based on an assessment of the potential for the proposed project to generate changes in the natural or social environments and the magnitude of those changes in relation to the existing conditions. The final determination of significance is left to the authorized officers for each respective ROD for the federal agencies or the MDEQ Certificate of Compliance under the MFSA.

3.14.1 No Action Alternative

The no action alternative would result in no substantial adverse impacts to environmental resources. Selection of this alternative would indicate that the federal agencies have determined that the proposed project is not in the public interest and should not be provided with a ROW on federal lands. It would also indicate that MDEQ has determined that the proposed action did not meet one of the required criteria under MFSA that allows justification (ARM §17.20.1606).

Selection of the no action alternative would mean that the proposed project would not be constructed. This action would not meet the applicant's purpose and need for the proposed project. NorthWestern has provided numerous reasons for the construction and operation of the project that range from transfer of relatively low-cost energy from Montana to Idaho (and eventually to other markets in the West), reduction of congestion on existing transmission pathways, and increased stability of the western energy grid (Chapter 2).

Implementation of the no action alternative would have no significant impacts on the natural and social environments. Natural resources would continue to respond to annual changes in weather, land management decisions, and be managed by the agencies responsible for them. Wetlands, water resources, and vegetation would respond to normal climatic cycles of drought, flood, and infrequent events such as wildfire. Wildlife habitat would not be fragmented by the proposed project, but could be affected by other linear projects. Resource areas such as human health and safety would not be affected by the perceived health risks associated with increased exposure to EMF; although people would continue to be exposed from existing sources. The property tax revenues and jobs created by the proposed project would not occur. Visual resources throughout the project area would change gradually over time in response to continued development, timber harvest, wildfire, and climate change.

3.14.2 Proposed Project

The proposed project is defined as the proposed action and the action alternatives. The potential impacts of the proposed project on environmental resources have been extensively discussed in the preceding sections of this chapter. Selection of an action alternative by the federal agencies (BLM and USFS) would indicate that the proposed project is in the public interest and would provide the required permits to cross federally managed public lands. The decision would also require that both the USFS and BLM amend existing land management plans to allow the proposed project to proceed (Chapter 5). It would also indicate that MDEQ has determined that the proposed action met one of the required criteria under MFSA and is therefore justified (ARM §17.20.1606).

The following is a highly distilled summary of the proposed project's potential impacts on natural and social resources (Tables 3.14-1 to 3.14-6). As with the analyses presented in previous sections in this chapter, this discussion is organized by zone from north to south. The environmental issues discussed are the key issues for that particular topical area. Not all potential impacts are included in these tables. Because this information is a summarized version of the results, the reader is encouraged to review the specific resource sections for additional details and information. Some totals in the tables may not appear to add up correctly because they have been rounded off for presentation.

The summary tables present all the alternatives within each zone including the proposed action and the agency-preferred alternative. The proposed action is indicated for each zone. The proposed action is comprised of Alternatives 1B, 2B, 3B, 4A, 5A, and 6A. The proposed action would be about 449 miles long from Townsend, Montana, to Midpoint, Idaho.

The agency-preferred alternative is also identified and presented in relation to the other zone alternatives. The agency-preferred alternative is generally comprised of Alternatives 1D, 2E, 3C, 4A, 5D, and 6A. Modifications to the route in Zone 1 included implementation of the Lower Boulder LRO. In Zone 3, the route modifications include use of the crossover link (Link 34) to connect the south end of Alternative 2E with the north end of Alternative 3C. Alternative 3C was further modified by using Link 15-2c to avoid a long, complicated jog west through the South Pioneer Mountains. Three LROs were selected to replace the mainline links in this alternative: Clark Canyon East LRO, Lima LRO, and Diamond Butte LRO. In Zones 4, 5, and 6, the agency-preferred alternative is identical to the listed alternative. Details of the agency-preferred alternative are presented in Chapter 2. From Townsend, Montana to Midpoint Idaho the agency-preferred alternative is approximately 417 miles long, the overall shortest route between these two points. Because effects to resources are directly proportional to the length of the proposed project, the agency-preferred alternative results in lesser amounts of landscape modification and therefore fewer adverse impacts on the environment than the other alternatives that were considered.

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Air and Atmospheric Values					
Construction-Generated Particulate and Gaseous Emissions	Highest	Second Highest	Third Lowest	Second Lowest	Lowest
Closest Distance to Butte PM_{10} Non-attainment Area	8 Miles	Crosses	Crosses	11 Miles	11 Miles
GHG Emissions from Construction and Slash Burning	Highest	Second Highest	Second Lowest	Third Highest	Lowest
Ozone Generation from Corona Activity	All alternatives generate similar very low levels of ozone.				
Closest Distance to Anaconda Pintler Wilderness (Class I Area)	16 Miles			43 Miles	43 Miles

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Biological Resources					
Elk Winter Range (Miles Crossed)	57.9	32.5	34.7	6.2	7.3
Mule Deer Winter Range (Miles Crossed)	51.1	44.2	20.1	23.7	25.8
Moose Winter Range (Miles Crossed)	37.7	12.6	7.6	0	0
Pronghorn Winter Range (Miles Crossed)	0	6	11.3	5	5
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	0	5,904	6,210	5,964	5,904
Greater Sage-Grouse Core Habitat Within 3 Miles (Acres)	0	0	0	0	0
Greater Sage-Grouse Leks Within 3 Miles	0	0	0	0	0
Waterfowl Use Areas (Miles Crossed)	5	10.3	6.5	10.3	5.7
Wildlife Movement Corridors (Miles Crossed)	64.5	70.9	49.9	48.4	45.3
Effects on Forest-Dependent Species of Concern	Moderate	Low	Low	Low	Low
Effects on Grassland-Dependent Species of Concern	Low	Moderate	Moderate	Moderate	Moderate
Effects on Riparian/Wetland-Dependent Species of Concern	Low	Low	Low	Low	Low
Effects on Shrubland-Dependent Species of Concern	Low	Low	Low	Low	Low
Effects on Sagebrush-Dependent Species of Concern	Low	Low	Low	Low	Low

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Fish-bearing Streams Crossed by New Roads or Overland Routes	2	2	2	2	2
Sensitive Fish Species in Crossed Streams	None	None	None	None	None
Cultural Resources					
Number of Previously Identified Sites Within a 0.5-Mile Buffer	138	89	80	50	50
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5- Mile Buffer)	15,219	20,736	17,632	13,133	13,376
Miles of Transmission Line from which Critical Cultural Resources are Visible	41	48	44	29	29
Miles of Transmission Line Visible from Critical Cultural Resources	0.5	3.3	12.1	0	0
Number of Critical Visual Impact Points Within 4-Mile Buffer	18	10	15	0	0
Human Health and Safety					
Electric Field at Edge of ROW (kV/m)	0.137–1.554	0.137–1.554	0.137–1.581	1.011–1.554	1.011–1.554
Magnetic Field at Edge of ROW Under Typical Loading (mG)	7.5–46.4	6.5–46.4	6.5–46.2	11.1–33.9	11.1–33.9
Audible Noise at Edge of ROW–L50 Rain (dBA)	47.5–55.9	47.5–57.9	47.5–57.9	47.5–53.4	47.5–53.4
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	52.0–69.5	52.0–69.5	52.0–69.5	52.0–63.4	52–63.4

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
TV Interference at Edge of ROW–Rain (dBuV/m)	16.9–30.7	16.2–30.7	16.9–32	16.9–25.6	16.9–25.6
Land Use and Recreation					
Conservation Easements (Miles Crossed)	0	1.7	1.7	0	0
Land and Water Conservation Fund Sites Within 1,000 Feet	None	None	None	None	None
Private Land Crossed (Miles)	37	64	76	42	39
Public Land Crossed (Miles)	44	26	19	12	16
Residences Within 300 Feet	2	7	18	0	0
Residences Between 300–1,000 Feet	9	90	126	14	14
Irrigated Cropland (Miles Crossed)	2	1	2	1	1
Grazed Land (Miles Crossed)	69	88	88	52	47
Dryland Farmed (Miles Crossed)	1	1	4	1	1
Acres of Agricultural Land Affected					
Temporary	598	765	797	447	417
Permanent	318	356	332	243	217
Special Management Areas					
National Historic Trails Crossed	Lewis and Clark National Historic Trail				
National Scenic Trails Crossed	Continental Divide National Scenic Trail			None	
Areas of Critical Environmental Concern (Miles Crossed)	11	2	0	2	2
Special Recreation Management Areas (Miles Crossed)	< 1				2

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Wildlife Management Areas (Miles Crossed)	0	1	<1	0	0
Active Mining Claims Crossed	160	41	17	41	40
New Access Roads on Private Land (Miles)	24	33	29	26	21
New Access Roads on Public Land (Miles)	34	14	9	10	12
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	1	6	8	1	1
Socioeconomics					
Employment	205 jobs in Montana (across all zones) during construction, most for out-of-state workers. Up to 140 jobs in Montana businesses supporting the construction activities. Number of permanent jobs created would be insignificant.				
Income	No distinguishable long-term effect expected.				
Population	No distinguishable long-term effect expected.				
Housing	Potential seasonal short-term supply constraints within commuting distance.				
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.				
Expected Annual Property Taxes (Millions of Dollars) (Note: Taxes expected to decrease slightly over time)	Broadwater: $9 Deer Lodge: $13 Jefferson: $3 Silver Bow: $0.537 Total: $26	Broadwater: $9 Deer Lodge: $12 Jefferson: $3 Silver Bow: $3 Total: $26	Broadwater: $9 Deer Lodge: $12 Jefferson: $3 Silver Bow: $3 Total: $26	Broadwater: $9 Jefferson: $2 Total: $12	Broadwater: $9 Jefferson: $2 Total: $12
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.				
Annual Value of Grazing Land Taken out of Production	$1,049	$1,418	$1,522	$1,077	$1,025
Annual Value of Lost Crop Production	$2–$303	$1–$208	$3–$533	$1–$203	$1–$205
Annual Increase in Agricultural Operating Costs	$238–$2,060	$235–$2,028	$820–$7,087	$219–$1,891	$162–$1,398

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views if a study of property values in a high end residential area in Montreal is relevant. Potential increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.				
Annual Roadway Viewing (Hours Affected)	17,578	1,158,116	2,473,833	681,105	762,028
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.				
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.				
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and inter-community discord and for people who prefer natural landscapes. Potential increase in well-being for people who experience benefits from employment and income associated with the proposed project.				
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, primarily in out-of-state markets. May allow new generation in Montana that otherwise would not have been built. May affect Montana ratepayers indirectly either positively or negatively.				
Soils and Geology					
Miles of Active Faults (Within 2 Miles)	0	9.3	7.5	0.7	0.7
Number Active Fault Crossings	0	2	2	0	0
Potential and Mapped Mass Movement Areas (Miles)	0.1	0.1	0	<0.1	0.1
Liquefaction Potential (Miles)	0.3	4.1	4.6	2.7	2.6
Permanent Soil Impacts: Structures (Acres)	172	189	199	114	116
Permanent Soil Impacts: New Roads (Acres)	163	125	112	108	95

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Moderate and High Residual Soil Impacts (Acres)	113	32	38	13	8
Paleontology					
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	20	57	57	45	41
Vegetation					
Permanent Direct Impact (Acres)	1,139	699	426	353	278
Short-/Long-Term Direct Impact (Acres) *	538	840	1,008	533	572
Permanent Direct Impacts to Grazing Allotments (Acres)	262	135	49	117	118
Total Direct Impact to Riparian/Wetland Areas (Acres)	74	50	30	24	24
Relative Risk to Special Status Plant Species	Low	Moderate	High	Moderate	Moderate
Visual Resources					
High Visual Impact (Miles)	29	26	27	11	6
Residences Within 0.5 Miles	111	320	426	80	79
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	13.9/0	7/0	6.5/0.1	4.9/0	4.6/0.1
Route on USFS Land and Miles Inconsistent within SIO/VQO Objectives (Miles/Miles)	24.4/11	6.5/6.5	4.8/4.8	NA	NA
Sensitive Viewing Areas Within 1 Mile	11	8	7	6	6
Water and Wetland Resources					
Miles Stream Within 0.25-Mile of New Travel Network	141	147	132	112	103

Table 3.14-1. Environmental Issues/Impacts, Zone 1: Townsend to Mill Creek

Environmental Issues/Impacts	1A	1B (Proposed Action)	1C	1D	Preferred Alternative
Length (Miles)	**82**	**90**	**95**	**54**	**55**
Stream Crossings Required by New Travel Network	60	120	79	92	82
Perennial Stream Crossings by New Roads (Excludes Overland Routes)	4	4	2	2	2
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	38.6	25.8	7.5	14.7	14.9
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	35.7	23.9	22.9	9.6	10.6
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	30.4	21.0	1.9	13.2	13.4
Environmental Justice					
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	5	15	16	0	0
	Less disposable income to address project-related concerns.			None	
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	0	0	0	0	0

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Air and Atmospheric Values						
Construction-Generated Particulate and Gaseous Emissions	Lowest	Third lowest	Highest	Second highest	Second lowest	Second lowest
Closest Distance to Butte PM_{10} Non-attainment Area	5 Miles	5 Miles	Crosses	8 Miles	11 Miles	11 Miles
GHG Emissions from Construction and Slash Burning	Third highest	Second lowest	Highest	Second highest	Lowest	Lowest
Ozone Generation from Corona Activity	All alternatives generate similar very low levels of ozone.					
Closest Distance to Anaconda Pintler Wilderness (Class I Area)	16 Miles				43 Miles	43 Miles
Biological Resources						
Elk Winter Range (Miles Crossed)	46.3	34.7	47.3	56.7	21	21
Mule Deer Winter Range (Miles Crossed)	45.1	39.8	35.6	49.4	15.1	15.1
Bighorn Sheep Winter Range (Miles Crossed)	11.9	11.8	3.8	12.9	3.8	3.8
Moose Winter Range (Miles Crossed)	3.2	3.2	12.6	7	0	0
Pronghorn Winter Range (Miles Crossed)	31.2	30.9	46.2	32.3	45.2	45.2
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	26,936	40,047	28,374	70,996	28,375	28,375
Greater Sage-Grouse Core Habitat Within 3 Miles (Acres)	0	0	0	368	0	0

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Greater Sage-Grouse Leks Within 3 Miles	1	2	0	3	0	0
Waterfowl Use Areas (Miles Crossed)	0.5	2.3	14.3	0.2	14.3	14.3
Wildlife Movement Corridors (Miles Crossed)	69.7	84.7	52.7	72.2	30.1	30.1
Effects on Forest-Dependent Species of Concern	Low	Low	Low	Low	Low	Low
Effects on Grassland-Dependent Species of Concern	Low	Low	Moderate	Low	Moderate	Moderate
Effects on Riparian/Wetland-Dependent Species of Concern	Low	Low	Low	Low	Low	Low
Effects on Shrubland-Dependent Species of Concern	Low	Low	Low	Low	Low	Low
Effects on Sagebrush-Dependent Species of Concern	Moderate	Moderate	Low	Moderate	Low	Low
Fish-bearing Streams Crossed by New Roads or Overland Routes	0	0	3	3	3	3
Sensitive Fish Species in Crossed Streams	None	None	None	None	None	None
Cultural Resources						
Number of Previously Identified Sites Within a 0.5-Mile Buffer	46	45	68	60	28	28

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5-Mile Buffer)	16,416	16,781	23,616	11,693	15,898	15,898
Miles of Transmission Line from which Critical Cultural Resources are Visible	32	31	40	48	22	22
Miles of Transmission Line Visible from Critical Cultural Resources	4.3	3.3	4.1	3	2.2	2.2
Number of Critical Visual Impact Points Within 4-Mile Buffer	12	10	12	17	3	3
Human Health and Safety						
Electric Field at Edge of ROW (kV/m)	0.561–1.555	0.561–1.555	0.137–1.554	0.137–1.554	1.554	1.554
Magnetic Field at Edge of ROW Under Typical Loading (mG)	4.4–46.4	4.4–46.4	6.5–46.4	7.5–46.4	33.6	33.6
Audible Noise at Edge of ROW–L50 Rain (dBA)	47–57.9	46.4–57.9	47.5–57.9	47.5–57.9	48.7–52.6	48.7–52.6
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	46.2–65.8	46.2–65.8	52–69.5	52–69.5	57.5–61.4	57.5–61.4
TV Interference at Edge of ROW –Rain (dBuV/m)	13.9–27.2	13.9–27.2	16.2–30.7	16.2–30.7	20.3–24.2	20.3–24.2
Land Use and Recreation						
Conservation Easements (Miles Crossed)	1.6	1.6	1.6	0	0	0
Land and Water Conservation Fund Sites Within 1,000 Feet	2	2	3	0	2	2

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Private Land Crossed (Miles)	36	35	36	11	14	14
Public Land Crossed (Miles)	22	21	43	52	40	40
Residences Within 300 Feet	1	0	7	0	0	0
Residences Between 300–1,000 Feet	20	23	77	5	1	1
Irrigated Land (Miles Crossed)	2	2	<1	<1	<1	<1
Grazed Land (Miles Crossed)	56	55	76	63	40	40
Dryland Farmed (Miles Crossed)	<1	<1	1	<1	1	1
Acres of Agricultural Land Impacted						
Temporary	479	471	638	534	335	335
Permanent	169	214	354	333	241	241
Special Management Areas						
Wilderness Study Areas Within 1,000 Feet	1	1	0	1	0	0
National Scenic Trails Crossed	Continental Divide National Scenic Trail				None	
Areas of Critical Environmental Concern (Miles Crossed)	None					
Special Recreation Management Areas(Miles Crossed)	2	2	1	2	3	3
Wildlife Management Areas (Miles Crossed)	1	1	1	6	0	0
Active Mining Claims Crossed	2	0	30	3	30	30
New Access Roads on Private Land (Miles)	7	12	22	4	16	16

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
New Access Roads on Public Land (Miles)	6	15	52	53	47	47
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	1	1	5	1	0	0
Socioeconomics						
Employment	205 jobs in Montana (across all zones) during construction, most for out-of-state workers. Up to 140 jobs in Montana businesses supporting the construction activities. Number of permanent jobs created would be insignificant.					
Income	No distinguishable long-term effect expected.					
Population	No distinguishable long-term effect expected.					
Housing	Potential seasonal short-term supply constraints within commuting distance.					
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.					
Expected Annual Property Taxes (Millions of Dollars) (Note: Tax values expected to decrease slightly over time)	Beaverhead: $2 Deer Lodge: $0.556 Silver Bow: $3 Total: $6	Beaverhead: $2 Deer Lodge: $0.556 Silver Bow: $3 Total: $6	Beaverhead: $2 Deer Lodge: $0.556 Jefferson: $1 Madison: $2 Silver Bow: $3 Total: $8	Beaverhead: $2 Deer Lodge: $1 Silver Bow: $3 Total: $6	Beaverhead: $1 Jefferson: $0.884 Madison: $2 Silver Bow: $0.326 Total: $4	Beaverhead: $1 Jefferson: $0.834 Madison: $2 Silver Bow: $0.326 Total: $4
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.					
Annual Value of Grazing Land Taken out of Production	$756	$957	$1,911	$1,254	$1.509	$1,509
Annual Value of Lost Crop Production	$2–$263	$2–$294	$0–$21	$0–$62	$0–$19	$0–$21
Annual Increase in Agricultural Operating Costs	$219–$1,893	$243–$2,104	$36–$308	$60–$516	$28–$255	$34–$291
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views if a study of property values in a high end residential area in Montreal is relevant. Potential increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.					

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Annual Roadway Viewing (Hours Affected)	371,301	553,509	639,437	272,348	162,426	162,426
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.					
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.					
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and intercommunity discord and for some people who prefer high-quality views and natural landscapes. Potential increase in well-being for people who experience benefits from employment, income, and improved reliability or affordability of electricity associated with the proposed project.					
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, which could yield net benefits to the regional and national economy. May allow new generation in Montana that otherwise would not have been built. May affect Montana ratepayers indirectly either positively or negatively.					
Soils and Geology						
Miles of Active Faults (Within 2 Miles)	9	9	11.9	7.3	3.3	3.3
Number Active Fault Crossings	0	0	2	2	0	0
Potential and Mapped Mass Movement Areas (Miles)	0.7	0.5	0.2	7.9	0.2	0.2
Liquefaction Potential (Miles)	3.5	7.6	6	1.5	4.5	4.5
Permanent Soil Impacts: Structures (Acres)	121	120	188	135	112	112
Permanent Soil Impacts: New Roads (Acres)	39	78	215	167	185	185
Moderate and High Residual Soil Impacts (Acres)	11	13	23	28	4	4

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Paleontology						
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	46	42	35	19	24	24
Vegetation						
Permanent Direct Impact (Acres)	293	331	723	576	377	377
Short-/Long-Term Direct Impact (Acres) *	564	573	828	558	520	520
Permanent Direct Impacts to Grazing Allotments (Acres)	41	38	173	141	164	164
Total Direct Impact to Riparian/Wetland Areas (Acres)	44	50	42	61	17	17
Relative Risk to Special Status Plant Species	Moderate	Moderate	Moderate	Low	Moderate/ Low	Moderate/ Low
Visual Resources						
High Visual Impact (Miles)	12	16	22	20	7	7
Residences Within 0.5 Miles	85	94	251	114	11	11
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	30/2.3	7.6/3.6	23.4/0.5	24.5/0.3	21.3/0.5	21.3/0.5
Route on USFS Land and Miles Inconsistent within SIO/VQO Objectives (Miles/Miles)	1.7/1.7	1.7/1.7	6.5/6.5	9.8/9.8	NA	NA
Sensitive Viewing Areas Within 1 Mile	6	7	5	10	7	7

Table 3.14-2. Environmental Issues/Impacts, Zone 2: Mill Creek to Glen

Environmental Issues/Impacts	2A	2B (Proposed Action)	2C	2D	2E	Preferred Alternative
Length (Miles)	**57**	**57**	**90**	**63**	**54**	**54**
Water and Wetland Resources						
Miles Stream Within 0.25-Mile of New Travel Network	66	115	144	115	102	102
Stream Crossings Required by New Travel Network	52	73	89	91	64	64
Perennial Stream Crossings by New Roads (Excludes Overland Routes)	0	0	6	10	4	4
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	22.7	27.4	20.5	33.7	9.3	9.3
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	21.6	23.6	21.7	27.4	7.4	7.4
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	18.5	23	14.5	26.9	6.8	6.8
Environmental Justice						
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	5	5	15	5	0	0
	Less disposable income to address project-related concerns.				None	
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	0	0	0	0	0	0

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Air and Atmospheric Values				
Construction Generated-Particulate and Gaseous Emissions	Lowest	Second lowest	Highest	Second highest
GHG Emissions from Construction and Slash Burning	Second lowest	Highest	Second highest	Lowest
Ozone Generation from Corona Activity	All alternatives generate similar very low levels of ozone.			
Closest Distance to Anaconda Pintler Wilderness (Class I Area)	48 Miles	49 Miles	48 Miles	48 Miles
Closest Distance to Red Rock Lakes Wilderness (Class I Area)	24 Miles			
Biological Resources				
Elk Winter Range (Miles Crossed)	10.5	4.7	7.9	8.8
Mule Deer Winter Range (Miles Crossed)	35.9	30.7	36.4	33
Moose Winter Range (Miles Crossed)	5	5	5	6.2
Pronghorn Winter Range (Miles Crossed)	39.1	43.6	36.7	39.3
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	238,799	209,975	261,347	239,429
Greater Sage-Grouse Core Habitat Within 3 Miles (Acres)	141,160	82,690	126,629	118,989
Greater Sage-Grouse Leks Within 3 Miles	8	2	7	5
Waterfowl Use Areas (Miles Crossed)	26.3	26.2	26.2	17.5
Wildlife Movement Corridors (Miles Crossed)	19.8	26	33.5	36.6
Effects on Forest-Dependent Species of Concern	Low	Low	Low	Low
Effects on Grassland-Dependent Species of Concern	Moderate	Moderate	Moderate	Moderate
Effects on Riparian/Wetland-Dependent Species of Concern	Low	Low	Low	Low
Effects on Shrubland-Dependent Species of Concern	Low	Low	Low	Low
Effects on Sagebrush-Dependent Species of Concern	High	High	High	High
Fish-bearing Streams Crossed by New Roads or Overland Routes	0	1	2	2

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Sensitive Fish Species in Crossed Streams	None	Yellowstone Cutthroat, Maurer Cr	Yellowstone Cutthroat, Maurer Cr	Yellowstone Cutthroat, Maurer Cr
Cultural Resources				
Number of Previously Identified Sites Within a 0.5-Mile Buffer	42	45	45	43
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5-Mile Buffer)	10,138	10,291	7,834	8,512
Miles of Transmission Line from which Critical Cultural Resources are Visible	21	5	21	18
Miles of Transmission Line Visible from Critical Cultural Resources	3.6	2.8	3	3
Number of Critical Visual Impact Points Within 4-Mile Buffer	2	1	2	3
Human Health and Safety				
Electric Field at Edge of ROW (kV/m)	1.011–1.553	1.227–1.55	1.011–1.553	1.011–1.553
Magnetic Field at Edge of ROW–Under Typical Loading (mG)	12.5–33.8	10–33.8	12.5–33.8	12.5–33.8
Audible Noise at Edge of ROW–L50 Rain (dBA)	47.8–53.4	46.4–52.6	47.8–53.4	47.8–53.4
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	52.7–63.4	52.7–61.4	52.7–63.4	52.7–63.4
TV Interference at Edge of ROW–Rain (dBuV/m)	17.3–25.6	14.5–24.2	17.3–25.6	17.3–25.6
Land Use and Recreation				
Conservation Easements (Miles Crossed)	0	1.7	1.7	0
Land and Water Conservation Fund Sites Within 1,000 Feet	0	0	0	0
Private Land Crossed (Miles)	25	28	18	9
Public Land Crossed (Miles)	46	40	53	61
Residences Within 300 Feet	1	0	0	1
Residences between 300–1,000 Feet	1	7	5	0
Irrigated Cropland (Miles Crossed)	2	1	<1	0
Grazed Cropland (Miles Crossed)	70	66	71	70
Dryland Farmed (Miles Crossed)	<1	0	0	0

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Acres of Agricultural Land Impacted				
Temporary	606	566	598	592
Permanent	286	394	431	408
Special Management Areas				
National Historic Trails Crossed	Lewis and Clark National Historic Trail			
Areas of Critical Environmental Concern (Miles Crossed)	None			
Special Recreation Management Areas (Miles Crossed)	13	3	9	11
Active Mining Claims Crossed	6	0	9	0
New Access Roads on Private Land (Miles)	19	29	24	10
New Access Roads on Public Land (Miles)	20	43	57	65
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	1	1	1	1
Socioeconomics				
Employment	205 jobs in Montana (across all zones) during construction, most for out-of-state workers. Up to 140 jobs in Montana businesses supporting the construction activities. Number of permanent jobs created would be insignificant.			
Income	No distinguishable long-term effect expected.			
Population	No distinguishable long-term effect expected.			
Housing	Potential seasonal short-term supply constraints within commuting distance.			
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.			
Expected Annual Property Taxes (Millions of Dollars) (Note: Tax values expected to decrease slightly over time)	Beaverhead: $6.1	Beaverhead: $5.6	Beaverhead: $6	Beaverhead: $6
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.			
Annual Value of Grazing Land Taken out of Production	$1,369	$1,860	$2,063	$2,005
Annual Value of Lost Crop Production	$2–$279	$1–$218	$0–$81	$1–$105
Annual Increase in Agricultural Operating Costs	$232–$2,002	$171–$1,481	$63–$549	$138–$1,189

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views if a study of property values in a high end residential area in Montreal is relevant. Potential slight increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.			
Annual Roadway Viewing (Hours Affected)	56,955	495,582	457,179	195,187
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.			
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.			
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and inter-community discord and potential decrease in well-being for people who prefer high-quality views and natural landscapes. Potential increase in well-being for people who experience benefits from employment, income, and improved reliability or affordability of electricity.			
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, which could yield net benefits to the regional and national economy. May allow new generation in Montana that otherwise would not have been built. May affect Montana ratepayers indirectly either positively or negatively.			
Soils and Geology				
Miles of Active Faults (Within 2 Miles)	20.4	11.9	11.2	10.2
Number Active Fault Crossings	3	0	0	1
Potential and Mapped Mass Movement Areas (Miles)	1.5	1.1	1.7	0.4
Liquefaction Potential (Miles)	6.1	4.6	2.0	2.3
Permanent Soil Impacts: Structures (Acres)	152	141	151	154
Permanent Soil Impacts: New Roads (Acres)	112	211	235	218
Moderate and High Residual Soil Impacts (Acres)	4	6	16	20
Paleontology				
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	47	46	42	43

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Vegetation				
Permanent Direct Impact (Acres)	278	367	403	382
Short-/Long-Term Direct Impact (Acres) *	759	707	747	740
Permanent Direct Impacts to Grazing Allotments (Acres)	158	197	253	253
Total Direct Impact to Riparian/Wetland Areas (Acres)	51	36	36	19
Relative Risk to Special Status Plant Species	Moderate/ High	Moderate/ High	Moderate/ High	Moderate/High
Visual Resources				
High Visual Impact (Miles)	8	10	9	6
Residences Within 0.5 Miles	21	24	16	9
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	31/0.3	17.1/0.8	33/0.9	42/0.9
Route on USFS Land and Miles Inconsistent within SIO/VQO Objectives (Miles/Miles)	NA	NA	NA	NA
Sensitive Viewing Areas Within 1 Mile	4	5	5	12
Water and Wetland Resources				
Miles Stream Within 0.25-Mile of New Travel Network	107	155	143	135
Stream Crossings Required by New Travel Network	58	138	130	120
Perennial Stream Crossings by New Roads (Excludes Overland Routes)	1	1	2	2
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	15.9	13.8	15.7	11.0
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	35.3	22.5	20.3	10.5
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	6.6	6.5	8.6	7.2

Table 3.14-3. Environmental Issues/Impacts, Zone 3: Glen to Stateline

Environmental Issues/Impacts	3A	3B (Proposed Action)	3C	Preferred Alternative
Length (Miles)	**72**	**67**	**72**	**70**
Environmental Justice				
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	2	4	2	2
	Less disposable income to address project-related concerns.			
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	0	0	0	0

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

Table 3.14-4. Environmental Issues/Impacts, Zone 4: Stateline to Sheep Station

Environmental Issues/Impacts	4A (Proposed Action)	Preferred Alternative
Length (Miles)	**20**	**20**
Air and Atmospheric Values		
Construction-Generated Particulate and Gaseous Emissions	Only alternative	
GHG Emissions from Construction and Slash Burning	Only alternative	
Ozone Generation from Corona Activity	Very low levels of ozone	
Closest Distance to Red Rock Lakes Wilderness (Class I Area)	19 Miles	
Biological Resources		
Pronghorn Winter Range (Miles Crossed)	19.9	19.9
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	18,078	18,078
Greater Sage-Grouse Leks Within 3 Miles	2	2
Wildlife Movement Corridors (Miles Crossed)	10.8	10.8
Effects on Forest-Dependent Species of Concern	Low	Low
Effects on Grassland-Dependent Species of Concern	Low	Low
Effects on Riparian/Wetland-Dependent Species of Concern	Low	Low
Effects on Shrubland Dependent-Species of Concern	Low	Low
Effects on Sagebrush-Dependent Species of Concern	Moderate	Moderate
Fish-bearing Streams Crossed by New Roads or Overland Routes	0	0
Sensitive Fish Species in Crossed Streams	None	None
Cultural Resources		
Number of Previously Identified Sites Within a 0.5-Mile Buffer	25	25
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5-Mile Buffer)	2,432	2,432
Miles of Transmission Line from which Critical Cultural Resources are Visible	0	0
Miles of Transmission Line Visible from Critical Cultural Resources	2.7	2.7
Number of Critical Visual Impact Points Within 4-Mile Buffer	5	5
Number of Previously Identified Sites Within a 0.5-Mile Buffer	25	25

Table 3.14-4. Environmental Issues/Impacts, Zone 4: Stateline to Sheep Station

Environmental Issues/Impacts	4A (Proposed Action)	Preferred Alternative
Length (Miles)	**20**	**20**
Human Health and Safety		
Electric Field at Edge of ROW (kV/m)	1.313–1.55	1.313–1.55
Magnetic Field at Edge of ROW Under Typical Loading (mG)	15.8–33.8	15.8–33.8
Audible Noise at Edge of ROW–L50 Rain (dBA)	47.8–50.6	47.8–50.6
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	52.7–59.3	52.7–59.3
TV Interference at Edge of ROW–Rain (dBuV/m)	17.3–22.2	17.3–22.2
Land Use and Recreation		
Private Land Crossed (Miles)	12	12
Public Land Crossed (Miles)	9	9
Residences Within 300 Feet	2	2
Residences between 300–1,000 Feet	2	2
Irrigated Cropland (Miles Crossed)	0	0
Non-Irrigated Cropland (Miles Crossed)	0	0
Prime Irrigated Farmland (Miles Crossed)	0	0
Acres of Agricultural Land Impacted		
Temporary	0	0
Permanent	0	0
Special Management Areas		
National Historic Trails Crossed	Nez Perce NHT	
National Scenic Trails Crossed	Continental Divide NST	
Scenic Byway Crossed	Lost Gold Trails Loop	
New Access Roads on Private Land (Miles)	4	4
New Access Roads on Public Land (Miles)	1	1
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	None	None
Socioeconomics		
Employment	98 jobs in Idaho (across all zones) during construction, most for out-of-state workers. Up to 68 jobs in Idaho businesses supporting the construction activities. Number of permanent jobs created would be insignificant.	
Income	No distinguishable long-term effect expected.	
Population	No distinguishable long-term effect expected.	
Housing	Potential seasonal short-term supply constraints within commuting distance.	
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.	
Expected Annual Property Taxes (Note: Tax	Clark: $205,000	Clark: $205,000

Table 3.14-4. Environmental Issues/Impacts, Zone 4: Stateline to Sheep Station

Environmental Issues/Impacts	4A (Proposed Action)	Preferred Alternative
Length (Miles)	**20**	**20**
values expected to decrease slightly over time)		
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.	
Annual Value of Grazing Land Taken out of Production	$423	$423
Annual Value of Lost Crop Production	$0	$0
Annual Increase in Agricultural Operating Costs	$0	$0
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views if a study of property values in a high end residential area in Montreal is relevant. Potential increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.	
Annual Roadway Viewing (Hours Affected)	78,840	78,840
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.	
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.	
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and inter-community discord and for some people who prefer high-quality views and natural landscapes. Potential increase in well-being for people who experience benefits from employment, income, and improved reliability or affordability of electricity associated with the proposed project.	
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, which could yield net benefits to the regional and national economy. May affect Idaho ratepayers indirectly either positively or negatively.	
Soils and Geology		
Miles of Active Faults (Within 2 Miles)	0	0
Number Active Fault Crossings	0	0
Potential and Mapped Mass Movement Areas (Miles)	0	0
Liquefaction Potential (Miles)	3.3	3.3

Table 3.14-4. Environmental Issues/Impacts, Zone 4: Stateline to Sheep Station

Environmental Issues/Impacts	4A (Proposed Action)	Preferred Alternative
Length (Miles)	**20**	**20**
Permanent Soil Impacts: Structures (Acres)	42	42
Permanent Soil Impacts: New Roads (Acres)	27	27
Moderate and High Residual Soil Impacts (Acres)	2	2
Paleontology		
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	0	0
Vegetation		
Permanent Direct Impact (Acres)	71	71
Short-/Long-Term Direct Impact (Acres) *	217	217
Permanent Direct Impacts to Grazing Allotments (Acres)	47	47
Total Direct Impact to Riparian/Wetland Areas (Acres)	24	24
Relative Risk to Special Status Plant Species	Moderate/Low	Moderate/Low
Visual Resources		
High Visual Impact (Miles)	9	9
Residences Within 0.5 Miles	49	49
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	0.7/0.7	0.7/0.7
Route on USFS Land and Miles Inconsistent within SIO/VQO Objectives (Miles/Miles)	5.5/5.5	5.5/5.5
Sensitive Viewing Areas Within 1 mile	5	5
Water and Wetland Resources		
Miles Stream Within 0.25-Mile of New Travel Network	34	34
Stream Crossings Required by New Travel Network	9	9
Perennial Stream Crossings by New Roads (excludes Overland routes)	0	0
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	3.8	3.8
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	20	20
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	0	0
Environmental Justice		
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	1	1
	Less disposable income to address project-related concerns.	
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	0	0

Table 3.14-4. Environmental Issues/Impacts, Zone 4: Stateline to Sheep Station

Environmental Issues/Impacts	4A (Proposed Action)	Preferred Alternative
Length (Miles)	**20**	**20**

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Air and Atmospheric Values					
Construction-Generated Particulate and Gaseous Emissions	Lowest	Second highest	Highest	Second lowest	Second lowest
Closest Distance to Fort Hall PM_{10} Non-attainment Area	21 Miles		8 Miles		8 Miles
Closest Distance to Portneuf Valley PM_{10} Maintenance Area	29 Miles		14 Miles		14 Miles
GHG Emissions from Construction and Slash Burning	All alternatives would generate similar low levels of GHGs.				
Ozone Generation from Corona Activity	All alternatives generate similar very low levels of ozone.				
Closest Distance to Craters of the Moon Wilderness (Class I Area)	24 Miles		30 Miles		30 Miles
Closest Distance to Red Rock Lakes Wilderness (Class I Area)	24 Miles				24 Miles
Biological Resources					
Elk Winter Range (Miles Crossed)	20.7	56.4	25.8	55.8	55.8
Mule Deer Winter Range (Miles Crossed)	2.4	0	0	0	0
Pronghorn Habitat (Miles Crossed)	107.2	111.7	116.2	111.1	111.1
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	306,856	211,669	81,091	137,338	137,338
Greater Sage-Grouse Leks Within 3 Miles	78	58	39	45	45
Effects on Forest-Dependent Species of Concern	Low	NA	NA	NA	NA

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Effects on Riparian/Wetland-Dependent Species of Concern	Low	Low	Low	Low	Low
Effects on Shrubland-Dependent Species of Concern	Moderate	Low	Low	Low	Low
Effects on Sagebrush-Dependent Species of Concern	High	High	Moderate	High	High
Fish-bearing Streams Crossed by New Roads or Overland Routes	0	0	0	0	0
Sensitive Fish Species in Crossed Streams	None	None	None	None	None
Cultural Resources					
Number of Previously Identified Sites Within a 0.5-Mile Buffer	136	52	40	42	42
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5-Mile Buffer)	28,762	29,184	23,962	24,864	24,864
Miles of Transmission Line from which Critical Cultural Resources are Visible	15	27	9	22	22
Miles of Transmission Line Visible from Critical Cultural Resources	7.1	29	5.8	17.7	17.7
Number of Critical Visual Impact Points Within 4 mile Buffer	11	16	7	9	9
Human Health and Safety					
Electric Field at Edge of ROW (kV/m)	1.011–1.554	1.011–1.553	1.313–1.550	1.313–1.550	1.313–1.550
Magnetic Field at Edge of ROW Under Typical Loading (mG)	11.1–33.9	12.5–33.8	15.8–33.8	15.8–33.8	15.8–33.8
Audible Noise at Edge of ROW–L50 Rain (dBA)	47.5–53.4	47.8–53.4	47.8–52.6	47.8–52.6	47.8–52.6
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	52–63.4	52.7–63.4	52.7–61.4	52.7–61.4	52.7–61.4
TV Interference at Edge of ROW–Rain (dBuV/m)	16.9–25.6	17.3–25.6	17.3–24.2	17.3–24.2	17.3–24.2

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Land Use and Recreation					
Private Land Crossed (Miles)	14	27	65	39	39
Public Land Crossed (Miles)	92	86	50	72	72
Residences Within 300 Feet	0	0	14	2	2
Residences within 300–1,000 Feet	2	1	19	1	1
Irrigated Cropland (Miles Crossed)	<1	5	24	8	8
Non-Irrigated Cropland (Miles Crossed)	<1	<1	0	3	3
Prime Irrigated Farmland (Miles Crossed)	7	29	38	34	34
Acres of Agricultural Land Impacted					
Temporary	<8	56	311	88	88
Permanent	<2	17	84	26	26
Special Management Areas					
Wilderness Study Areas Within 1,000 Feet	Cedar Butte	Hell's Half Acre	Hell's Half Acre	Cedar Butte and Hell's Half Acre	Cedar Butte and Hell's Half Acre
National Monument or Natural Landmark (Within 1,000 Feet)	None	None	Hell's Half Acre Lava Field	None	None
National Historic Trails Crossed	Goodale's Cutoff NHT and Nez Perce NHT	Goodale's Cutoff NHT			
National Scenic Trails Crossed	None				
Scenic Byway Crossed	Lost Gold Trails Loop and Sacajawea Historic Byway	Lost Gold Trails Loop			
Wildlife Management Areas	None	Market Lake WMA			
Active Mining Claims Crossed	24	2	0	2	2
New Access Roads on Private Land (Miles)	<1	3	7	3	3
New Access Roads on Public Land (Miles)	7	16	11	14	14

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	None	1	4	1	1
Socioeconomics					
Employment	98 jobs in Idaho (across all zones) during construction, most for out-of-state workers. Up to 68 jobs in Idaho businesses supporting the construction activities. Number of permanent jobs created would be insignificant.				
Income	No distinguishable long-term effects expected.				
Population	No distinguishable long-term effects expected.				
Housing	Potential seasonal short-term supply constraints within commuting distance.				
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.				
Expected Annual Property Taxes (Thousands of Dollars) (Note: Tax values expected to decrease slightly over time)	Bingham: $395 Butte: $729 Clark: $407 Jefferson: $34 Total: $1,600	Bingham: $755 Bonneville: $125 Butte: $43 Clark: $174 Jefferson: $514 Total: $1,600	Bingham: $876 Bonneville: $188 Clark: $174 Jefferson: $424 Total: $1,700	Bingham: $751 Bonneville: $125 Clark: $174 Jefferson: $514 Total: $1,600	Bingham: $751 Bonneville: $125 Clark: $348 Jefferson: $514 Total: $1,700
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.				
Annual Value of Grazing Land Taken out of Production	$2,207	$2,467	$1,191	$2,130	$2,130
Annual Value of Lost Crop Production	$1–$204	$10–$1,667	$61–$9,843	$22–$3,514	$22–$3,514
Annual Increase in Agricultural Operating Costs	$106–$912	$840–$7,256	$4,661–$40,282	$1,918–$16,574	$1,918–$16,574
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views, if a study of property values in a high end residential area in Montreal is relevant. Potential increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.				
Annual Roadway Viewing (Hours Affected)	37,264	62,668	54,626	62,668	62,668
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.				

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.				
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and inter-community discord and for some people who prefer high-quality views and natural landscapes. Potential increase in well-being for people who experience benefits from employment, income, and improved reliability or affordability of electricity associated with the proposed project.				
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, which could yield net benefits to the regional and national economy. May affect Idaho ratepayers indirectly either positively or negatively.				
Soils and Geology					
Miles Active Faults (Within 2 Miles)	10.8	4.8	0	4.8	4.8
Number Active Fault Crossings	4	2	0	2	2
Potential and Mapped Mass Movement Areas (Miles)	0	0	0	0	0
Liquefaction Potential (Miles)	26.2	1.4	1.2	1.2	1.2
Permanent Soil Impacts: Structures (Acres)	226	239	247	234	234
Permanent Soil Impacts: New Roads (Acres)	24	54	53	50	50
Moderate and High Residual Soil Impacts (Acres)	3	3	3	3	3
Paleontology					
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	81	58	18	50	50
Vegetation					
Permanent Direct Impact (Acres)	259	294	299	283	283
Short-/Long-Term Direct Impact (Acres) *	1,142	1,207	1,280	1,211	1,211
Permanent Direct Impacts to Grazing Allotments (Acres)	180	160	84	129	129

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Total Direct Impact to Riparian/Wetland Areas (Acres)	2	2	3	2	2
Relative Risk to Special Status Plant Species	High	Low	Moderate	Low	Low
Visual Resources					
High Visual Impact (Miles)	14	7	16	9	9
Residences Within 0.5 Miles	7	4	157	13	13
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	45.1/15.9	64.2/7.9	43.7/13.9	47.5/2.9	47.5/2.9
Route on USFS Land and Miles Inconsistent within SIO/VQO Objectives (Miles/Miles)	NA	NA	NA	NA	NA
Sensitive viewpoints within 1 Mile	5	5	4	5	5
Water and Wetland Resources					
Miles Stream Within 0.25-Mile of New Travel Network	83	43	17	31	31
Stream Crossings Required by New Travel Network	21	27	13	27	27
Perennial Stream Crossings by New Roads (Excludes Overland Routes)	0	0	0	0	0
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	1	0.3	0.4	0.3	0.3
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	0.6	2.1	2.2	2.1	2.1
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	0.9	0	0	0	0

Table 3.14-5. Environmental Issues/Impacts, Zone 5: Sheep Station to Coffee Point

Environmental Issues/Impacts	5A (Proposed Action)	5B	5C	5D	Preferred Alternative
Length (Miles)	**107**	**114**	**117**	**111**	**111**
Environmental Justice					
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	3	3	4	2	2
	Less disposable income to address project-related concerns.				
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	0	0	2 Less capacity to address project-related concerns because of language and cultural barriers.	0	0

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

Table 3.14-6. Environmental Issues/Impacts, Zone 6: Coffee Point to Midpoint

Environmental Issues/Impacts	6A (Proposed Action)	Preferred Alternative
Length (Miles)	**107**	**107**
Air and Atmospheric Values		
Construction-Generated Particulate and Gaseous Emissions	Only Alternative	
Closest Distance to Fort Hall PM_{10} Non-attainment Area	20 Miles	
Closest Distance to Portneuf Valley PM_{10} Maintenance Area	29 Miles	
GHG Emissions from Construction and Slash Burning	Low	
Ozone Generation from Corona Activity	Very low levels of ozone.	
Closest Distance to Craters of the Moon Wilderness (Class I Area)	28 Miles	
Biological Resources		
Mule Deer Winter Range (Miles Crossed)	49.2	49.2
Pronghorn Habitat (Miles Crossed)	106.8	106.8
Greater Sage-Grouse Habitat Within 3 Miles (Acres)	2,266	2,266
Greater Sage-Grouse Leks Within 3 Miles	9	9
Effects on Riparian/Wetland Dependent-Species of Concern	Low	Low
Effects on Sagebrush-Dependent Species of Concern	High	High
Fish-bearing Streams Crossed by New Roads or Overland Routes	0	0
Sensitive Fish Species in Crossed Streams	None	None
Cultural Resources		
Number of Previously Identified Sites Within a 0.5-Mile Buffer	96	96
High Site Density from Predictive Model (Acres Based on Alternative Length and 0.5-Mile Buffer)	0	0
Miles of Transmission Line from which Critical Cultural Resources are Visible	16	16
Miles of Transmission Line Visible from Critical Cultural Resources	20	20
Number of Critical Visual Impact Points Within 4-Mile Buffer	6	6

Table 3.14-6. Environmental Issues/Impacts, Zone 6: Coffee Point to Midpoint

Environmental Issues/Impacts	6A (Proposed Action)	Preferred Alternative
Length (Miles)	**107**	**107**
Human Health and Safety		
Electric Field at Edge of ROW (kV/m)	0.774–3.036	0.774–3.036
Magnetic Field at Edge of ROW Under Typical Loading (mG)	4.6–52.1	4.6–52.1
Audible Noise at Edge of ROW–L50 Rain (dBA)	44.1–56.5	44.1–56.5
Radio Noise at Edge of ROW–L50 Rain (dBuV/m)	45.3–71.8	45.3–71.8
TV Interference at Edge of ROW–Rain (dBuV/m)	11.6–33.4	11.6–33.4
Land Use and Recreation		
Private Land Crossed (Miles)	18	18
Public Land Crossed (Miles)	89	89
Residences Within 300 Feet	0	0
Residences between 300–1,000 Feet	1	1
Irrigated Cropland (Miles Crossed)	2	2
Non-Irrigated Cropland (Miles Crossed)	0	0
Prime Irrigated Farmland (Miles Crossed)	14	14
Acres of Agricultural Land Impacted		
Temporary	8	8
Permanent	4	4
Special Management Areas		
Wilderness Study Areas Within 1,000 Feet	Great Rift and Shale Butte	
National Monument or Natural Landmark Within 1,000 Feet	Craters of the Moon National Monument and Preserve	
New Access Roads on Private Land (Miles)	1	1
New Access Roads on Public Land (Miles)	38	38
FAA-Registered Airports within 3.78 Miles (20,000 Feet)	None	None
Socioeconomics		
Employment	98 jobs in Idaho (across all zones) during construction, most for out-of-state workers. Up to 68 jobs in Idaho businesses supporting the construction activities. Number of permanent jobs created would be insignificant.	
Income	No distinguishable long-term effects expected.	
Population	No distinguishable long-term effects expected.	
Housing	Potential seasonal short-term lodging supply constraints within commuting distance.	

Table 3.14-6. Environmental Issues/Impacts, Zone 6: Coffee Point to Midpoint

Environmental Issues/Impacts	6A (Proposed Action)	Preferred Alternative
Length (Miles)	**107**	**107**
Public Services and Infrastructure	Potential increased costs for local governments, emergency service providers, and wildfire response providers during construction and, to a lesser extent, operation. Public services consumed by activities associated with the proposed project would not be available for others.	
Expected Annual Property Taxes (Thousands of Dollars) (Note: Tax values expected to decrease slightly over time)	Bingham: $48 Blaine: $116 Jerome: $321 Lincoln: $440 Minidoka: $152 Power: $630 Total: $1,700	Bingham: $48 Blaine: $116 Jerome: $321 Lincoln: $440 Minidoka: $152 Power: $630 Total: $1,700
Value Associated with Perceived Impacts to Health and Safety	Potential decrease in well-being for people who perceive an increased risk to health and safety associated with exposure to EMFs.	
Annual Value of Grazing Land Taken out of Production	$2,745	$2,745
Annual Value of Lost Crop Production	$6-$919	$6-$919
Annual Increase in Agricultural Operating Costs	$435-$3,762	$435-$3,762
Property Value Derived from Aesthetic Resources	The values of nearby properties often do not change when a new transmission line is built. However, there is a potential decrease in property values of between 0 and 10 percent for those on or near the ROW, and potentially up to 20 percent for some properties on the higher end of the market with structures directly obstructing views if a study of property values in a high end residential area in Montreal is relevant. Potential increase in property values if development could occur that would not have been possible otherwise, or if desirable changes in views, access to open space, or new recreational opportunities for adjacent properties are created.	
Annual Roadway Viewing (Hours Affected)	50,528	50,528
Value Derived from Scenic Views from Roadways	Potential decrease in well-being for travelers who prefer natural landscapes.	
Value Derived from Recreation	Potential decrease in well-being for recreationists (e.g., hunters, anglers, and wildlife watchers) who prefer solitude and natural landscapes, and potential decrease in expenditures to local businesses. Potential increase in well-being for recreationists from expanded access to some areas.	
Value Derived from Quality of Life	Potential decrease in well-being for people who experience interpersonal and inter-community discord and for some people who prefer high-quality views and natural landscapes. Potential increase in well-being for people who experience benefits from employment, income, and improved reliability or affordability of electricity associated with the proposed project.	

Table 3.14-6. Environmental Issues/Impacts, Zone 6: Coffee Point to Midpoint

Environmental Issues/Impacts	6A (Proposed Action)	Preferred Alternative
Length (Miles)	**107**	**107**
Value Associated with the Transmission System	Increased transfer capacity of electricity between Montana and Idaho. Potential reduced costs of delivering electricity service to customers, which could yield net benefits to the regional and national economy. May affect Idaho ratepayers indirectly either positively or negatively.	
Soils and Geology		
Miles Active Faults (Within 2 Miles)	0	0
Number Active Fault Crossings	0	0
Potential and Mapped Mass Movement Areas (Miles)	0	0
Liquefaction Potential (Miles)	1.9	1.9
Permanent Soil Impacts: Structures (Acres)	224	224
Permanent Soil Impacts: New Roads (Acres)	1,704	1,704
Moderate and High Residual Soil Impacts (Acres)	0	0
Paleontology		
Fossil-bearing Formations (PFYC 2 or Higher, Miles Crossed)	83 *(fossils in caves in basalt)*	83 *(fossils in caves in basalt)*
Vegetation		
Permanent Direct Impact (Acres)	485	485
Short-/Long-Term Direct Impact (Acres) *	1,177	1,177
Permanent Direct Impacts to Grazing Allotments (Acres)	349	349
Total Direct Impact to Riparian/Wetland Areas (Acres)	4	4
Relative Risk to Special Status Plant Species	Low	Low
Visual Resources		
High Visual Impact (Miles)	0.6	0.6
Residences Within 0.5 Mile	1	1
Route on BLM Land and Miles Inconsistent with VRM Objectives (Miles/Miles)	85.4/1.5	85.4/1.5
Sensitive Viewing Areas Within 1 mile	5	5
Water and Wetland Resources		
Miles Stream Within 0.25-Mile of New Travel Network	19	19
Stream Crossings Required by New Travel Network	12	12
Perennial Stream Crossings by New Roads (excludes Overland routes)	0	0

Table 3.14-6. Environmental Issues/Impacts, Zone 6: Coffee Point to Midpoint

Environmental Issues/Impacts	6A (Proposed Action)	Preferred Alternative
Length (Miles)	**107**	**107**
Permanent Direct Impact to Riparian/Wetland Areas (Acres)	0.8	0.8
Short-/Long-Term Direct Impact to Riparian/Wetland Areas (Acres) *	3.5	3.5
Total Direct Impact to Forested Riparian/Wetland Areas (Acres)	0	0
Environmental Justice		
Census Block Groups Within 6 Miles Where at Least 20 Percent of the Population is at or Below Federal Poverty Level	1	1
	Less disposable income to address project-related concerns.	
Census Block Groups Within 6 Miles Where Half of the Population is Racial or Ethnic Minority	1	1
	Less capacity to address project-related concerns because of language and cultural barriers.	

* Short-term impacts are those restored within 5 years; long-term are those that take more than 5 years to restore.

3.14.2.1 Common Project Elements

Several elements of the proposed project are common to all of the action alternatives; these include construction of a new Townsend Substation, modifications of the Midpoint Substation, and installation of microwave and radio communication facilities. The Mill Creek Substation would require modifications for all but one set of routes. Alternative 1D connecting to Alternative 2E would not go to the Mill Creek Substation; therefore, no activity would occur at this location if this set of alternatives is selected.

New Townsend Substation. The proposed Townsend Substation site would occupy about 52 acres of what is currently a center-pivot irrigated field. Just more than 1,000 feet from the site are agricultural outbuildings and a residence. Four residences are located approximately 1,000 feet west and south of the proposed substation. Adjacent land use is a mixture of center-pivot irrigation and pasture. The substation would require no additional access road construction.

Construction of this substation would remove approximately 52 acres of center-pivot irrigated land from production. Residences and outbuildings located 1,000 feet from the substation would not change substantially in terms of land use. The residences would notice new traffic from substation maintenance and use. No known wildlife, water, or wetland resources are within the footprint of this station, and no sensitive plants are known to exist here. The substation would have a significant adverse impact on the owners of the irrigated pasture land required for the new facility. The new substation would not have a significant impact on other resources.

Mill Creek Substation. The Mill Creek Substation site is dominated by grassland. No known sensitive species of plants or animals are known from this location. No residences are located within 1,000 feet of this site. The proposed additions to the substation cannot be completed in the existing fenced area; expansion of the substation yard would be required. Engineering studies would be completed to determine the ultimate modifications required at the Mill Creek Substation. An expansion of the substation would permanently remove approximately 9 acres of rangeland from production. No significant adverse impacts are expected from this project element.

Midpoint Substation Expansion. The existing Midpoint Substation would be modified to accommodate the terminus of the proposed project. The proposed substation additions would be completed within the existing fenced area; therefore, no impacts to any resources are anticipated.

Communication Facilities. All communication facilities that would be required for the proposed project would be installed in or adjacent to existing communication facilities. In the worst case, several acres of vegetation would have to be cleared to allow for construction of a support building, generator, and fuel supply. Installation of an aerial may be required in some locations, while in other locations the antennas could be mounted on existing aerials. The overall impact to all resource areas from this element of the proposed project would not be significant.

Common Environmental Impacts. In several areas of the proposed project, the impacts are very similar across the zones; these include Human Health and Safety, elements of Air and Atmospheric Values, and Socioeconomics. Those are summarized here and not discussed in the zone summaries that follow.

- *Human Health and Safety.* There would be some exceedance of Montana State standards for EMF and noise levels at the edge of the ROW in some locations. Idaho has no standards for allowable EMF or noise levels. Elevated EMF levels in residential areas would be considered a substantial adverse affect.

- *Air and Atmospheric Values.* Similar amounts of ozone would be generated by all alternatives in each zone. Particulate and GHG emissions would vary depending on length of the alternative and the amount of slash burning required.
- *Socioeconomics.* Approximately 200 jobs would be created in Montana and 100 in Idaho. Most of these would be construction-related and expected to go to out-of-state workers. Up to 140 jobs in support industries could be created in Montana and 70 in Idaho, although few of these would be long-term in nature. Project-related impacts on housing would be limited to short-term seasonal shortages during construction. A study from Montreal indicated that property values could decrease up to 10 percent for most locations where the proposed project crosses or is immediately adjacent to property and perhaps as much as 20 percent for properties at the higher end of the market where structures obstruct key views. Structures across the landscape could decrease the well-being of travelers, recreationists, and others who find the presence of the transmission line a detractor from the landscape. Others could benefit from direct or indirect employment or increased property tax revenues.

3.14.2.2 Zone 1

The main difference between the four alternatives in Zone 1 is that three of them would go to the Mill Creek Substation (Alternatives 1A, 1B, and 1C) compared to Alternative 1D and the agency-preferred alternative, which would terminate near Pipestone, Montana. Alternative 1D is 54 miles long and the shortest alternative in this zone; Alternative 1C is the longest at 95 miles. NorthWestern's proposed action is Alternative 1B. The agency-preferred alternative is Alternative 1D, with some LRO modifications, and is 55 miles long.

Air and Atmospheric Values. Alternatives 1B and 1C cross through the Butte PM_{10} non-attainment area. The agency-preferred alternative would have the lowest emissions of GHGs from construction and slash burning because it crosses substantially less forested habitat.

Wildlife. Alternatives 1D and the agency-preferred alternative cross relatively fewer miles of big game winter range than the other three alternatives. Alternative 1A would not impact sage-grouse habitat, while the other three alternatives would have about the same acreage within 3 miles of the proposed project. Alternatives 1A and 1B would cross more miles of wildlife movement corridor, possibly resulting in more fragmentation than the other three alternatives; the agency-preferred alternative would cross the fewest miles of wildlife movement corridor. Impacts to species of concern are similar among all alternatives in this zone with the exception that Alternative 1A would have moderate impacts to forest-dependant species, while the other four alternatives would have moderate impacts to grassland-dependant species.

Cultural Resources. The key difference between the alternatives in relation to cultural resources are that Alternative 1D and the agency-preferred alternative would have no critical visual impact points within a 4-mile buffer and would also not be visible from any critical cultural resources. They would, however, have 50 known sites within a 4-mile buffer, but that is substantially fewer than for the other alternatives in the zone, which range from 80 to 138 known sites in the same buffer. Resources would be visible from the transmission line for all alternatives; the amount of line this would apply to ranges from 29 to 48 miles. All alternatives would cross similar amounts of area predicted to have a high site density.

Land Use. Alternative 1A would use the most public land (46 percent), while the other four alternatives, including the agency-preferred alternative, would use between 70 and 80 percent private. Total miles of private land required ranges from 39 miles for the agency-preferred alternative to 76 miles for Alternative 1C. Because they both run through the Butte area, Alternatives 1B and 1C would have

substantially more residences within 1,000 feet of centerline. Alternative 1A would have the fewest residences within 1,000 feet, at 11, while the agency-preferred alternative and Alternative 1D would have 14. Because of the terrain crossed and the remoteness of the location, Alternative 1A would require the most new access roads to both public and private land. In part because it is shorter but also because of different terrain, the agency-preferred alternative would require the fewest new roads on private land and the fewest new roads total.

Socioeconomics. The major differences between route alternatives from a socioeconomic viewpoint are the property taxes generated by the alternatives, the value of lost crop production, and the annual viewing hours. Property taxes are related to the length of the alternative within each county and the tax rates in those counties. They range from approximate $26 million for Alternatives 1A, 1B, and 1C to $12 million for Alternative 1D and the agency-preferred alternative. The value of lost crop production and increased operating costs to agricultural operations is highest for Alternative 1C and lowest for the agency-preferred alternative. Annual viewing hours are a measure of how much time people would spend looking at the transmission line as they travel through the region. These values are highest for those alternatives that closely follow the major roads such as I-90 (Alternatives 1B and 1C). They are lowest by an order of magnitude for Alternative 1A because there are so few viewing areas.

Soils, Geology, and Paleontology. There are relatively few major differences between the alternatives for these resources. One of the noticeable differences is the acres of permanent impacts to soils and resulting residual effects. These values are highest for the longer alternatives and those with more roads. The agency-preferred alternative would have the lowest level of permanent impacts to soils and the smallest amount of residual impacts, while Alternative 1A would have the highest. Areas potentially supporting fossil-bearing formations are generally similar for Alternatives 1B through 1D and the agency-preferred alternative, but are substantially lower for Alternative 1A.

Vegetation. All Zone 1 alternatives have similar moderate risks to special status plants except for Alternative 1A, which is considered to have a low risk. In part because it is one of the shorter routes, the agency-preferred alternative has the smallest amount of permanent impacts to vegetation and wetland/riparian areas. However, it would have permanent impacts to about 118 acres of grazing allotments; Alternative 1C would impact only about 49 acres.

Visual Resources. Alternatives 1A, 1B, and 1C would have about the same amount of transmission line considered to have a high level of impact to visual resources (27 to 29 miles). The agency-preferred alternative would have the shortest amount of line (6 miles) with high levels of visual impacts. Because the alignments cross through more developed areas, these three alternatives would also have more homes within 0.5 mile of the centerline. Because they are shorter and do not cross through such developed areas, Alternative 1D and the agency-preferred alternative would have fewer residences within 0.5 mile. Alternative 1A would have 11 sensitive viewing areas within 1 mile of the centerline, the most of any alternative in this zone (sensitive viewing areas include recreational facilities, interstates, and residences). Alternative 1D and the agency-preferred alternative would have the fewest, with six sensitive viewing areas within 1 mile. Alternatives 1A, 1B, and 1C would not be consistent with USFS visual management objectives for between about 5 and 11 miles. Similarly, Alternative 1C and the agency-preferred alternative would not be consistent with BLM VRM objectives; however, the distance not compliant is about 0.1 mile. Even after the application of mitigation to minimize the impact of the transmission line, it would remain highly visible on the landscape

Water and Wetland Resources. Stream crossings would be required for the new access roads and overland routes for all alternatives. The number of crossings ranges from 60 for Alternative 1A to 120 for Alternative 1B. The agency-preferred alternative would require 82 crossings. The vast majority of all

crossings would be of intermittent streams; only two to four perennial streams would be crossed by any of the alternatives.

Environmental Justice. Neither Alternative 1D nor the agency-preferred alternative would be located within 6 miles of a census block group where 20 percent of the population or more is at or below the federal poverty level. Alternative 1A would pass five census blocks, and Alternatives 1B and 1C would pass significantly more low-income areas. People living in these areas may have less disposable income to address project-related concerns.

3.14.2.3 Zone 2

Zone 2 has five alternatives. The major route difference between them is that Alternatives 2A through 2D all start at the Mill Creek Substation. Alternative 2E starts near Pipestone, Montana, at the terminus of Alternative 1D. Alternative 2D was developed to maximize the use of public land. NorthWestern's proposed action is Alternative 2B. The agency-preferred alternative is Alternative 2E. These alternatives range from 54 to 90 miles long. Alternative 2C is the longest because it follows I-90 east to Pipestone before turning to the south through the Jefferson Valley.

Air and Atmospheric Values. Alternative 2C crosses through the Butte PM_{10} non-attainment area because it follows the same route as Alternative 1B. None of the other alternatives would have adverse long-term impacts on air quality or atmospheric values.

Biological Resources. Alternatives 2E (the agency-preferred alternative) crosses fewer miles of big game winter range than the other alternatives in this zone. The exception to this is pronghorn winter range, where Alternative 2E crosses over 45 miles compared to just more than 30 for Alternative 2B. All five alternatives have a substantial amount of sage-grouse habitat within 3 miles of the proposed routes. Alternatives 2A, 2C, 2E (the agency-preferred alternative) would have similar amounts of acreage (approximately 27,000 to 28,000 acres). Alternative 2D would have approximately 71,000 acres within 3 miles of the centerline. There would also be almost 370 acres of sage-grouse core habitat and three leks within 3 miles of the centerline for this alternative. None of the other alternatives in this zone have any core habitat within 3 miles. No leks are within 3 miles for Alternatives 2C or 2E (the agency-preferred alternative). Alternatives 2C and 2E would cross over 14 miles of waterfowl use areas, substantially more than any of the other alternatives in this zone. Alternative 2B would cross over 80 miles of wildlife movement corridors compared to 30 miles for Alternative 2E (the agency-preferred alternative). More crossings of corridors would lead to more fragmentation of habitat and disruption of movement. Potential impacts to grassland-dependent species of concern are considered moderate for Alternatives 2C and 2E. Impacts to sagebrush-dependent species are considered moderate for Alternatives 2A, 2B, and 2D. Alternatives 2C, 2D, and 2E (the agency-preferred alternative) would require crossing of three fish-bearing streams by new roads or overland routes; however, none of these support sensitive fish species.

Cultural Resources. Alternative 2E (the agency-preferred alternative) have the potential to have a lower level of impact to cultural resources. There are fewer known sites within a 0.5-mile buffer of the ROW centerline for this alternative and substantially fewer miles of visual impacts. The predictive model indicates that about the same acres/miles of the analysis area could have a high site density between all alternatives. Alternatives 2C and 2D have the potential to have the highest level of impacts to cultural resources of all the alternatives in this zone.

Land Use and Recreation. Alternative 2D would cross the most public land (82 percent) and therefore have the lowest impact to private property. The amount of private land used for the other alternatives ranges from 14 miles (26 percent) for Alternatives 2E (the agency-preferred alternative) to 36 miles (63 percent) for Alternative 2A. Because it is substantially longer than the other alternatives and crosses

through the developed areas around Butte, Alternative 2C has more residences within 1,000 feet (84) compared to 1 residence within 1,000 feet for Alternative 2E (the agency-preferred alternative). Alternative 2C would also require more access roads than any of the other alternatives both on private and public land. Alternative 2A would require the fewest new roads overall.

Socioeconomics. Property taxes potentially generated by the Zone 2 alternative would range from $4 million for Alternatives 2E (the agency-preferred alternative), $6 million for Alternatives 2A, 2B, and 2D, to approximately $8 million for Alternative 2C. The annual value of grazing land taken out of production would be highest for Alternative 2C and lowest for Alternative 2A. Alternative 2E (the agency-preferred alternative) would have the second highest impact on grazing land. However, Alternative 2E and the agency-preferred alternative would have the lowest annual value of lost crop production. Annual increases in agricultural operating costs would be highest for Alternative 2B and lowest for Alternative 2E. Total viewing hours impacted is highest for those alternatives that parallel major roadways for a portion of their length. Because of this, Alternatives 2B and 2C would affect the most viewing hours and Alternatives 2E (the agency-preferred alternative) the fewest.

Soils, Geology, and Paleontology. The major differences between alternatives in terms of soils and geology relate to exposure of the proposed project to faults and mass movement areas. Alternative 2E (the agency-preferred alternative) would parallel about 3 miles of active faults, the lowest of any of the alternatives. Alternatives 2C and 2D would require crossing of two active faults. Alternative 2D would also cross almost 8 miles of mapped mass movement areas, compared to only 0.2 miles for Alternative 2E (the agency-preferred alternative). Alternatives 2A, 2B, and 2C would cross more fossil-bearing land than any of the other alternatives (35 to 46 miles). Alternative 2D would cross approximately 19 miles and Alternative 2E (the agency-preferred alternative) approximately 24 miles.

Vegetation. Because it crosses through more developed areas and closely parallels I-15 for a portion of its length, Alternative 2A would result in the lowest permanent impacts to vegetation. Conversely, because it is longer, Alternative 2C would have permanent impacts on more than 700 acres of vegetation. Alternative 2B would result in the smallest loss of grazing allotments (38 acres) compared to 173 acres for Alternative 2C and 164 acres for Alternatives 2E (the agency-preferred alternative). Impacts to wetlands and riparian habitat would be the lowest for Alternative 2E (the agency-preferred alternative); they would be highest for Alternative 2D. Potential impacts to special status plant species were considered moderate for all alternatives except Alternative 2D, which was the lowest of the alternatives.

Visual Resources. Because it is somewhat shorter and runs through a more remote area, Alternative 2E (the agency-preferred alternative) has fewer miles of high visual impact (7) compared to Alternative 2C (22 miles), which follows I-90 and is much more visible. Similarly, because Alternative 2C crosses through Butte, 251 residences are within 0.5 mile compared to 11 for Alternative 2E (the agency-preferred alternative). All the alternatives in this zone would cross BLM land and be inconsistent with VRM objectives for a portion of that crossing. The total distance involved ranges from almost 4 miles for Alternative 2B to 0.3 mile for Alternatives 2D. Alternatives 2A through 2D would cross USFS land and be inconsistent with visual management objectives for portions of those crossings. Alternative 2E (the agency-preferred alternative) would cross no USFS land. Sensitive viewing areas within 1 mile of these alternatives range from a low of 5 for Alternative 2C to 10 for Alternative 2D.

Water and Wetland Resources. A variety of streams, creeks, and rivers are within this zone. Of these, Alternative 2A would have half the miles of streams within a quarter mile of the centerline compared to all the other alternatives. The crossings of these streams by the new roads and overland routes would range from 52 for Alternative 2A to 91 for Alternative 2D. The vast majority of these are intermittent streams. Alternative 2D would require crossing 10 perennial streams compared to none for Alternatives

2A and 2B to just four for Alternative 2E (the agency-preferred alternative). Alternative 2E (the agency-preferred alternative) would have the smallest permanent and temporary impacts to wetlands.

Environmental Justice. Alternative 2E (the agency-preferred alternative) would not be located within 6 miles of a census block group where 20 percent of the population or more is at or below the federal poverty level. All the other alternatives in this zone would be within 6 miles of lower-income neighborhoods. People living in those areas may have less disposable income to address project-specific concerns.

3.14.2.4 Zone 3

Zone 3 has three alternatives. The major route differences between them are that Alternative 3A runs to the west of Clark Canyon Reservoir before crossing I-15 north of Dell, Montana. Alternative 3C follows the a similar path as Alternative 3A, but makes a turn to the west before cutting back east and crossing I-15 north of Clark Canyon Reservoir where it joins the route for Alternative 3B to the Idaho border. The alternatives range in length from 67 miles for Alternative 3B to 72 miles for Alternatives 3A and 3C. NorthWestern's proposed action is Alternative 3B. The agency-preferred alternative is Alternative 3C with some LRO and link modifications.

Air and Atmospheric Values. There are very few differences between any of the alternatives in this zone in terms of air quality. None of the alternatives cross any Class I air management areas.

Biological Resources. The potential impact these alternatives could have on big game winter range are similar; all crossings are within a few miles in length of each other. Similarly, the amount of sage-grouse habitat within 3 miles of the centerline ranges from about 210,000 acres for Alternative 3B to about 261,000 acres for the Alternative 3C. There is a more substantial difference in the amount of sage-grouse core habitat within 3 miles. Alternative 3B is again the lowest with about 83,000 acres. Alternative 3A is the highest with approximately 141,000 acres within 3 miles; the agency-preferred alternative is in the middle of the range with approximately 119,000 acres of core habitat within 3 miles. Similarly, Alternative 3B has two leks within 3 miles compared to five for the agency-preferred alternative and eight for Alternative 3A. The agency-preferred alternative would cross fewer miles of waterfowl use area than any of the other three zone alternatives. Conversely, it would cross more miles of wildlife movement corridors than any of the other alternatives; Alternative 3A would cross the fewest miles of movement corridors. Potential impacts to species of concern are considered to be moderate for grassland and high for sagebrush-dependant species, respectively. Alternatives 3B, 3C, and the agency-preferred alternative would require new roads to be built over Maurer Creek, a stream that supports a population of Yellowstone cutthroat trout, a sensitive species. Alternative 3A would require no crossings of fish-bearing streams.

Cultural Resources. With a couple of exceptions, the alternatives in Zone 3 have almost identical potential impacts to cultural resources. They all would have between 42 and 45 known sites within a 0.5-mile buffer, cross about the same miles of areas predicted to have a high site density, have 2.8 to 3.0 miles of transmission line visible from critical cultural resources, and have one to three visual impact points within a 4-mile buffer. The difference is that Alternative 3B would have only 5 miles of transmission line from which sensitive cultural resources could be observed compared to 18 to 20 miles for the other alternatives.

Land Use and Recreation. The agency-preferred alternative would cross the most public land (84 percent) and have only one residence within 1,000 feet. The other alternatives in this zone range from 75 percent on public land for Alternative 3C to 59 percent for Alternative 3B. There would be seven residences within 1,000 feet of Alternative 3B compared to two and five for Alternatives 3A and 3C,

respectively. All alternatives would cross similar miles of agricultural lands. Alternative 3A would require the fewest miles of new access road, and those would be evenly split between public and private land. Alternative 3C would require the most total miles with about 70 percent of those on public land.

Socioeconomics. There would be minor differences in the property taxes generated by the alternatives in this zone only because they are different lengths. None of the differences are substantial. Alternative 3A would generate the lowest annual cost from grazing land taken out of production; Alternative 3C would be the highest, but the agency-preferred alternative is only a few dollars less per year. Conversely, because of the type of cropland crossed, Alternative 3A would have the highest annual value of lost crop production and Alternative 3C would have the lowest. Similarly, Alternative 3A would have the highest annual increase in cost to agricultural operations and Alternative 3C would be the lowest. Because it is screened from I-15 to a large degree, Alternative 3A would only have about 57,000 viewing hours annually compared to almost 500,000 for Alternative 3B.

Soils, Geology, and Paleontology. There are only a few substantial differences between the alternatives in relation to soils and geology resources. Alternative 3A would have more than 20 miles of active faults within 2 miles compared to just over 10 to 12 miles for the agency-preferred alternative and the other alternatives. Alternative 3A would also require crossings of three faults compared to one for the agency-preferred alternative and none for the other two alternatives. The agency-preferred alternative would cross less than a half mile of mass movement areas compared to almost 2 miles for Alternative 3C. However, the agency-preferred alternative would have the highest residual affect to soils with 20 acres; Alternative 3A would only have 4 acres of residual effects. All four alternatives in this zone cross about the same mileage of potentially fossil-bearing formations.

Vegetation. Because the alternatives are very similar in length, the overall effects to vegetation resources are extremely similar (acres permanently impacted and short-/long-term impacts). The only noticeable differences are the permanent impacts to grazing allotments where Alternative 3A is about 100 acres less than for the Alternative 3C or the agency-preferred alternative. Conversely, the agency-preferred alternative would directly affect about 19 acres of riparian/wetland areas compared to 51 acres for Alternative 3A. All alternatives would have moderate to high levels of potential to adversely impact sensitive plant species.

Visual Resources. All alternatives are within relatively close proximity to I-15 for a major portion of their alignment. Because of this, the miles of high visual impacts are similar. Alternative 3B would be the highest with 10 miles of high visual impact; the agency-preferred alternative would be the lowest with 6 miles. Alternative 3B would have 24 residences within 0.5 mile compared to 9 for the agency-preferred alternative. However, because of its route and location of where it crosses the Beaverhead River, the agency-preferred alternative would have 12 sensitive viewing areas within 1 mile compared to only 4 for Alternative 3A. All alternatives would be inconsistent with BLM VRM management objectives, but for distances of less than 1 mile.

Water and Wetland Resources. All alternatives would have similar impacts to water and wetland resources. The only real difference is that Alternative 3A would require about half the stream crossings as the other alternatives and has fewer streams within a quarter mile of the new roads and overland routes. The agency-preferred alternative would have a lower level of impact to riparian/wetland habitats, both permanent and temporary impacts.

Environmental Justice. Alternatives 3A, 3C, and the agency-preferred alternative would pass within 6 miles of two census blocks where at least 20 percent of the population is below the federal poverty level. Alternative 3B would pass within 6 miles of four blocks. People living in those areas may have less disposable income to address project-specific concerns.

3.14.2.5 Zone 4

Zone 4 has only one alternative. This alternative would cross about 20 miles of pronghorn winter range and approximately 11 miles of wildlife movement corridors. It would be within 3 miles of two sage-grouse leks and there would be about 18,000 acres of sage-grouse habitat within 3 miles. About 4 miles of this alternative are predicted to have a high density of cultural resources, and 25 known sites are within a 0.5-mile buffer of the centerline. The ROW would be visible from about 3 miles of critical cultural resources, and five critical cultural visual impact points would be within a 4-mile buffer. This 20-mile alternative would cross about 12 miles of private land and come within 1,000 feet of two residences in the process. A small amount of grazing land would be taken out of production resulting in a projected loss of about $400 in annual grazing-generated revenue. There would be permanent impacts to 71 acres of vegetation and residual impacts to 2 acres of soils. The 20-mile alternative would have 9 miles of high impact visual length and an estimated annual viewing of almost 79,000 hours. There would be 49 residences within 0.5 mile. This alternative would be inconsistent with both the BLM VRM and USFS visual management objectives for all BLM and USFS land crossed. Five sensitive viewing areas are within 1 mile. The access roads required to construct and maintain this alternative would require nine stream crossings, none of which are on perennial streams. There is one census block within 6 miles where 20 percent of the population is at or below the federal poverty level. People living in those areas may have less disposable income to address project-specific concerns.

3.14.2.6 Zone 5

Zone 5 has four alternatives. Alternative 5A is located further west than the other three and runs through the INL Site and is NorthWestern's proposed action. Alternatives 5B, 5C, and 5D generally follow I-15 to about a point west of Roberts, Idaho, where Alternative 5C continues south almost to I-15 before working to the west through a large area of agricultural lands. Alternatives 5B and 5D follow the same route into Bingham County before diverging. These alternatives are all between 107 and 117 miles long. Alternative 5D is the agency-preferred alternative.

Air and Atmospheric Values. There is very little difference between the alternatives in terms of air and atmospheric values. Alternatives 5C and 5D (the agency-preferred alternative) would be within 8 and 14 miles of the Fort Hall and Portneuf Valley PM_{10} non-attainment areas.

Biological Resources. The single largest potential impact to big game would be to pronghorn habitat because all alternatives would cross over 100 miles of pronghorn habitat. Alternative 5A would have approximately 307,000 acres of sage-grouse habitat and 78 leks within 3 miles of the centerline. Because it crosses through an extensive agricultural area, Alternative 5C would have the least amount of sage-grouse habitat and leks within 3 miles, 81,000 acres and 39, respectively. The Alternative 5D (the agency-preferred alternative) would be in between these extremes within about 137,000 acres of habitat and 45 leks within 3 miles. Because of the amount of sagebrush habitat they cross, Alternatives 5A, 5B, and 5D (the agency-preferred alternative) are considered to have a high level of impact on sagebrush-dependant species.

Cultural Resources. The major differences between alternatives and potential impacts to cultural resources for Zone 5 relate to the number of known sites within a 0.5-mile buffer and visual resources. Alternative 5A has 136 sites within a 0.5 mile compared to 40 for Alternative 5C and 42 for Alternative 5D (the agency-preferred alternative). However, Alternative 5C would also have fewer miles of visual impact to cultural resources than the other alternatives. Alternative 5B would have the highest visual impacts of all the alternatives.

Land Use and Recreation. Most of the alternatives in Zone 5 pass through areas without many residences. The exception is Alternative 5C which, because it winds through agricultural lands encounters 33 residences within 1,000 feet compared to 1 to 3 for the other alternatives. Alternative 5C would also cross 24 miles of irrigated cropland and 38 miles of prime irrigated farmland. Alternatives 5B and 5D (the agency-preferred alternative) would cross 8 miles or less irrigated cropland and between 29 and 34 miles of prime irrigated farmland. Alternative 5A would cross less than 1 mile of irrigated cropland and 7 miles of prime irrigated cropland. All alternatives would pass within 1,000 feet of one or two wilderness study areas; Alternatives 5A, 5B, and 5C would pass one and Alternative 5D (the agency-preferred alternative) would pass two. Only Alternative 5C would be within 1,000 feet of the Hell's Half Acre Lava Field National Natural Landmark. Except for Alternative 5A, the alternatives would require similar amounts of road on private (3 to 7 miles) and public lands (11 to 16 miles). Alternative 5A would require less than 1 mile of new access road on private land and only 7 miles of roads on public land.

Socioeconomics. The property taxes generated by all alternatives would be essentially the same total, with some variation in the individual counties based on the actual distance within each county. Because it crosses primarily irrigated cropland, Alternative 5C would result in the lowest annual lost value from grazing land taken out of production. Because it crosses extensive DOE lands where there is no agriculture, Alternative 5A would result in the lowest annual lost crop production and corresponding increase in operating costs. Conversely, because it crosses through so much irrigated and prime irrigated farmland, Alternative 5C would result in the highest value of annual lost cropland and increased operating costs.

Soils, Geology, and Paleontology. Some unique geologic features are within this area. All of the proposed alternatives would have to cross lava beds. Because of this and the potential for fossils to occur within the lava tubes of these flows, all alternatives except 5C would cross from about 50 to 80 miles of fossil-bearing formations. Alternative 5C would drop south avoiding most of these formations and thus cross only about 18 miles of fossil-bearing formations. Also because of its route, Alternative 5C would cross no active faults compared to two to four for the other alternatives in this zone. Because it would require fewer miles of roads, the permanent soil impacts from roads for Alternative 5A would be about half the other alternatives. However, this alternative would cross about 26 miles of area subject to liquefaction during earthshaking events.

Vegetation. Potential impacts to vegetation resulting from any of these alternatives are very similar. The only real exception is that Alternative 5A would result in fewer permanent impacts to vegetation (259 acres) compared to the other alternatives (range of 283 to 299). Because of its route through irrigated cropland, Alternative 5C would impact fewer acres of grazing allotments. Alternative 5A crosses the Sage-brush Steppe Ecosystem Reserve and larger amounts of relatively undisturbed habitat which combine to generate a higher potential to impact sensitive plant species than any of the other alternatives. Alternative 5D (the agency-preferred alternative) would have the lowest potential to impact special status plant species and is in the middle of the other ranges mentioned.

Visual Resources. Alternatives 5A and 5C would have similar levels of high visual impacts, 14 and 16 miles, respectively. Alternatives 5B and 5D (the agency preferred alternative) would have about half the mileage of high visual impacts, 7 and 9 miles, respectively. The major difference here is Alternative 5C which because of its route through agricultural areas would come within 0.5 mile of 157 residences. This is compared to 13 residences encountered by Alternative 5D (the agency-preferred alternative) and 4 for Alternative 5B. All alternatives would be inconsistent with BLM VRM management objectives for a portion of each crossing of BLM land. Alternative 5A would have the most miles inconsistent (approximately 16) and Alternative 5D (the agency-preferred alternative) the fewest (approximately 3). All alternatives would have between four and five sensitive viewing areas within 1 mile of the centerline.

Water and Wetland Resources. In part because it is closer to the Beaverhead Mountains, Lemhi Range, and Lost River Range, Alternative 5A has more miles of streams (83) within a quarter mile of the new access roads and overland routes. Alternative 5C has the fewest miles of streams within a quarter mile (17) because it is so far from the water sources. Alternative 5D (the agency-preferred alternative) would actually require the same number of stream crossings as Alternative 5B (27), which is more than either of the other two alternatives. However, these would all be intermittent streams. There would be minimal impacts to wetland resources with any of these alternatives.

Environmental Justice. Alternatives 5A, 5B, and 5C would pass within 6 miles of three, three, and four census blocks, respectively, where at least 20 percent of the population is below the federal poverty level. Alternative 5D (the agency preferred alternative) would pass within 6 miles of two census blocks. People living in those areas may have less disposable income to address project-specific concerns. Alternative 5C is the only alternative that would pass within 6 miles of two census blocks where half the population is comprised of a racial or ethnic minority. This could create a situation where people may have less capacity to address project-related concerns because of language or cultural barriers.

3.14.2.7 Zone 6

The only alternative in this 107-mile long corridor is Alternative 6A. Almost 100 known cultural sites are within 0.5 mile of this alternative; however, none of the area crossed by Alternative 6A is predicted to support a high density of sites by the predictive model. The transmission line could be seen from critical cultural resources and resources could be seen from the transmission line. This alternative would cross about 50 miles of mule deer winter range and more than 100 miles of pronghorn habitat. It would have about 2,300 acres and nine sage-grouse leks within 3 miles of the centerline. Because of the amount of sagebrush habitat it crosses, it is considered to have a high potential to impact sagebrush-dependant species of concern. Of its 107-mile length, about 18 miles would be on private land, and 89 would be miles on public land. The vast majority of the new roads would be on public land. Only one residence would be within 1,000 feet of the centerline. Alternative 6A would cross about 2 miles of irrigated farmland and 14 miles of prime irrigated farmland. The Great Rift and Shale Butte WSAs and the Craters of the Moon National Monument and Preserve would be within 1,000 feet of the centerline. Annual property taxes are expected to be about $1.7 million. Because of the farmland crossed, this alternative could result in annual lost crop production of about $900 and an annual increase in agricultural operating expenses of approximately $3,800. Alternative 6A would cross 83 miles of lava flows where there could be lava tubes in which fossils could be found, an important paleontological resource. Less than 1 mile of this route is considered to have a high level of visual impact, and only one residence is within 0.5 mile and 5five sensitive viewing areas within 1 mile. About 1.5 miles would be inconsistent with BLM VRM management objectives. The new roads and overland routes associated with Alternative 6A would require 12 stream crossings, but all of these streams are intermittent. This alternative would have minimal effects on wetland resources. Alternative 6A would pass within one census block where 20 percent of the population is at or below federal poverty level. It would also pass within 6 miles of one census block where half the population is comprised of a racial or ethnic minority. This creates a situation where people may have less disposable income or capacity to address project-related concerns because of language or cultural barriers.

3.14.3 Agency-Preferred Alternative

The mainline routes selected by the BLM, USFS, and MDEQ as the agency-preferred alternative generally follow Alternatives 1D, 2E, 3C, 4A, 5D, and 6A. It is further modified in Montana through the use of the following LROS: Lower Boulder, Clark Canyon East, Lima, and Diamond Butte. It was also necessary to use a cutover link to connect the southern end of Alternative 2E to the north end of Alternative 3C. Alternative 3C was further modified by using Link 15-2c instead of a longer, more

westward trending link that is part of Alternative 3C. Given the alternative routes considered in this EIS, the agency-preferred alternative is just about the shortest route possible between Townsend, Montana, and Midpoint Idaho.

3.14.3.1 Agency-Preferred Alternative Impact Summary

The agency-preferred alternative is discussed in relation to the other zone alternatives in Section 3.14.2. This is a summary of that discussion for the agency-preferred alternative as a whole from Townsend, Montana, to Midpoint, Idaho.

Air and Atmospheric Values. The agency-preferred alternative does not cross any PM_{10} non-attainment areas and generally would result in low levels of particulate emissions in most zones (except Zone 3 where they would be high). Low levels of GHG emissions would be expected.

Wildlife. The agency-preferred alternative crosses fewer miles of big game winter range overall and fewer miles of wildlife movement corridors than the zone alternatives. However, there would be more than 430,000 and 119,000 acres of sage-grouse habitat and core habitat, respectively, and 61 sage-grouse leks within 3 miles of the centerline. The BLM considered many routes, some of which completely avoided core areas, in the process of attempting to comply with BLM instruction memorandum No. 2010-71, entitled "Gunnison and Greater Sage-grouse Management Considerations for Energy Development (Supplement to the *National Sage-grouse Conservation Strategy*)," which became effective on March 5, 2010. Although attempts were made to comply with this when selecting the agency-preferred alternative, the agency-preferred alternative for the proposed project does cross sage-grouse core areas. Because of the amount of sagebrush near the centerline, there would be high levels of impact to sagebrush and moderate impacts to grassland-dependant species of concern.

Cultural Resources. The agency-preferred alternative would encounter significant cultural resources throughout the route. There are 284 previously identified sites within 0.5 mile of the agency-preferred alternative centerline. There would be a substantial change to the viewsheds as seen from critical cultural resource areas (historic districts) as well as from specific viewing points.

Health and Human Safety. There would be some exceedance of Montana state standards for EMF and noise at the ROW edge in some locations. Idaho has no standards. Some interference with television and radio would be possible in service fringe areas.

Land Use and Recreation. The agency-preferred alternative would cross approximately 134 miles of private land and 285 miles of public land over its 419-mile length. Four residences would be within 300 feet, and 20 residences would be within 1,000 feet of the proposed project centerline. The agency-preferred alternative would cross 221 miles of agricultural land and 17 miles of special management areas.

Socioeconomics. The agency-preferred alternative would have similar effects to socioeconomic factors as the other zone alternatives.

Soils, Geology, and Paleontology. The agency-preferred alternative would cross two active faults and be exposed to less than a mile of mapped mass movement areas. It would cross over 240 miles of formations with a moderate to high fossil-bearing potential.

Vegetation. Through construction of structures and access roads, this alternative would permanently impact approximately 1,600 acres of vegetation. This is somewhat more than some of the other route combinations, but results from the trade-off made in choosing an agency-preferred alternative on public

land not already modified for agricultural uses or otherwise developed. The agency-preferred alternative would permanently impact about 942 acres of grazing allotments on federal land. It would be considered to have a moderate level of risk when considering potential impacts to sensitive plants species.

Visual Resources. The agency-preferred alternative would have approximately 38 miles of high visual impact. This is less than other route combinations because the route does not follow the same amount of highly traveled roads. The use of LROs also helped reduce this affect. Forty residences would be within 0.25 mile, and 162 residences would be within 0.5 mile of the centerline. Over its entire length, approximately 7 miles would not be consistent with BLM VRM management objectives and fewer than 6 miles would be inconsistent with USFS visual management objectives. Forty sensitive viewing areas would be within 1 mile of the centerline.

Water and Wetland Resources. The agency-preferred alternative would require crossings on 232 streams by new roads and overland routes. Only eight of these would be on perennial streams. Impacts to wetlands would be less than 24 acres over the entire 419-mile alignment.

Environmental Justice. Six census blocks would be within 6 miles where at least 20 percent of the population was at or below the federal poverty level. The agency-preferred alternative would also pass within 6 miles of one census block where half the population is comprised of a racial or ethnic minority. This creates a situation where people may have less capacity to address project-related concerns because they have less disposable income, because of language or cultural barriers, or both.

Sensitive Areas. In addition to the discussion above, 38 categories of resource are considered sensitive under MFSA. Sensitive areas cover topics as diverse as big game winter range, wetlands, wilderness areas, areas with slopes over 30 percent, and National Historic Landmarks (Table 3.14-7). Of the 38 sensitive areas, 20 do not occur within the proposed project alignment for any of the alternatives. The remaining sensitive areas are discussed in terms of where among the alternatives they are encountered; the miles crossed are presented by zone for the agency-preferred alternative only. Impacts, mitigation, mitigation cost, and residual impacts are highly summarized from the detailed analysis presented in Chapter 3. Because this is an MFSA-specific requirement, the table presents only information for the proposed project in Zones 1 through 3.

3.14.3.2 Elements Specific to the Agency-Preferred Alternative

In the process of selecting an agency-preferred alternative, MDEQ, BLM, and the USFS chose Alternatives 2D and 3C from Zones 2 and 3, respectively. The connection of these two alternatives required the use of a crossover link between the southern end of the Zone 2 alternative and the north end of the Zone 3 alternative. In addition, Link 15-2c of Alternative 3A was used instead of a longer, more westward trending link from Alternative 3C. The potential effects on resources of these two specific links are discussed in the following section.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
1	National Wilderness Areas	None	NA	NA	NA	NA	NA
2	National Primitive Areas	None	NA	NA	NA	NA	NA
3	National Wildlife Refuges & Ranges	None	NA	NA	NA	NA	NA
4	State Wildlife Management Areas and Habitat Protection Areas	Portions of Alternatives 1B, 1C, 2A, 2B, 2C, and 2D (Sections 3.3 and 3.6)	The APA does not cross any of these areas.	NA	NA	NA	NA
5	National Parks and Monuments	None	NA	NA	NA	NA	NA
6	State Parks	None	NA	NA	NA	NA	NA
7	National Recreation Areas	None	NA	NA	NA	NA	NA
8	Corridors of Rivers in the National Wild and Scenic Rivers System and Rivers Eligible for Inclusion in the System	None	NA	NA	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
9	Roadless Areas of 5,000 Acres or Greater in Size, Managed by Federal or State Agencies to Retain Their Roadless Character	None	NA	NA	NA	NA	NA
10	Rugged Topography Defined as Areas with Slopes Greater than 30 Percent	Portions of alternatives in Zones 1 to 3 cross between 2 and 12 miles of areas with slopes greater than 30 percent.	Estimated length is 8.4 for the APA (1A, 1.5 miles; 2E, 6 miles; 3C, 0.8 miles).	Construction on steeper slopes generates more soil disturbance and results in higher levels of erosion.	Minimization of disturbance, erosion control, stockpiling, reclamation, and restoration.	$1.54 million (overlaps Nos. 26 and 28).	Percentage of the total 32 acres of high and moderate residual impacts is associated with slopes over 30 percent (Number 26).
11	Specially Managed Buffer Areas Surrounding National Wilderness Areas and National Primitive Areas	None	NA	NA	NA	NA	NA
12	State or Federal Waterfowl Production Areas	None	NA	NA	NA	NA	NA
13	National Natural Landmarks	None	NA	NA	NA	NA	NA
14	Research Natural	None	NA	NA	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
	Areas						
15	Areas of Critical Environmental Concern	Portions of Alternatives 1A, 1B, and 1D (Section 3.6)	Alternative 1D of the APA crosses 2 miles of the Elkhorn Mountains ACEC.	Temporary construction-related degradation of recreational experiences (noise, dust, traffic, road closures). Permanent effects to primitive nature of site.	Standard construction BMPs to minimize noise, dust, traffic disruptions, etc. These are all in the agency stipulations and not considered extra mitigation.	None.	Reduction of primitive recreation experience through degradation of visual resources.
16	Special Interest Areas	None	NA	NA	NA	NA	NA
17	Research Botanical Areas	None	NA	NA	NA	NA	NA
18	Outstanding Natural Areas Designated by the National Park Service, the USFS, the BLM, or the State of Montana	None	NA	NA	NA	NA	NA
19	Designated Critical Habitat for State or Federally Listed Threatened or Endangered Species	None	NA	NA	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
20	Habitats Occupied at Least Seasonally by Resident State or Federally Listed Threatened and Endangered Species	None	NA	NA	NA	NA	NA
21	National Historic Landmarks and National Register Historic Districts and Sites	Butte-Anaconda National Historic Landmark (Railroad Only) First crossing by Alternatives 1B, 1C, 2A, 2B, 2C Second Crossing by Alternative 1C Third crossing by Alternative 2D Fourth crossing by Alternative 1C (Section 3.6)	Does not cross any of these areas	None	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
22	National Register Historic Districts and Sites Nominated to or Designated by SHPO (State Historic Preservation Office)	Eligible sites are on all alternatives in Zone 1 and listed sites on 1B and 1C but not 1A and 1D. Zone 2 has listed and eligible sites in each alternative except 2E. Zone 3 has eligible sites on all alternatives but no listed sites. Zone 5 has one listed and one eligible site on each alternative. Zones 4 and 6 have no listed or eligible sites. (Section 3.4)	Within the 1-mile wide study corridor, the APA crosses or passes near eight NRHP-listed and eligible sites. Less than 1 mile is crossed in total.	Ground disturbance and visual impacts.	Mitigation measures will be developed in a HPTP as set forth in the Draft PA.	$419,000	Altered viewsheds.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
23	Municipal Watersheds	Alternative 2A and the Fleecer LRO pass just to the east, but outside of the Butte Municipal Watershed (Section 3.12)	The APA does not cross any of these areas.	NA	NA	NA	NA
24	Streams and Rivers Listed in MFWP River Database as Being Class I or Class II Streams and Rivers	Class I rivers crossed by the alternatives include the Big Hole, Beaverhead, and Missouri. No Class II rivers are crossed (Sections 3.3 and 3.12)	Alternative 1D would cross the Missouri River; crossing would be about 0.6 miles long. Alternative 3C would cross the Beaverhead River at Link 39 north of Clark Canyon Reservoir. This crossing would be about 0.8 miles long.	Missouri River one to two structures on the 100-year floodplain The Beaverhead would be completely spanned.	Design structures to comply with all appropriate regulations including maximization of flood flows and debris passage and minimize placement of fill. Compliance with regulations will ensure no additional measures are required.	None.	Structure remains in the floodplain. Permanent impact to this site.
25	Streams Listed by the Department Pursuant to 75-5-702, MCA, that are not Attaining Designated Beneficial Uses of Water	All alternatives cross streams that are not attaining designated beneficial uses (Appendix C.12.1)	Alternatives1D and 2E would cross nine 303(d)-listed streams each; Alternative 3C would cross eight streams.	Construction-related contribution to impaired water quality. Long-term input of contaminants to degraded streams.	Comply with agency stipulations and TMDL requirements addressing pollutant loading.	None.	Minor ongoing input of contaminants.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
26	Highly Erodible Soils and Areas with Severe Reclamation Constraints, Defined as Soils Developed on Cretaceous Shales, Intrusives, and Certain Lacustrine Deposits	All alternatives cross areas of highly erodible soils and areas with severe reclamation constraints (Section 3.8).	Estimated length is approximately 13 miles for the agency-preferred alternative:1D crosses 1.6 miles;2E crosses 6 miles; 3C crosses 5.4 miles.	Disturbance, erosion, compaction, mixing.	Minimization of disturbance, erosion control, stockpiling, reclamation, and restoration.	$1.54 million (overlaps with mitigation for impacts to vegetation and steep slopes Nos. 10 and 28).	32 acres of moderate and high levels of residual effects.
27	Areas Where the Presence of the Facility Would be Incompatible with Published Visual Management Plans or Regulations Designed to Protect Viewsheds Adopted by Federal, State, or Local Governments	All alternatives are inconsistent with both BLM and USFS visual management standards at various locations (Section 3.11).	The APA would cross approximately 1.5 miles of BLM land where it would be inconsistent. It would cross no USFS land in Montana.	Changes in the seen landscape from ROW clearing, structures, and reflective conductors.	Structure surface treatments, non-reflective conductors, micro-siting structures.	Increase of 10 to 20 percent of steel cost for surface treatments and 1 percent of conductor cost. Additional towers could cost more than $250,000 each.	1.8 miles inconsistent with BLM visual management guidelines.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
28	The Winter Distribution of Elk, Deer, Moose, Pronghorn, Mountain Goat and Bighorn Sheep, and Areas Where They Concentrate During Severe Winters, as Identified by the MFWP, BLM, and USFS	All alternatives cross winter range for elk and mule deer. All alternatives in Zone 2 cross bighorn sheep winter range. All alternatives cross pronghorn winter range except 1A. All alternatives except 1D and 2E cross moose winter range (Section 3.3).	The APA would cross the following mileage of big game winter range: • Elk: 27 • Mule deer: 74 • Moose: 8 (Alternative 3C only) • Pronghorn: 90 • Big horn sheep: 4 (Alternative 2E only).	Disturbance, habitat fragmentation, habitat modification and loss, new access roads creating new public use.	Construction timing, footprint minimization, close new access roads, site restoration, implement wildlife monitoring/mitigation plan in agency stipulations.	$250,000 annually plus costs of site restoration (Number 26).	Habitat loss and fragmentation.
29	Major Elk Summer Security Areas, Which Are Any Forested Areas Greater than 0.5-Mile in Minimum Radius, More Than 0.5-Mile from an Existing Road, and Identified through Consultation with the MFWP, BLM, and USFS as Elk Summer Range	Revised MFWP GIS data (2008) does not designate elk summer range. Because of this, the amount of elk summer range crossed by alternatives cannot be calculated.	NA	NA	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
30	Habitats Occupied at Least Seasonally by Mountain Sheep and Mountain Goats as Identified through Consultation with the MFWP	All alternatives in Zone 2 cross bighorn sheep habitat. No other alternatives cross sheep or mountain goat habitat (Section 3.3).	Alternative 2E would cross approximately 4 miles of big horn sheep habitat.	Disturbance, habitat fragmentation, habitat modification and loss, new access roads creating new public use.	Construction timing, footprint minimization, close new access roads, site restoration, implement wildlife monitoring/mitigation plan in agency stipulations.	Included in other wildlife mitigation (Number 26).	Habitat loss and fragmentation.
31	Sage-grouse and Sharp-tailed Grouse Breeding Areas, the Winter Distribution of Sage-grouse and Sharp-tailed Grouse and Areas where they Concentrate During Severe Winters as Designated by the MFWP	Except for Alternative 1A, all alternatives pass within 3 miles of known sage-grouse habitat, core habitat, and leks (Section 3.3).	Alternative 1D would have about 5,900 acres within 3 miles, no core habitat and no leks. Alternative 2E would have about 28,000 acres within 3 miles, but no core habitat and no leks. Alternative 3C would have 239,000 acres of habitat and 119,000 acres of core habitat and five leks within 3 miles	Disturbance and avoidance, increased predation, habitat fragmentation, habitat modification.	Construction timing, footprint minimization, close new access roads, site restoration, implement wildlife monitoring/mitigation plan in agency stipulations.	Included in other wildlife mitigation (Number 26).	Habitat loss, fragmentation, increased predation.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
32	Areas with High Waterfowl Population Densities Including Prime Waterfowl Habitat That Have Been Identified through Consultation with the MFWP or USFWS as Waterfowl Concentration Areas or Low-level Feeding Flight Paths	All alternatives in Montana cross areas identified by MFWP as waterfowl use area (Section 3.3).	Alternative 1D would cross about 6 miles; Alternative 2E would cross about 14 miles; and Alternative 3C would cross about 18 miles of designated waterfowl use area.	Increased bird strike mortality.	Avian strike mortality study, bird flight diverters, offsite mitigation as determined by MDEQ and MFWP.	Included in other wildlife mitigation (Number 26).	Some level of annual mortality.
33	Any Undeveloped Land or Water Areas that Contain Known Natural Features of Unusual Scientific, Educational, or Recreational Significance	None	NA	NA	NA	NA	NA

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
34	Areas with Geologic Units or Formations that Show a High Probability of Including Significant Paleontological Resources	All alternatives cross formations that show a high probability of including significant paleontological resources (Section 3.9).	Alternatives 1D, 2E, and 3C would cross approximately 32, 3, and 15.4 miles of formations, respectively, with a high potential to yield significant fossils.	Disturbance and loss of significant fossils.	Worker training, surveys, exclusion areas, agency stipulations.	$96,000	Limited because significant finds would be inventoried prior to disturbance.
35	Sites That Have or May Have Religious or Heritage Significance and Value to Native Americans	Confidential; see Chapter 6 regarding Native American consultation.	NA	NA	NA	NA	NA
36	Standing Water Bodies, Including Any Lake, Wetland, Marsh or Reservoir; and Intermittent Water Bodies and Internally Drained Basins that Reach a Surface Area of 20 Acres or More at Least 1 Year out of 10	All alternatives would cross wetlands; none would cross lakes or reservoirs (Section 3.12).	The APA would cross about 3.6 miles of wetlands (1D and 3C, 1.3 miles each; 2E, 1 mile).	Fill, hydrologic disruption.	Minimize area affected, restore damaged wetlands, and provide onsite or offsite compensation as required by permitting agencies.	$425,000 (average of $118,000 per mile).	No net loss expected because of compensatory mitigation requirements.

Table 3.14-7. Areas Considered Sensitive by MFSA for the Proposed Project*

Number	Sensitive Area	Alternative Crossing Locations	Agency-Preferred Alternative				
			Length of Crossing	Impacts Anticipated	Mitigation Measures to be Applied	Estimated Cost of Mitigation	Impacts Remaining after Mitigation
37	Surface Supplies of Potable Water	None	NA	NA	NA	NA	NA
38	For Substations, Switching Stations, and/or Terminus Points, Active Faults	None	NA	NA	NA	NA	NA

* APA = agency-preferred alternative

Link 34 Crossover

The crossover link (Link 34) is a 5.4-mile-long link that would cross isolated, grassland-covered foothills and I-15 before connecting to Alternative 3C at Link 15-2c about 5 miles into Zone 3. Most of the land traversed by this link is sagebrush and agricultural. This crossover link would make no substantial difference in impacts to air and atmospheric values, socioeconomics, environmental justice, or human health and safety; therefore, these resource areas are not explicitly addressed in evaluating this link.

Wildlife. This link would be entirely within mapped mule deer and pronghorn winter range. It would cross no moose or bighorn sheep winter range. It would cross no waterfowl use areas, National Wildlife Refuges, or state wildlife management areas. Special status wildlife species identified along the crossover route include the Brewer's sparrow, McCown's longspur, ferruginous hawk, and sage thrasher. The crossover link largely avoids sage-grouse habitat. It is not within mapped core habitat, and no known leks are within 3 miles. The crossover passes through 2.7 miles of the Divide to Dillon wildlife movement corridor (American Wildlands 2008).

Cultural Resources. Eight previously identified sites are along the route followed by Link 34 route. This route also transects the two historic mining districts (Argenta and Utopia). Both of these districts would be considered sensitive visual resources that could be seen from this link. There are no sensitive view points for this link. The predictive model shows that about half the area within the 1-mile-wide study area (approximately 1,939 acres) could have a high site density.

Land Use and Recreation. Link 34 would cross primarily public land; approximately 5.3 miles of public land and 0.2 miles of private land would be affected. No residences would be located within 1,000 feet of Link 34. Just over 5 miles of the South Pioneers SRMA would be crossed by this link.

Soils, Geology, and Paleontology. There would be about 11 acres of permanent impacts to soils from use of this crossover link. Link 34 would cross about 5.0 and 0.3 miles of soils that are ranked moderately and highly sensitive, respectively. However, after mitigation and reclamation actions, there would be no moderate or high levels of residual effects. Link 34 would cross about 1.6 miles of soils formed from Cretaceous formations; this would result in disturbance to about 17 acres, and after reclamation, permanent impacts to about 3 acres of Cretaceous-formed soils. All formations crossed by this link have a low potential to yield important fossils.

Vegetation. This crossover would cross primarily sagebrush habitat on its way between the alternatives. Permanent loss of sagebrush habitat is predicted at about 12 acres, and in the short- and long-term, an additional 59 acres would be impacted. A small amount of grasslands would also be impacted. Several special status plant species are likely or somewhat likely to occur along this link, but none have been documented in the area. An estimated 94 acres of grazing allotments would be impacted by this link. The crossover link crosses the Frying Pan (#10131), Stonehouse (#30005), and Bell Ranch (#20197) grazing allotments.

Visual Resources. This link would not pass within the foreground (or within 1 mile of) any residences, and no sensitive viewing areas have been identified within the foreground (0 to 0.5 mile) to middleground (0.5 to 3 mile) zones. Its entire route would pass through BLM land managed under VRM Class III.

Water and Wetland Resources. This link would require new roads to cross three intermittent streams. There do not appear to be any wetland/riparian resources in the area where this link would be located.

Link 15-2c

The 8.1-mile-long Link 15-2c is included in the analysis of Alternative 3A. In selection of the agency-preferred alternative, this link was chosen because it was shorter than Link 38 (which is 10.3 miles long)

and thereby minimizes overall disturbance and avoids sage-grouse habitat further east. Link 15-2c has been analyzed in detail in earlier sections; the following is a summary of major issues associated with this specific link. There is no substantial difference between Link 15-2c and Link 38 for Air and Atmospheric Values, Human Health and Safety, Socioeconomics, or Environmental Justice.

Wildlife. Neither Link 15-2c nor Link 38 would cross any big game winter range, waterfowl use area, wildlife refuges, or state wildlife management areas. Link 15-2c would cross about 1.5 miles more pronghorn winter habitat than Link 38. Link 15-2c would have similar impacts to sage-grouse habitat as Link 38, but is somewhat preferable because it is shorter and is closer to the edge of sage-grouse habitat than Link 38. Link 15-2c would cross about half the distance of wildlife movement corridor as Link 38.

Land Use and Recreation. Both Link 15-2c and Link 38 would be primarily on public land. Use of Link 15-2c instead of Link 38 would result in fewer roads being constructed on public lands (less than 1 mile versus approximately 10 miles). The shorter link would also cross only 1 mile of SMA instead of the 2.7 miles crossed by Link 38. However, Link 15-2c would be within 300 feet of one residence and within 1,000 feet of another. Neither link would cross an appreciable distance of agricultural land.

Vegetation This link would impact approximately 102 acres of vegetation. Link 38 would affect about 159 acres of vegetation. The primary differences between Link 15-c and Link 38 is in the amount of temporary impact caused by the transmission line, permanent impact associated with roads. Sagebrush is the primary cover type affected by both routes, though Link 15-2c would also impact grasslands. There would be considerably more new roads required for Link 38 than Link 15-2c. Both options cross three grazing allotments: Red Spring (#10120), Frenchie (#10121), and Stonehouse (#30005). Link 38 crosses two documented populations of a special status plant species. Link 15-2c comes relatively close to, but does not cross, a documented population of a different special status plant species. Because it is shorter and would affect a smaller amount of vegetation and fewer special status plant species, Link 15-2c has a smaller adverse impact on vegetation resources in this area.

Visual Resources. Approximately 0.75 mile of Link 15-2c would cross the Argenta historic mining district near Rattlesnake Creek on BLM land with a VRM of Class III. Most of this link is categorized as having moderate to low levels of visual impact. There is 0.4 miles near a cluster of residences that is considered to have a high level of visual impact. This link would pass more residences than Link 38, including 3 within the foreground, 4 in the middleground, and a total of 78 within 3 miles. Link 38 would not pass within 0.5 miles of any residences and within 3 miles of 48 residences.

Water and Wetland Resources This link would affect approximately 0.7 acres less riparian/wetland area than Link 38. Link 15-2c would have no streams within 0.25 mile of the new access roads and overland routes compared to 5.7 miles for Link 38; therefore, Link 15-2c would result in a smaller impact to water and wetland resources than Link 38.

3.14.4 Preliminary Significance Determination

A significance discussion is required by 40 CFR 1502.16. The preliminary determination of significance presented here is based on a variable resource-specific threshold of substantial effect. No agency-approved quantitative criteria are identified for this determination of a substantial effect and such an effect could be either beneficial or adverse. This determination is based on assessment of the potential for the proposed project to generate changes in the natural or social environments and the magnitude of those changes in relation to the existing conditions. If the impact was identified to have a substantial effect, then it was considered to have a potentially significant impact. The final determination of significance is left to the authorized officers for each respective ROD for the federal agencies or the MDEQ Certificate of Compliance under the MFSA.

The following discussion uses three levels of significance. Potentially significant impacts could be either beneficial or adverse and would constitute a substantial change in the existing conditions. Less-than-significant impacts could also be adverse or beneficial and, while they would result in a change in existing conditions, the magnitude of that change was determined to not be substantial. Proposed project elements with no impact are those that do not result in a change in existing conditions. The final category of impact is those impacts that after the application of agency stipulations and additional mitigation measures remain a substantially adverse impact on the existing conditions; these are considered significant and unavoidable.

Because of the size of the proposed project and the sensitivity of many resources, most alternatives in most zones are considered to have a potentially significant impact to resources (Table 3.14-8). Some notable exceptions are Air and Atmospheric Values where compliance with state and federal air quality standards would ensure that any impacts remain less than significant. Most potentially significant impacts would be reduced to levels no longer considered potentially significant through the application of the agency stipulations and additional mitigation measures (Table 3.14-9). Some of these mitigations are actual processes that will take some time to implement; however, the result is expected to be an accurate and appropriate mitigation of impacts. Examples of this process include mitigation for bird-strike, sage-grouse habitat loss, and big game movement. The only impacts that remain significant and unavoidable after implementation of mitigation are impacts to visual resources, visual cultural resources, vegetation, soil resources along Alternative 1A, and quality of life related impacts.

Table 3.14-8. Preliminary Significance of Impacts of the Proposed Project Before Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Air and Atmospheric Values																				
Generated Particulate and Gaseous Emissions	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
PM_{10} Non-attainment Areas	LTS	PS	PS	LTS	LTS	LTS	LTS	PS	LTS	LTS	NI	NI	NI	NI	NI	LTS	LTS	LTS	LTS	LTS
GHG Emissions	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Ozone Generation from Corona Activity	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Closest Distance Class I Areas	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Wildlife																				
Big Game Winter Range	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Greater Sage-grouse	NI	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Waterfowl Use Areas	PS	PS	PS	PS	PS	LTS	LTS	PS	LTS	PS	PS	PS	PS	PS	NA	NA	NA	NA	NA	NA
Wildlife Movement Corridors	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Species of Concern	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Sensitive Fish Species	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	PS	PS	PS	NI	NI	NI	NI	NI	NI

Table 3.14-8. Preliminary Significance of Impacts of the Proposed Project Before Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Cultural Resources																				
Impacts to Sites	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Visual Impacts to Critical Cultural Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Human Health and Safety																				
EMF at Edge of ROW	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Noise at Edge of R OW	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
TV and Radio Interference	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Other Human Safety Elements	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Land Use and Recreation																				
Conservation Easements and Sites	NI	PS	PS	NI	NI	PS	PS	PS	NI	PS	NI	PS	PS	NI	NI	NI	NI	NI	NI	NI
Private Land	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Public Land	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Residences	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Agricultural Land	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	NI	PS	PS	PS	PS	PS
Special Management Areas	PS	PS	PS	PS	PS	LTS	LTS	NI	LTS	NI	PS	PS	PS	PS	PS	PS	PS	PS	PS	LTS
Airports	PS	PS	PS	PS	PS	PS	PS	PS	PS	NI	PS	PS	PS	PS	NI	NI	PS	PS	PS	NI
Recreational Resources	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS

Table 3.14-8. Preliminary Significance of Impacts of the Proposed Project Before Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Socioeconomics																				
Employment	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Income/Population	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	LTS	LTS	LTS	LTS	LTS
Housing	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Property Taxes	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB	PB
Value of Lost Grazing Land	PS	PS	PS	PS	PS	LTS	LTS	PS	PS	PS	PS	PS	PS	PS	LTS	PS	PS	PS	PS	PS
Value of Lost Cropland	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	LTS	PS	PS	PS	LTS
Increase in Agricultural Operating Cost	PS	PS	PS	PS	PS	PS	PS	LTS	PS	LTS	PS	PS	LTS	LTS	NI	LTS	PS	PS	PS	PS
Property Value	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Quality of Life Metrics	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Soils and Geology																				
Risk Factors (Faults, Landslides, Liquefaction)	LTS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Soil Impacts	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Paleontology																				
Fossil-bearing Formations	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	NI	PS	PS	PS	PS	PS
Vegetation																				
Direct Impact	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Grazing Allotments	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Table 3.14-8. Preliminary Significance of Impacts of the Proposed Project Before Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Special Status Plants	LTS	PS	PS	PS	PS	PS	PS	PS	LTS	PS	PS	PS	PS	PS	PS	PS	LTS	PS	LTS	LTS
Visual Resources																				
Visual Impacts (Miles, Residences, and viewing areas)	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
BLM VRM Consistency	NI	NI	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
USFS SIO/VQO Consistency	PS	PS	PS	NI	NI	PS	PS	PS	NI	NI	NI	NI	NI	NI	PS	NI	NI	NI	NI	NI
Water and Wetland Resources																				
Stream Crossings	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Wetland Impacts	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Environmental Justice																				
Low-Income Areas	PS	PS	PS	NI	NI	PS	PS	PS	NI	NI	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Minority Population Areas	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	PS	NI	PS

* PS = potentially significant adverse; PB = potentially significant beneficial; LTS = Less than significant; NI = no impact; APA = agency-preferred alternative; NA = not applicable

Table 3.14-9. Preliminary Significance of Impacts of the Proposed Project After Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Air and Atmospheric Values																				
Generated Particulate and Gaseous Emissions	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
PM_{10} Non-attainment Areas	–	LTS	LTS	–	–	–	–	LTS	–	–	–	–	–	–	–	–	–	–	–	–
GHG Emissions	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Ozone Generation from Corona Activity	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Closest Distance Class I Areas	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wildlife																				
Big Game Winter Range	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Greater Sage-grouse	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Waterfowl Use Areas	LTS	LTS	LTS	LTS	LTS	–	–	LTS	–	LTS	LTS	LTS	LTS	LTS	–	–	–	–	–	–
Wildlife Movement Corridors	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Species of Concern	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Sensitive Fish Species	–	–	–	–	–	–	–	–	–	–	–	LTS	LTS	LTS	–	–	–	–	–	–

Table 3.14-9. Preliminary Significance of Impacts of the Proposed Project After Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Cultural Resources																				
Impacts to Sites	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Visual Impacts to Critical Cultural Resources	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
Human Health and Safety																				
EMF at Edge of ROW	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Noise at Edge of R OW	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
TV and Radio Interference	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other Human Safety Elements	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Land Use and Recreation																				
Conservation Easements and Sites	–	LTS	LTS	–	–	LTS	LTS	LTS	–	LTS	–	LTS	LTS	–	–	–	–	–	–	–
Private Land	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Public Land	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Residences	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Agricultural Land	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	LTS	LTS	LTS	LTS
Special Management Areas	LTS	LTS	LTS	LTS	LTS	–	–	–	–	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–
Airports	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	LTS	LTS	LTS	–	–	LTS	LTS	LTS	–

Table 3.14-9. Preliminary Significance of Impacts of the Proposed Project After Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Recreational Resources	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Socioeconomics																				
Employment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Income/Population	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Housing	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Property Taxes	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB	SB
Value of Lost Grazing Land	LTS	LTS	LTS	LTS	LTS	–	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	LTS	LTS	LTS	LTS
Value of Lost Cropland	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	LTS	LTS	LTS	–
Increase in Agricultural Operating Cost	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	–	LTS	LTS	–	–	–	–	LTS	LTS	LTS	LTS
Property Value	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
Quality of Life Metrics	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
Soils and Geology																				
Risk Factors (Faults, Landslides, Liquefaction)	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Soil Impacts	SU	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Paleontology																				
Fossil-bearing Formations	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Table 3.14-9. Preliminary Significance of Impacts of the Proposed Project After Mitigation*

Issue/Impact Area	Zone 1					Zone 2					Zone 3				Zone 4	Zone 5				Zone 6
	1A	1B	1C	1D	APA	2A	2B	2C	2D	2E APA	3A	3B	3C	APA	4A APA	5A	5B	5C	5D APA	6A APA
Vegetation																				
Direct Impact	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
Grazing Allotments	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Special Status Plants	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	–	LTS	–	–
Visual Resources																				
Visual Impacts (Miles, Residences, and viewing areas)	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU
BLM VRM Consistency	–	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
USFS SIO/VQO Consistency	LTS	LTS	LTS	–	–	LTS	LTS	LTS	–	–	–	–	–	–	LTS	–	–	–	–	–
Water and Wetland Resources																				
Stream Crossings	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Wetland Impacts	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Environmental Justice																				
Low-Income Areas	LTS	LTS	LTS	–	–	LTS	LTS	LTS	–	–	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Minority Population Areas	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	LTS	–	LTS

* - = mitigation not required; LTS = less than significant; SU = significant, unavoidable, and adverse; SB = significant and beneficial; APA = agency-preferred alternative

Visual resources are considered to be significantly and unavoidably impacted because regardless of how the proposed project is located, colored, or otherwise screened, it remains a large linear feature across the landscape that will be visible from a variety of areas and sensitive receptors. For similar reasons, impacts to cultural resources from the visual aspect of the proposed project are also considered significant and unavoidable.

Impacts to vegetation are considered significant and unavoidable for two reasons: (1) in some areas, clear cutting of forests would create substantial changes in vegetation that will not be recovered over the life of the proposed project, and (2) construction-related disturbance would create conditions ideal for invasion by noxious weeds. While a weed control plan is part of the POD, it may not completely prevent infestation. Species such as cheatgrass, field bindweed, and knapweed can easily come into areas disturbed by construction of the proposed project not only via project-related avenues, but from other routes including cattle, recreational users, wildlife, and wind. Not only do they degrade existing vegetation conditions, but substantial infestations can change the fire regimes of an area, substantially altering vegetation.

Impacts to soil resources along Alternative 1A were considered significant and unavoidable because more than 100 acres of residual impacts would remain after implementation of the best reclamation and restoration actions practicable.

Quality of life impacts relate to the perceived impact of the proposed project on people. Because the entire impact hinges on the perception of the changes by people, complete mitigation to a level considered less than significant is not practicable. Mitigation measures include education and compensation, but at some point the perception of the proposed project's impacts on an individual's quality of life is a decision made by that individual and something that cannot be mitigated.

The agency-preferred alternative would generally have fewer potentially significant impacts than corresponding zone alternatives. After mitigation, the significant unavoidable impacts from the agency-preferred alternative would be limited to visual resources, vegetation, and quality of life issues.

3.14.5 Environmental Effects of Possible Plan Amendments

[Note Revised discussion to come following agency direction and decisions. Will be reviewed separately]