

July 2008

NorthWestern Energy

Mountain States Transmission Intertie *ENVIRONMENTAL REPORT*

VISUAL RESOURCES TECHNICAL REPORT

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112100

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1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

NorthWestern Energy (NorthWestern) proposes to construct, operate and maintain the MSTI 500kV transmission line to address the requests for transmission service from customers and relieve constraints on the high-voltage transmission system in the region. The new transmission line would begin at Townsend Substation which would be constructed in southwestern Montana about five miles south of Townsend, Montana, east of U.S. Highway 287 (US 287) in Broadwater County. The line would proceed south into southeastern Idaho connecting to Idaho Power Company's (IPCO) existing Midpoint Substation, 12 miles northeast of Jerome, Idaho. Figure 1.1-1 shows the substation locations and the alternative routes being considered.

The major projects components of the proposed action include the 500kV alternating current (AC) transmission line, a new Townsend Substation; construction of a new facility next to the existing Mill Creek Substation near Anaconda, Montana for the installation of a bank of phase shifting transformers and modifications to the existing Midpoint Substation in Idaho. Brief descriptions of the major project components are presented in the following sections.

1.1.1 NEW 500kV TRANSMISSION LINE

The MSTI 500kV AC transmission line would interconnect the new Townsend Substation with IPCO's existing Midpoint Substation. The MSTI 500kV transmission line would be between 400 and 430 miles long.

Various alternative route links have been identified as part of the siting study for the transmission line. During the route selection process, some of these alternative route links were combined into a limited number of end-to-end route and subroute alternatives. A preferred route was selected based on environmental and other considerations. Alternative route links, shown in Figure 1.1-1, cross Silver Bow, Jefferson, Broadwater, Deer Lodge, Beaverhead, and Madison counties in southwestern Montana, and Clark, Jefferson, Blaine, Butte, Bingham, Bonneville Power, Minidoka, Lincoln, and Jerome counties in southeastern Idaho. The links cross private, state (Idaho and Montana) and federal (primarily Bureau of Land Management [BLM] and U.S Forest Service [USFS]) land. There are a total of 1,150 miles of alternative route links, 582 miles in Montana and 568 miles in Idaho.

The MSTI 500kV transmission would be constructed mainly on guyed V steel lattice structures approximately 125 feet high. Less frequently, self-supporting steel lattice structures or self-supporting tubular steel structures approximately 125 feet high would be used. The guyed V structure would be used for most tangent segments of the line. Self-supporting steel lattice structures would be used in mountainous areas and at points where a line changes direction or terminates. Tubular steel monopoles may be used in areas of narrow right-of-way or where permanent land disturbance or the amount of land required for the structure must be minimized (e.g., agricultural land, developed and urban land, and some river and perennial stream crossings). The land permanently required for the structures would vary depending on structure type and terrain, ranging from 100 square feet for steel monopoles to 22,500 square feet for the guyed V structures. An area of approximately 200 by 200 feet (0.9 acre) per structure may be temporarily disturbed during construction.

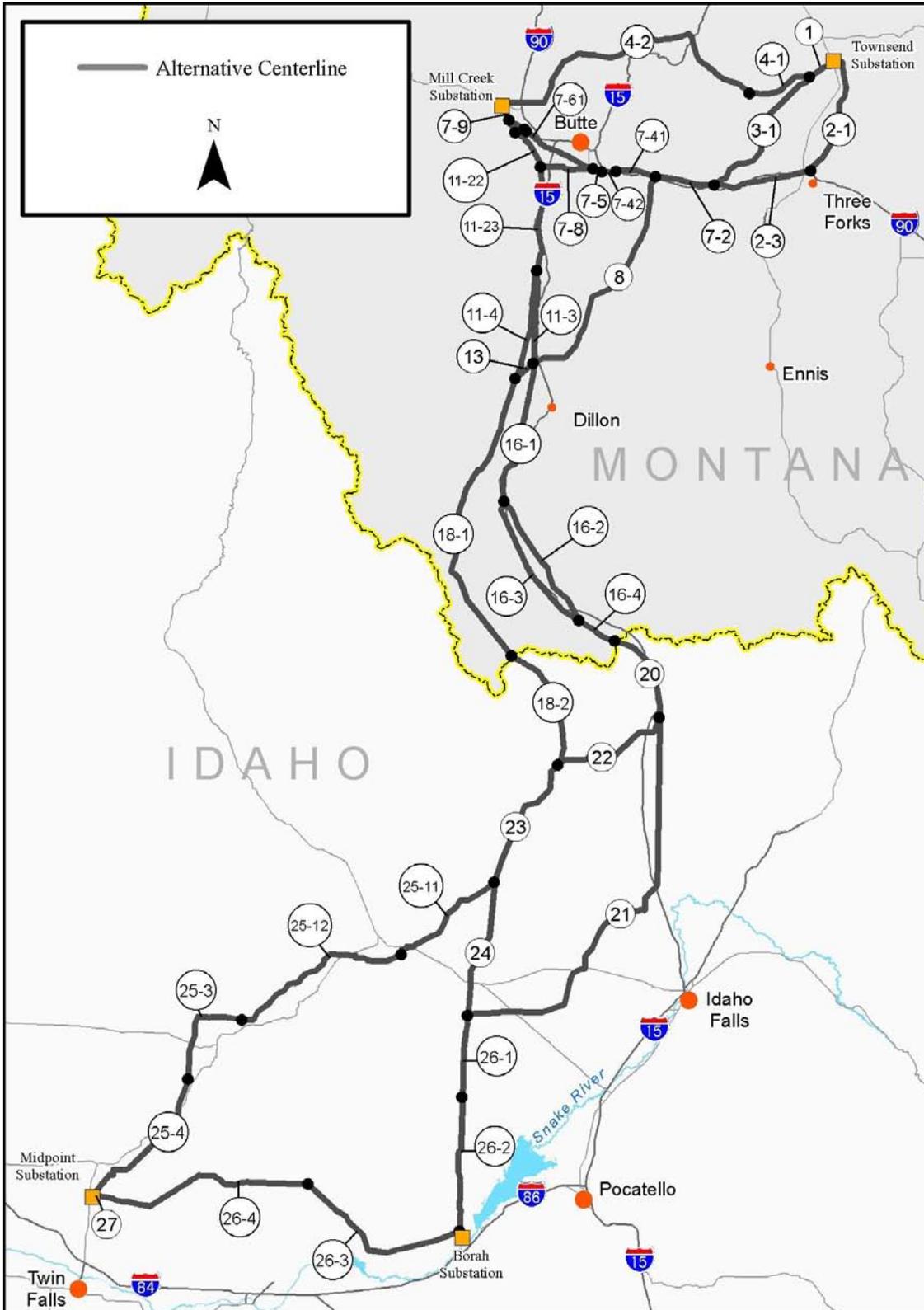


Figure 1.1-1 Project Area and Alternative Transmission Line Routes

The required right-of-way width is 220 feet and the average span length between the transmission structures would be approximately 1,400 feet (4 per mile) for the guyed V structures, 1,200 feet (4 per mile) for the self-supporting steel lattice structures, and 900 feet (6 per mile) for the self-supporting tubular steel monopole structures.

Access along the transmission line right-of-way would include using existing improved roads, using existing roads that require improvement, and building new roads in flat, sloping, steep, or very steep terrain. Permanent new roads would be graded to a travel service width of 14 feet.

In addition, during construction of the transmission line there would be temporary pulling and tensioning sites, material staging sites, and concrete batch plants.

1.1.2 NEW TOWNSEND SUBSTATION

The new Townsend 500kV substation would be located in southwestern Montana, five miles south of Townsend, Montana, east of US 287 in Broadwater County, Montana. The current land use of the site is center-pivot irrigation. The parcel contains agricultural outbuildings and a residence, located about 1,030-feet south of the substation site. Adjacent land use is a mixture of center-pivot irrigation and pasture. The total size of the Townsend Substation site would be approximately 52 acres.

1.1.3 MILL CREEK SUBSTATION

A new facility would be built adjacent to NorthWestern's existing Mill Creek Substation, located approximately three miles south of Anaconda, Montana. The proposed facility would be built to accommodate a bank of phase shifting transformers and other series capacitor banks and associated substation equipment. The MSTI 500kV line would not connect directly to or require modification of the existing substation. Engineering studies will be completed to determine the final layout of this new facility.

1.1.4 MIDPOINT SUBSTATION MODIFICATIONS

IPCO's existing Midpoint Substation located 10 miles north of Interstate 84 (I-84) in Jerome County, Idaho would be modified to accommodate the new MSTI 500kV transmission line. Engineering studies with IPCO will be completed to determine the ultimate modifications required at the Midpoint substation.

1.2 VISUAL RESOURCES OVERVIEW

POWER Engineers, Inc. (POWER) prepared this visual resources study as part of the environmental studies for the proposed NWE MSTI Project (Project). This report is composed of the visual resources inventory and potential impact assessment data for the Project's proposed 500kV transmission line and proposed new or modified substations.

The study has been conducted in compliance with the BLM Visual Resource Management (VRM) Inventory and Contrast Rating System (VRM Manual 1986a and b), the USFS Scenery Management System (USFS 1995), and the requirements of the Montana Major Facility Siting Act (MFSA) Circular-2. The visual resource inventory consisted of a scenic quality or visual integrity evaluation,

a viewer sensitivity analysis, distance zone establishment and visibility analysis, and an inventory of the regulatory framework for jurisdictions crossed by the alternative route links. Site reconnaissance was conducted during September and October of 2007, and May of 2008 for the purposes of identifying visual resources in the project area and consulting with appropriate agencies.

The purpose of this report is to document existing visual resources and potential impacts of the proposed 500kV transmission line. Visual resources were inventoried within the study area centered along the alternative route links. A 10-mile wide study area (5 miles on each side of the centerline of each alternative route link) was studied for visual resources.

1.3 RESOURCE ISSUES

Issues involving potential impacts to visual resources within the study area are described in the results sections of this document. Direct, long term impacts are expected in areas where alternative corridors cross areas of outstanding scenic quality or visual integrity; where corridors are in the vicinity of cities, towns, communities, and other population concentrations; and where corridors are near or cross sensitive recreation and transportation viewpoints. Concern for the visual effects associated with the construction and operation of the Project include potential impacts to:

- Views from residences and communities – rural residences and communities dispersed throughout the study area.
- Views from parks, recreation, and preservation areas – potential views from existing and proposed facilities and other developed sites including national monuments, state parks, national natural landmarks, proposed wilderness areas, and other public and private recreation areas.
- Views from sensitive transportation corridors – backcountry byways, scenic byways, and other sensitive travel routes.
- Views from sensitive cultural sites – National Historic Landmarks and other National Register sites or districts (Refer to the Cultural Resources Technical Report for mapping of these sites and discussion of their visual sensitivity).
- Visual resource management – compatibility with BLM and USFS visual management designations.
- Scenic quality – impacts affecting the inherent aesthetic value of the landscape.

1.4 STUDY PERSONNEL

The visual resource study team was comprised of several landscape architects and visual resource analysts: Jim Jensen – project manager, Darin Gilbert– principal investigator, Gina Fegler – principal investigator, and Steve Anderson – design technician, all of POWER Engineers; and Mr. Jim Mihan – visual resource analyst, of Beck and Baird. In addition, the team worked with recreation planners and landscape architects from the BLM and USFS to collect and interpret data.

Jim Jensen, POWER Engineers project manager for the MSTI environmental studies, participated in developing the visual resource study methodology and reviewed inventory results. He has conducted or participated in visual resource analysis and photo simulations on many transmission line projects throughout the western United States, in addition to conducting numerous other recreation,

rehabilitation, and environmental studies throughout the West. Mr. Jensen has a Bachelor's degree in Landscape Architecture and a Master's degree in Environmental Studies, and is a registered Landscape Architect in Arizona, New Mexico, Montana, California, and Idaho.

Darrin Gilbert was a principal investigator for the visual resource study. His responsibilities included coordination of data collection, input and review, and agency contacts. Mr. Gilbert assisted in the preparation of the Preliminary Siting Study for MSTI. Mr. Gilbert has Bachelor's and Master's degrees in Landscape Architecture from Syracuse University.

Gina Fegler is the current principal investigator for the visual resource study. Her responsibilities included coordination of data collection, input and review, and agency contacts. Ms. Fegler has a Bachelor of Landscape Architecture degree from Iowa State University and is a registered Landscape Architect in Idaho.

Jim Mihan was an analyst and investigator for the visual resource study. He assisted with data inventory and review for the visual resources inventory. Mr. Mihan has a Bachelor's degree in Landscape Architecture from the University of Idaho and is a registered Landscape Architect in Idaho.

Steve Anderson was the design technician responsible for the computer modeling and detailing of visual simulations. Mr. Anderson is a 3D modeling and animation specialist with experience in CAD design, 3D drafting and computer animations for a variety of projects.

2.0 REGULATORY FRAMEWORK

2.1 FEDERAL LAWS AND REGULATIONS

Federal agencies with jurisdiction over public lands in the study area include the BLM, the USFS, the Department of Energy (Idaho National Laboratory), the USDA (Sheep Experiment Station), and the Bureau of Reclamation. The BLM and the USFS have regulations pertaining to visual resources. BLM lands are administered by BLM Resource Management Plans (RMP) or BLM Management Framework Plans (MFP), while USFS lands are administered by USFS Forest Plans.

The BLM and the USFS typically identify visual management objectives in their respective planning documents. Visual Resource Management Objectives (BLM), Visual Quality Objectives (USFS), or Scenic Integrity Objectives (USFS) were provided by applicable agencies.

2.1.1 BUREAU OF LAND MANAGEMENT

2.1.1.1 Montana

BUTTE FIELD OFFICE

Headwaters Resource Management Plan

The Headwaters RMP (BLM 1984) does not identify VRM Classes outside of areas with high visual resources such as river corridors and Wilderness Study Areas (WSA). Classes may have been assigned in areas where a specific project was planned. The plan states that prior to any management activities, a Visual Resource Inventory shall occur, and an Inventory Class assigned.

DILLON FIELD OFFICE

Dillon Resource Management Plan

The Dillon RMP (BLM 2006) identifies goals (broad statements of desired outcomes) and objectives (specific desired conditions). Aside from the establishment of VRM Classes, the plan also identifies specific actions to manage scenic values in accordance with the objectives established for VRM. Classes defined in the VRM system. These actions include:

- Use the visual resource contrast rating system during project level planning to determine whether or not proposed activities will meet VRM objectives. Identify mitigation measures to reduce visual contrasts and prepare rehabilitation plans to address landscape modifications on a case-by-case basis.
- Any project design features or mitigation measures identified to address visual resource management concerns will be monitored to ensure compliance with established VRM Classes. Where appropriate, monitoring will include the use of the visual contrast rating system, described in BLM Manual 8400, during project review and upon project completion to assess the effectiveness of project design features and any mitigating measures.

- Protect the relevant and important scenic values in the Centennial Mountains Area of Critical Environmental Concern (ACEC) by incorporating landscape design principles into vegetation treatments.
- Protect the relevant and important scenic values in the Muddy Creek/Big Sheep Creek ACEC by applying special provisions if necessary to protect scenic values during any project activities.
- Other standard management provisions that will assist in protection of the relevant and important values include management of the area under VRM Class II.

2.1.1.2 Idaho

UPPER SNAKE FIELD OFFICE

Medicine Lodge Resource Management Plan and Environmental Impact Statement

The Medicine Lodge RMP (BLM 1985) states that visual resources will be evaluated as a part of project planning and that stipulations may be applied on a project basis to maintain existing VRM Classes. The Draft Environmental Impact Statement (EIS), Section 3 – Affected Environment, states that the resource area contains approximately 134,000 acres (26%) to be managed as VRM Class II, with the remaining 374,300 acres (74%) to be managed as VRM Class III. It notes that VRM Class II landscapes occur in areas with high scenic quality that are in highly visible locations and lists the general locations of VRM Class II areas.

Big Desert Management Framework Plan

The Big Desert MFP (BLM 1981a) establishes VRM Classes. The plan identifies an objective to maintain and/or enhance the scenic quality of the public land contiguous to major travel routes and special recreation areas including: waterway corridors, recent lava flows, and unique or special management areas (i.e., China Cup Butte, Big Southern Butte).

Big Lost Management Framework Plan

The Big Lost MFP (BLM 1983) establishes VRM classes.

Little Lost/Birch Creek Management Framework Plan

The Little Lost/Birch Creek MFP (BLM 1981b) notes that VRM classes have been designated. Recreation Final Decision 7 in the plan calls for protection of the visual integrity of public lands considered backcountry or environmentally sensitive within the Planning Unit (PU) by prohibiting utility lines and other major modifications that do not conform to VRM contrast rating criteria on the Lemhi Foothills Scenery Quality Unit, southwest of Birch Creek.

SHOSHONE FIELD OFFICE

Craters of the Moon Proposed Management Plan

The Craters of the Moon Proposed Management Plan (BLM 2005) identifies perpetuating scenic vistas and open western landscapes for future generations as one of the purposes of the Monument. The plan establishes VRM classes, but no specific actions to manage scenic values are identified. The plan is in the process of revision.

Monument Resource Management Plan

The Monument RMP (BLM 1986c) does not identify VRM classes or any scenic value management actions or objectives.

BURLEY FIELD OFFICE

Monument Resource Management Plan

The Monument RMP (BLM 1986c) does not identify VRM classes or any scenic value management actions or objectives.

2.1.2 FOREST SERVICE

2.1.2.1 Montana

BEAVERHEAD-DEERLODGE NATIONAL FOREST

In Montana, the Beaverhead-Deerlodge National Forest (BDNF) is managed under two documents: the Deerlodge Forest Plan (USFS 1987a) and the Beaverhead National Forest Final Environmental Impact Statement (EIS)/Land and Resource Management Plan Revision (USFS 1986a). The BDNF is currently in the process of combining the two existing plans into one revised management plan for the entire BDNF. The BDNF Revised Draft Forest Plan and FEIS (USFS 2008) were issued in January of 2008. A date for issue of the Record of Decision and Final Forest Plan has not been set.

Deerlodge Forest Plan

The Forest Plan establishes Visual Quality Objectives (VQO) based on Recreation Opportunity Spectrum (ROS) Classes and resource sensitivity, with Management Area (MA) percentage coverage (i.e., 95% Preservation, 5% Retention) based on Figure II-4 of the Plan or as prescribed by the goals and standards detailed in the "Management Area Descriptions" (Section III of the Plan).

Beaverhead National Forest Final EIS/Land and Resource Management Plan Revision

The Beaverhead Plan provides minimum Scenic Integrity Objectives (SIO) for each management area, and requires further analysis to develop site-specific SIOs in project analysis using a Scenic Concern Level List and a Scenic Integrity Level Matix.

Beaverhead-Deerlodge National Forest Revised Draft Forest Plan and Final EIS

The Beaverhead-Deerlodge National Forest Revised Draft Forest Plan (USFS 2008) identifies goals, objectives, and standards on a forest-wide level. Visual quality at the forest-wide level is addressed in the scenic resources section of Chapter 3. The general goal for scenery management is for scenic resources to reflect ecosystem diversity, enhance the recreation settings, and contribute to the quality of life of local residents and communities. Two objectives, to map forest-wide scenic SIOs within one year and to identify and rehabilitate areas that do not meet the SIO, are identified. Four specific standards are identified.

Standard 1 – Where no minimum SIO forest-wide are identified by landscape or management area – prior to the completion of a forest-wide scenic integrity map – the objectives for scenery shall be determined by procedures outlined in the Landscape Aesthetics Handbook, Agricultural Handbook No. 701. The analysis shall use the Scenic Concern Level List in Appendix A of the Forest Plan, scenic attractiveness geographic information system (GIS) layer, and the Scenery Integrity Level Matrix.

Standard 2 – Projects in non-motorized and summer backcountry allocations will be designed to meet a minimum SIO of moderate. Use the Scenic Concern Level List in Appendix A of the Forest Plan, Forest-wide Scenic Attractiveness GIS layer, and Scenic Integrity Level Matrix to determine a site specific SIO. Project-level analysis may determine a higher SIO to be appropriate.

Standard 3 – Projects in designated Wilderness Areas and recommended Wilderness Areas will be designed to meet a SIO of very high.

Standard 4 – Projects in foreground areas of scenic byways, national scenic trails or wild and scenic rivers will be designed to meet the SIO of high.

Additional standards are set for specific management areas in Chapter 4, including minimum SIOs for some management areas.

HELENA NATIONAL FOREST

The Helena National Forest Plan (USFS 1986b) identifies goals, objectives, standards, and a Schedule of Management Practices, and is applied at two geographical levels (Forest-wide Goals and Standards and Management Area Goals and Standards). Visual Quality at the forest-wide level is addressed in the Objectives portion of Section II Forest-Wide Management Direction. The focus of visual quality maintenance at the Forest-wide level is management of areas seen from identified visually sensitive roads and trails. Forest-wide acreages for each VQO are noted in Appendix A of the Forest Plan. Sensitive Viewing Areas in the forest are identified in Appendix B. The Forest Plan establishes a VQO for each Management Area based on the management goals, resource potentials, and limitations specific to each Management Area, as detailed in Section III Management Area Direction.

2.1.2.2 Idaho

CARIBOU-TARGHEE NATIONAL FOREST

The Targhee Revised Forest Plan (USFS 1997) identifies goals, objectives, standards and guidelines, and is applied at three geographical levels (Forest-wide Standards and Guidelines, Subsection Direction, and Management Prescription). Visual quality at the forest-wide level is addressed in the recreation section of the Forest Use and Occupation Standards and Guidelines. The focus of visual quality maintenance in Forest-wide Standards and Guidelines for Recreation is on timber harvest. All areas of the forest are allocated to one Management Prescription. Three visual resource prescriptions are identified for the forest: 2.1.2 Visual Quality Maintenance, 5.2.1 Visual Quality Improvement, and 5.2.2 Visual Quality Maintenance. VQOs have been established across the forest, and were available in digital format.

2.1.2 Visual Quality Maintenance – Emphasizes maintaining the existing visual quality within major travel corridors with high quality natural vistas, while allowing for livestock production and other compatible commodity outputs.

5.2.1 Visual Quality Improvement – Emphasizes improving or maintaining visual opportunities for visitors along major travel corridors through heavily timbered areas while allowing livestock production, timber harvest and other compatible commodity outputs. The purpose of this prescription is to maintain or create openings in timber stands to improve scenic vistas.

5.2.2 Visual Quality Maintenance – This prescription also emphasizes maintaining the existing visual quality within major travel corridors with high quality natural vistas while allowing livestock production, limited timber harvest and other compatible commodity output.

SALMON-CHALLIS NATIONAL FOREST

The Challis National Forest Land and Resource Management Plan (USFS 1987b) is applied at two geographical levels, Forest-wide and Management Areas. The Forest Plan establishes Forest-wide Goals and Objectives, Standards and Guidelines, and Desired Future Conditions; and Management Area prescriptions, management direction, and standards and guidelines. The Forest Plan establishes forest-wide acreages for each VQO based on a visual resource inventory. Specific management direction codes pertaining to visual quality in specific areas are established for Management Areas in the individual Management Prescriptions.

2.2 STATE REGULATIONS

State regulations for visual resources are contained in MFSA. Section 3.4(9) of MFSA requires an overview of landscape aesthetics, including a description of physiographic provinces, landscape character, scenic integrity, cultural influences, and scenic attractiveness; agency landscape inventory mapping; mapping of visual quality to supplement agency mapping as necessary; and mapping of visual compatibility of the study area with the facility to supplement agency mapping. Section 3.7(10) requires development and analysis of scenic quality and visual contrast mapping,

identification and analysis of key observation points (KOP), analysis of viewers, and viewshed photography for KOPs. Site categories to be included as KOPs are listed.

Idaho does not have a law equivalent to MFSA or any other state regulations for visual resources pertaining to transmission lines.

2.3 COUNTY PLANS AND POLICIES

The majority of counties crossed by the alternative route links do not regulate visual resources. Those that address visual resources in their planning documents typically do so with general goals and objectives, rather than specific policies.

Table 2.3-1 Montana County Plans and Policies

County	Planning Document	Goals, Objectives, and Policies Pertaining to Visual Resources
Beaverhead County	Beaverhead County Growth Policy (2005)	None
Broadwater County	Broadwater County Growth Policy (2003)	None
Gallatin County	Gallatin County Growth Policy (2003)	3.11 Scenic Resources, Goal 1: Conserve Scenic Resources and Views
Jefferson County	Jefferson County Growth Policy (2003)	Chapter 2, Statement of Purpose/Community Goals, Goal II, Objective B: Preserve the county's scenic beauty and conserve its forests, rangelands, and streams.
Madison County	Madison County Comprehensive Plan, 1999 Update Ordinance No. 1 – 2003 – An ordinance establishing a permitting process for wireless communication facilities, wind energy conversion systems (WECS), and other tall structures in Madison County, Montana.	Goals and Objectives, The Environment: Protect the quality of scenic views. Section 5. General Standards, B. Compatibility with Adjoining Land Uses and Scenic Resources: The proposed facility shall be located and designed to minimize negative impacts on scenic resources. <ol style="list-style-type: none"> 1. The facility should be located to minimize its visibility from any existing residential development on immediately adjacent properties or within a radius of one-half mile from the project site, whichever distance is greater. 2. Existing natural vegetation and grades on the site shall be preserved to the fullest extent possible.
Powell County	Powell County Growth Policy (2006)	None
Silver Bow County	Butte-Silver Bow Comprehensive Master Plan (1995)	None

Table 2.3-2 Idaho County Plans and Policies

County	Planning Document	Goals, Objectives, and Policies Pertaining to Visual Resources
Bingham County	Bingham County Comprehensive Plan (2005)	Section M, Community Design, Goal: Enhance corridors, conserve natural and historic features, protect scenic vistas, and enhance physical aspects of the county.
Blaine County	Blaine County Code and Comprehensive Plan (1994)	<p>Title 8, Chapter 1, Section 6, Aesthetic Values: Requires the county to adopt ordinances to require unobstructed visual corridors along streams and rivers; prohibit structures above the 25 percent slope line or any structures or roads that would impair the natural line of sight of hillside areas, and require a design review process for hillside structures.</p> <p>Designate scenic and view corridors and require that structures within those corridors go through a design review procedure.</p> <p>Protect and preserve hillsides in a natural state along designated Scenic Corridors (US Highways 93 and 20 and State Highway 75) and any other future designated view or scenic corridors. Prohibit scarring of hillsides by cuts and fills, clear cutting, devegetation, and access roads to slope areas.</p> <p>Title 9, Chapter 21, Mountain Overlay District, B. Purpose: Preserve natural character and aesthetic value of hillsides and mountains by regulating development.</p> <p>9-21-5 Site Alteration Permit Procedure: Visibility of the site alteration as viewed from reference roads shall be minimized through design, landscaping, and siting. Structures shall remain below the skyline. A site alteration permit would be required within this overlay district. The commission may attach reasonable conditions upon granting a site alteration permit, including further mitigation of visibility not included on the application.</p>
Bonneville County	Bonneville County Comprehensive Plan (2004)	None

Table 2.3-2 Idaho County Plans and Policies (cont.)

County	Planning Document	Goals, Objectives, and Policies Pertaining to Visual Resources
Butte County	Butte County Comprehensive Plan (2006)	None
Clark County	No Plan	
Jefferson County	Jefferson County Comprehensive Plan (2005)	None
Jerome County	Jerome County Comprehensive Plan (1997)	Chapter 5D1 d. Community Design: Aesthetically pleasing views from major roadways are important to the county. Chapter 5D2, Community Design: Highway corridors are delineated as a special element of the comprehensive plan map and enhancement of the scenic character of the views from the roadways is encouraged. A design review process will be implemented for these corridors.
Lincoln County	Lincoln County Comprehensive Plan (2003)	None
Minidoka County	Minidoka County/City of Rupert Comprehensive Plan (2001)	Transportation, Goals and Objectives, Objective 5: Increase concern for the scenic quality along transportation routes. Community Design, Goals and Objectives, Objective 7: Develop policies to preserve scenic ways and areas, including the use of a recreation zone or overlay.
Power County	Power County Comprehensive Plan (1995)	None

3.0 INVENTORY METHODS

For Visual Resources, the MSTI study area extends five miles on either side of the assumed centerlines of the alternative route links. The alternative route links start at the new Townsend substation and proceeds south and west to the existing Midpoint substation.

Visual resource data for the states of Montana and Idaho was obtained from a regional study conducted by POWER in 2006-2008 (see Volume 4). Additionally, visual resource data was collected from agency publications and websites, existing POWER files, GIS data sets, aerial photography, and agency contacts. Agency personnel were asked to provide existing visual resource mapping, including VRM/SIO/VQO mapping, scenic quality/attractiveness mapping, visual sensitivity mapping, and locations of sensitive viewpoints/scenic concern sites. Information was requested from the BLM Idaho State Office; the BLM Dillon, Butte, Upper Snake, Shoshone, and Burley Field Offices; the USFS Beaverhead-Deerlodge National Forest, Caribou-Targhee National Forest, Helena National Forest, and Salmon-Challis National Forest; and the Montana Department of Transportation (MDT).

The alternative route links cross a mosaic of federal, state, local and private lands. Federal lands include lands administered by the BLM, USFS, and Department of Energy (DOE). (see Land Use Technical Report).

There are no formal guidelines for managing visual resources on private, State or county-owned lands found within the 10-mile wide study area. Therefore, the methodology used in this study integrates the current BLM VRM system and the USFS Scenery Management System (SMS), but is modified to better address culturally dominated landscapes outside of public lands administered by the USFS or BLM. This method provided a consistent inventory process across the project area for public and private lands.

The visual resources inventory consisted of the following sequence of tasks:

- Identification of agency management objectives (VRMs, SIOs/VQOs) and scenic quality classifications if available;
- Inventory of existing regional landform, vegetation and water features (physiography), including a review of existing mapping and aerial photography and a review of landscape setting and character evaluation;
- Development of landscape rating units;
- Inventory of scenic quality and visual integrity within landscape rating units (where not established by agency);
- Identification and mapping of sensitive viewpoints;
- Sensitivity analysis of identified sensitive viewpoints (where not established by agency, i.e. USFS concern levels);
- And visibility and distance zone mapping.

3.1 DATA CATEGORIES

3.1.1 AGENCY VISUAL MANAGEMENT OBJECTIVES

Visual management objectives (BLM VRM Classes and USFS SIOs/VQOs) are designated in agency management plans for most of the public lands in the study area. These objectives define the acceptable degree of visual change allowed in the natural landscape. Both the BLM and USFS derive visual management objectives for their lands by combining scenic quality (e.g., landscape aesthetics), visual sensitivity, and visibility from sensitive viewpoints.

Visual resources on USFS lands are managed under the SMS (USFS 1995) or under the Visual Management System (VMS) (USFS 1974) if the forest plan for a particular forest has not been updated since 1995. The focus of both the SMS and VMS is to establish standards for landscape management that allow for various levels of change as a result of management activities. SIOs or VQOs under the old system, are established on USFS lands, and are described in Table A-1 in Appendix A.

Visual resources on BLM lands are managed under the VRM system. The BLM has four VRM Classes to manage visual resources on public lands. Class I is a special designation applied to existing Wilderness Areas, some natural areas, and other areas where the management policy or legislative mandate is to restrict visual changes to the natural landscapes. As with the USFS system, the BLM utilizes the VRM system to establish standards on managed lands that allow for various levels of change as typically detailed in the agency RMPs. For a description of VRM class designations refer to Table A-1.

Although similarities exist between BLM and USFS visual objectives, the combination of components (scenic quality, sensitivity level, and visibility) used to derive these objectives may differ between the two agencies. Consequently, it is possible that lands with similar characteristics may be managed differently across BLM and USFS boundaries

Where available, VRM or VQO data was provided by the agencies to POWER in the form of GIS shape files. In Montana, VRM data was provided by the BLM Dillon Field Office and the BLM Butte Field Office. VQO data was provided by Helena National Forest. Partial mapping of Minimum SIOs was available from the BDNF. POWER developed SIOs for the areas within the 10-mile wide study area using a Concern Level List and a Scenic Integrity Level Matrix, as outlined in the Beaverhead National Forest FEIS/Land and RMP Revision.

In Idaho, VRM data was available from the BLM Upper Snake, Shoshone, and Burley Field Offices. VQO mapping was available from the Salmon-Challis National Forest and the Caribou-Targhee National Forest.

3.1.2 REGIONAL SETTING AND LANDSCAPE CHARACTER

The scenic value analysis of the landscape began by examining the physiography and cultural modifications of the region. Dominant landforms, topography, and vegetation cover were identified and categorized from field observation, topographic maps, and aerial photography and compared to regional ecological and physiographic regions detailed by the Environmental Protection Agency's

(EPA) *Level IV Ecoregions* (2002), *Physiography of the Western United States* (Fenneman 1931) and the USFS *Northern Region Visual Character Types & Variety Class Description* (USFS n.d.). Patterns of cultural modification were identified and categorized from field observation and aerial photography. Landscape character types were then determined for areas crossed by the alternative route links.

PHYSIOGRAPHY

The study area occupies two major physiographic provinces: the Northern Rocky Mountains and the Columbia Plateau (Fenneman 1931). The study area is within the Snake River Plain section of the Columbia Plateau and the Broad Valley Rockies section of the Northern Rocky Mountains (USFS n.d.). The characteristics of these areas are discussed below. Figure 3.1-1 illustrates the major physiographic provinces of the western United States. A separate discussion of cultural modifications (e.g., urban areas, public lands management, and industrial development) is also included.

Broad Valley Rockies

The Broad Valley Rockies section is an area of somewhat widely spaced mountain ranges separated by broad valleys which occupy up to about 50% of the area. The valleys range from 2 to 15 miles wide and may reach 100 miles in length, often providing a sweeping panorama of the valley floor. Low-lying foothills, buttes, and stream cut terraces provide a transition between the valley floors and the mountain ranges. Mountain ranges appear at very similar elevations, and are typically round-topped and massive. Glaciers are not present and very few permanent snowfields are present. Past glaciation is expressed in cirque and trough walls, U-shaped valleys and morainal debris at higher elevations. Rock fields are not a typical landscape feature, but when cliffs, talus slopes and outcrops do occur, rock is often a dominant feature. Major rivers, such as the Missouri, and large reservoirs, such as Clark Canyon Reservoir, are the dominant water features. The typically wide and flat nature of the valleys causes the rivers to meander, with oxbows, cutoffs and abandoned channels often present. Vegetation serves to unite the region with a strong interplay of texture and color. Valley vegetation is generally grassland, including croplands, hay fields, and sagebrush grasslands with meandering, willow-lined streams. Mountain vegetation consists of conifer forests interspersed with grasslands, aspen groves, and willow-lined streams. Cultural influences are typically concentrated along the river valleys where agriculture and urban development is suitable. Open expanses and visual variety define this region. Links 1 through 20 are located primarily in the Broad Valley Rockies. All of the Montana portion and part of the Idaho portion of the Project are located in the Broad Valley Rockies.

Snake River Plain

The Snake River Plain section of the Columbia Plateau is located in Idaho south of the Broad Valley Rockies, and is characterized by broad, flat, volcanic basaltic lava formations interspersed with buttes and lava cones. The section of the Plain in the study area is flat, nearly 70-miles wide, and generally between 4,400-feet and 5,000-feet above sea level. The high desert environment that defines this section is an open, flat, somewhat irregular plain covered with black volcanic deposits at or near the ground surface. Buttes and rhyolite domes provide vertical punctuation across the stark, horizontal landscape. Foothill scrublands/grasslands and barren mountains define the borders of the section. Shallow lava shields provide other topographical relief. Native vegetation is largely gone in some areas, with irrigated cropland replacing much of the sagebrush and bunchgrass that would otherwise dominate. Links 22 through 31 are located primarily in the Snake River Plain.

CULTURAL MODIFICATIONS

Cultural modifications are found scattered throughout the 10-mile wide study area, and include communities, dispersed rural residences and agricultural facilities, agricultural lands, mines, and numerous highways and other roads.

The study area in Montana includes communities that range in scale from the moderate-sized city of Butte to small, rural, unincorporated establishments. Communities within the study area include Townsend, Boulder, Anaconda, Butte, Dillon, Whitehall, Twin Bridges, Three Forks, and Lima. Agricultural activity in Montana is concentrated in the valleys, with cultivated and irrigated activity concentrated in the lowest areas near water sources and grazing activities extending into the foothills.

In Idaho, communities within the study area include Spencer, Dubois, Hamer, Roberts, Arco, Butte City, Atomic City, Carey, Richfield, Shoshone, Dietrich, American Falls, and Minidoka. Agricultural activity in Idaho extends across the Snake River Plain, with cultivated and irrigated activity concentrated along the Snake River and near other water sources. Grazing activities extend across the plain and into the foothills to the north. The United States Sheep Experiment Station and the Idaho National Laboratory are also located within the study area. (see Land Use Technical Report).

LANDSCAPE CHARACTER TYPES

Landscape character types are landscape units of greater detail refined from the regional physiographic provinces and section classifications. Landscape character types are typically defined by dominant landform features (e.g., mountains, canyons). Each landscape character type was further divided into smaller units of similar physiographic, visual, and cultural characteristics. These homogeneous landscape units, or scenic quality rating units, were evaluated for scenic quality using BLM and USFS criteria. Modified criteria were used to evaluate visual integrity for culturally dominated landscape units outside public lands.

3.1.3 SCENIC QUALITY

BLM VRM and USFS SMS/VMS use slightly different procedures to establish scenic quality levels (scenic attractiveness for SMS or variety class quality for VMS). The BLM uses a numerical rating system to determine scenic quality classes, while the USFS system describes landscape variety in terms of landform, vegetation, and water form to determine scenic attractiveness or variety classes. Both systems classify the landscape into three levels of scenic quality: Class A, Class B, and Class C. Table A-2 in Appendix A compares the definitions of BLM scenic quality classes along with USFS scenic attractiveness and USFS variety classes.

Where available, existing scenic quality mapping for the alternative route links was obtained from the BLM and USFS and used in the visual resource inventory. In Montana, scenic attractiveness mapping was provided by the BDNF in the form of GIS shape files and used in the visual quality inventory. Scenic quality mapping for the alternative route links was digitized from mapping provided by the BLM Butte Field Office. Partial scenic quality mapping was digitized from hard copy maps from the BLM Dillon Field Office and also used in the visual quality inventory.

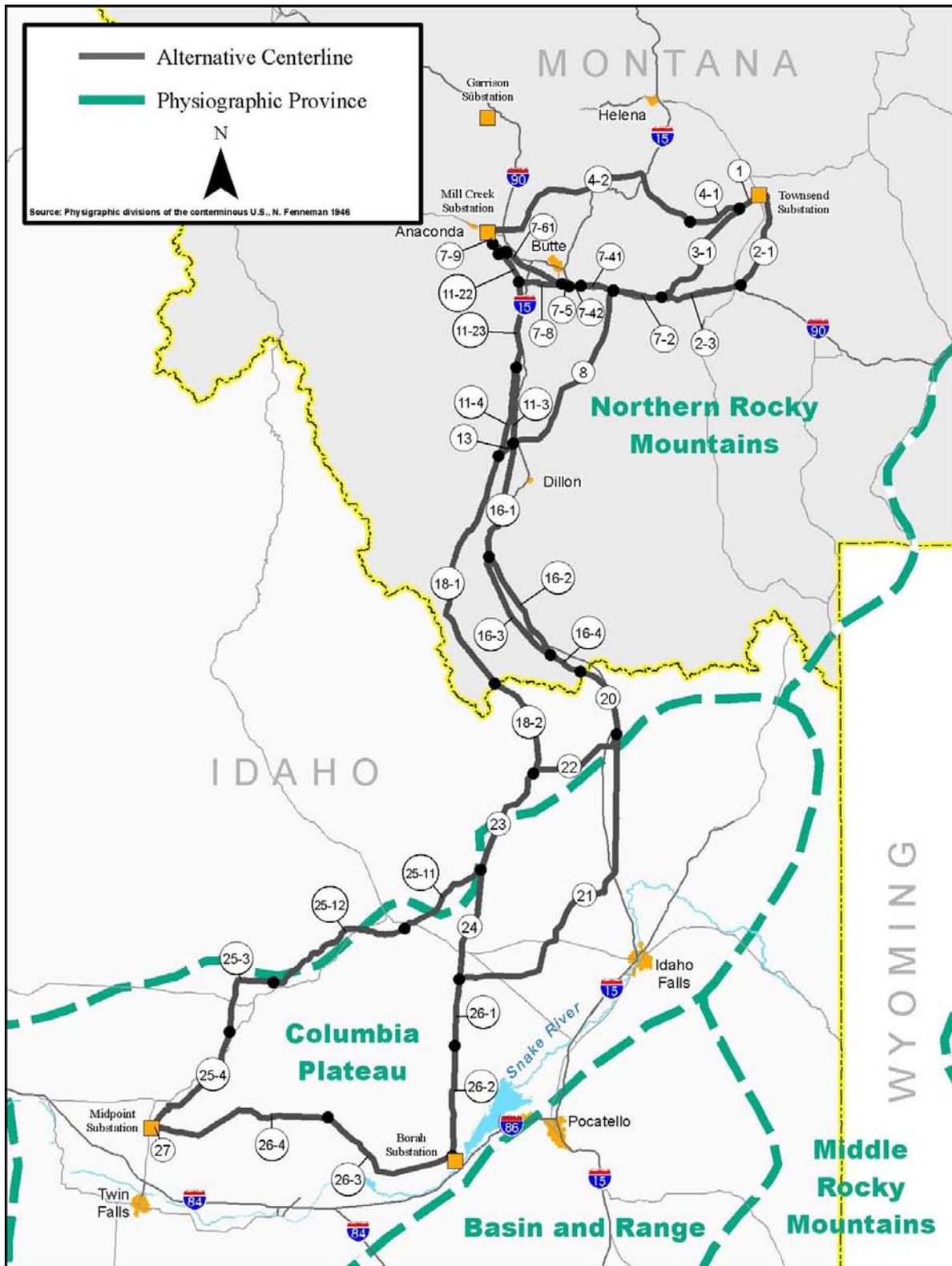


Figure 3.1-1 Physiographic Provinces

In Idaho, hard copy maps of scenic quality mapping for a portion of Idaho BLM Upper Snake Field Office lands were digitized. Due to the broad scale at which the existing scenic quality mapping was done, this mapping was not used in the visual quality inventory. New scenic quality mapping was done by POWER to maintain consistency of scale and detail. Scenic quality mapping was not available from the Shoshone and Burley Field Offices, the Salmon-Challis National Forest, or the Caribou-Targhee National Forest.

Where existing scenic quality mapping was not available, POWER developed scenic quality mapping by rating the homogeneous landscape rating units (scenic quality rating units) mapped from the divisions of landscape character types. BLM and USFS scenic quality criteria were used for all public lands and non-developed private lands.

Landform, water, color, influence of adjacent scenery, scarcity of features, and cultural modifications are key elements used in the BLM system for rating scenic quality, and were observed and documented based on the criteria outlined in Tables A-3 and A-4 in Appendix A. Vegetation cover, exposed soil color, and any atypical features, such as an abundance of rock outcroppings or unique water features, were also observed and noted. These features were evaluated in terms of contributing to or minimizing the scenic quality of the landscape. The sum of the numeric values for these elements determines the scenic quality class. Ratings of Class A (Distinctive or Unique), B (Above Average), or C (Common or Representative) were assigned, and are summarized in Appendix A, Table A-7. An example of a scenic quality field inventory rating form is included in Appendix B. For natural scenic quality rating units, scores of 25 or more receive Class A ratings, scores of 18 to 24 receive Class B ratings, and scores below 17 receive Class C ratings.

With the exception of developed landscapes, the evaluation of scenic quality performed for private land for the MSTI visual resource study utilizes an approach consistent with agency visual resource inventory procedures. Because agricultural, urban, and developed lands are not addressed by the BLM or USFS systems, these areas were evaluated using visual integrity criteria developed for the Project. The visual integrity criteria are similar to the BLM and USFS criteria, but modified to address culturally dominated landscapes.

Visual integrity is a measure of the scenic values of developed landscapes based on the degree to which the area is perceived to be “complete” or unified and other factors including visual complexity, uniqueness, and vividness. Additional criteria include perception-based factors such as sense of neighborhood and place, degree of modification, and how the area blends with the surrounding landscape. The highest visual integrity ratings are typically given to those developed landscapes that have moderate complexity, have a high degree of unity and coherence, retain a strong sense of place, and are vivid and memorable. As with natural scenic quality, evaluation criteria such as landform, vegetation, and soil color are scored and used in the rating of units (See Tables A-5 and A-6 in Appendix A). Ratings of Class A, B, or C were assigned, and are summarized in Table A-7. For cultural landscapes, scores above 27 receive Class A ratings, scores between 20 and 26 receive Class B ratings, and scores below 19 receive Class C ratings. An example of a visual integrity field inventory rating form is included in Appendix B of this technical report.

3.1.4 SENSITIVE VIEWPOINTS

Specific criteria were used to identify potentially sensitive viewpoints that could be impacted by the Project were inventoried based on established criteria. GIS shapefiles of Sensitive Viewpoints/Scenic

Concern Sites and Routes were provided by the BLM Butte Field Office and BDNF. Additional sensitive viewpoints were identified through consultation with agency contacts, agency websites, land use data, and field investigation. All viewpoints required by Circular MFSA-2 were mapped.

Viewpoints considered include:

- Residences/communities – cities, towns and unincorporated communities; residential clusters of 5 or more dwelling units per 20 acres, based on a circle of approximately 1000 feet in diameter; and individual residences not included within an urban or residential cluster.
- Parks, recreation, and preservation areas – national wilderness areas (NWA); wilderness study areas (WSA); national primitive areas (NPA); national parks and monuments; state parks; national recreation areas (NRA); national wildlife refuges and ranges (NWR); corridors of rivers in the national wild and scenic rivers system and rivers eligible for inclusion in the system; roadless areas of 5,000 acres or greater in size; unique habitats and natural areas designated by the National Park Service (NPS), the USFS, the BLM or the State of Montana as national natural landmarks (NNL), natural areas, research natural areas (RNA), areas of critical environmental concern (ACEC), special interest areas, research botanical areas, and outstanding natural areas; national trails; areas where the presence of the facility would be incompatible with published visual management plans adopted by federal, state, or local governments; streams and rivers identified as having a fishery value Class of I or II by the Montana Department of Fish, Wildlife, and Parks (MFWP); and areas used for camping, picnicking, or other recreational activity.
- Sensitive Travel routes – Proposed or designated scenic or historic highways or byways and recreation destination routes.

National Historic Landmarks, National Register historic districts and sites, and sites nominated to or designated by the State Historic Preservation Office (SHPO), also required by MFSA Circular-2, are addressed in the Cultural Resources Technical Report.

The visual sensitivity of these identified viewpoints was evaluated and rated as high, moderate, or low, following established BLM criteria (see 3.1.5 Visual Sensitivity). Viewpoints are listed in Appendix A, Table A-8.

Per Circular MFSA-2 Section 3.7(10)(g), photographs were taken from selected viewpoints toward the alternative facility locations. See Appendix E for photographs and mapping of the viewpoint locations.

3.1.5 VISUAL SENSITIVITY

The BDNF Revised Draft Forest Plan includes a Scenic Concern Level List that assigns Concern Levels to identified viewpoints. The Concern Levels assigned by BDNF were utilized only for viewpoints and routes within the BDNF boundaries. In this study, Concern Level One viewpoints were considered to be highly sensitive, while Concern Level Two viewpoints were considered to be moderately sensitive. The following methodology was used by POWER to assign visual sensitivity levels to all other viewpoints.

Both the BLM and USFS visual systems define visual sensitivity as a measure of viewer concern for the scenic resource and potential changes to the resource. Though the BLM and USFS vary in their

individual analysis of visual sensitivity, both systems consider similar criteria in their evaluations. The approach for this study incorporates criteria from both systems and draws from previous experience on visual studies conducted for transmission lines throughout the West. These criteria were condensed into user type/attitude, view duration, and use volume (see Table 3.1-1).

Visual sensitivity levels vary according to the types of users and their attitudes. Local, regional, or national significance of recreation viewpoints and travel routes was used to establish the attitudes of viewers. Views from communities and residences were all considered highly sensitive. Recreation viewpoints may be highly sensitive. However, some views from recreation areas are of less concern than others. Travelers on some highways and other roads may be less sensitive to changes than others. For example, some travel routes, used on a regular basis for going to and from work, are less sensitive than others used for scenic drives or en route to a recreation destination of particular importance.

Views with longer duration are typically more sensitive than those with shorter duration. For example, residents viewing the landscape from their homes every day (long duration) are more sensitive than a tourist viewing the landscape while traveling through the area on a highway (low duration).

Each viewpoint or area was assigned a value of high, moderate, or low for the volume of potential viewers who may be viewing a given area. While views seen by large numbers of people may potentially be more sensitive, a high volume of viewers who have no concern for the change would not warrant an increase in the visual sensitivity level.

Using these criteria, views were assigned a final sensitivity level of high, moderate, or low that was subsequently used in the visual analysis and initial impact level (see Table 3.1-2. See Table A-8 for a complete list of viewpoints and sensitivity levels).

Table 3.1-1 Visual Sensitivity Definitions

Criteria	High	Moderate	Low
Use Volume	High Level of Use	Moderate Level of use	Low level of use
User Attitude	High expectations for maintaining scenic quality (i.e. residences)	Users are concerned for scenic quality but it is not the primary focus of their experiences (i.e., dispersed recreation areas and general travel routes)	Areas where the public has low expectations for maintaining scenic quality. Generally commercial or industrial areas where human caused modifications already exist in the landscape
Duration of View	Fixed or continuous views – Long	Intermediate views (i.e., open highway views)	Brief or intermittent views (i.e. highway views in rolling landscapes) - Short

Table 3.1-2 Visual Sensitivity Criteria and Levels

CRITERIA			VISUAL SENSITIVITY
User Type/ Attitude	Duration of View	Use Volume	LEVEL
High	Long	High	High
High	Long	Moderate	High
High	Long	Low	High
High	Moderate	High	High
High	Moderate	Low	High
Moderate	Long	Moderate	Moderate
Moderate	Long	Low	Moderate
Moderate	Moderate	High	Moderate
Moderate	Moderate	Low	Moderate
Low	Long	Low	Low

Note: Table presents only those combinations of criteria that occurred within the study area.

3.1.6 VISIBILITY AND DISTANCE ZONES

Visibility from sensitive viewpoints was generated by POWER’s GIS using digital terrain data from the United States Geological Service (USGS) and the viewpoints mapped for this study and identified as sensitive.

Distance zones were established based upon perception thresholds. Perception of form, texture, color, and other visual elements in the landscape changes with increasing distance from a viewpoint. Landscape elements tend to become less obvious and detailed. Elements of form and line become more dominant than color or texture at longer viewing distances.

Distance thresholds or zones set by the USFS in the established SMS methodology are as follows:

- **Immediate Foreground** (0 to 300 feet): This is the zone where the greatest level of detail is evident to viewers. Elements that make up textures, such as individual tree leaves, bark patterns, and twig patterns, are perceived in detail. Movement of leaves and grasses in light winds are visible.
- **Foreground** (0 to 0.5 mile): Individual forms are dominant in the foreground distance zone. Texture is generally made up of large branches and tree trunks. Movement of tree branches at treetops in moderate winds are visible.
- **Middleground** (0.5 to 4 miles): Individual trees, large boulders, small forest openings, and small rock outcrops are visible. Form, texture, and color remain dominants, and pattern is important. Texture is often made up of repetitive treeforms.
- **Background** (4 miles to horizon): In this zone, tree groves, large forest openings, and large rock outcrops are visible. Texture is lost within views and color is flattened, but large patterns are still visible. Landform ridgelines and horizon lines are the dominant visual characteristics.
- **Seldom Seen**: Topography or vegetation prevents these landscapes from being viewed from any distance. These are areas may be seen from aircraft or by occasional backcountry forest travelers.

The BLM has similar distance thresholds as identified in the VRM methodology. These distance zones are as follows:

- **Foreground-Middleground Zone** (0 to 3 - 5 miles): This is the area where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape.
- **Background** (3 - 5 to 15 miles): This is the remaining area which can be seen. Areas which are so far distant that the only thing discernible is the form or outline are not included. In order to be included within this distance zone, vegetation should be visible at least as patterns of light and dark.
- **Seldom Seen:** These are areas that are not visible within the foreground-middleground and background zones, and areas beyond the background zones.

For this project, a review of previous studies in similar geographical, topographical, and environmental settings was performed, and relevant visibility thresholds were established. Studies have been conducted (Jones and Jones 1976) on transmission line visibility in the northwestern United States, and visibility threshold trends were uncovered that correlated to tower type, corridor variables, and landscape settings. Distance zones identified for this project are as follows:

- **Immediate Foreground:** 0 feet to 1,000 feet
- **Foreground:** 1,000 feet to 0.75 mile
- **Middleground:** 0.75 mile to 3 miles
- **Background:** 3 miles to 5 miles
- **Seldom Seen:** Beyond 5 miles

3.2 FIELD VERIFICATION

Field investigation was conducted in September and October of 2007 to investigate general scenic quality and potential visual contrast levels and to identify sensitive viewpoints. Field verification was conducted in May of 2008 for the purposes of verifying scenic quality and visual integrity classes, verifying visual contrast levels, and identifying and photographing visual simulation points.

3.3 PUBLIC AND AGENCY SCOPING COMMENTS

NWE conducted public outreach and communication programs for members of the public, various federal, state, and local government agencies, local property owners and other interested parties. Comments and issues that arose over the Project and the alternative route links were recorded by state at open houses, elected official briefings, agency meetings, and other comments mailed or faxed. Refer to the Public and Agency, Scoping Summary Report (Appendix C, MFSA Application) for a full description of the public involvement process and for a complete listing of comments received. Of the comments pertaining to visual resources, several concerned links that have been dropped or modified and are no longer applicable to the Project. Comments relevant to the alternative route links include the following:

- Individual interactive comment received – Shoshone, ID (August 9, 2007) – Silver Creek Special Recreation Management Area Fishing and visual impacts a concern for the BLM. Also Nature Conservancy Silver Creek Preserve in this area.

- Public scoping meeting comment – Idaho Falls, ID (August 8, 2007) – Blaine County comment – Concerns over the visual impact to the Craters of the Moon Corridor through Carey and into the Bellview Valley (Highway 20 Scenic Corridor).
- Agency letter comment, USDA, Bruce Ramsey, Forest Supervisor - In reviewing the map provided, it appears that segment 18 crossing USFS lands would affect the Italian Peaks and Garfield Inventoried Roadless Areas, both of which are being considered Recommended Wilderness in the Forest Plan. Segment 18 could also affect a Scenic Byway, the Continental Divide National Scenic Trail and the reservation of historic Bannock Pass (a site important to Native Americans and to the history of southwest Montana). Impacts would be reduced by utilizing interstate corridors rather than the Medicine Lodge area.
- Written Petition Received – Montana, Friends of Hadley Park - ... We opposed Option 4 of the Mountain States Transmission Intertie Project for the following reasons: Negative impact on the land and the wildlife, especially construction and maintenance of the line through Hadley Park, a beautiful, undeveloped wild area...Negative impact on the people who live and recreate in the affected areas...homeowners, hunters, fishers, hikers, photographers, and others who enjoy the natural resources of the area.

4.0 INVENTORY RESULTS

This section of the Visual Resources Technical Report describes the visual resources within the study area. The descriptions are subdivided by state and by route link. The section also describes the visual resources present at the proposed Townsend substation.

The study area extends from the irrigated valleys and mountain ranges of southwestern Montana's Broad Valley Rockies section of the Rocky Mountains to the broad, flat open expanses of the Snake River Plain of eastern Idaho. The approximately 1,200-linear miles of alternative route links cover a large geographical area and a variety of landscapes. The study area occupies two major physiographic provinces: the Northern Rocky Mountains and the Columbia Plateau. The Northern Rocky Mountains are characterized by deeply dissected mountain uplands and intermountain basins, and the Snake River section of the Columbia Plateaus is characterized by broad, flat, volcanic basaltic lava formations interspersed with buttes and lava cones (Fennemen 1931). Mountain ranges crossed by alternative route links include the Lost River Range, the Pioneer Mountains, the Lemhi Range, the Centennial Mountains, the Beaverhead Mountains, and the Jefferson Range. Major river valleys include those of the Missouri River, Beaverhead River, Jefferson River, and Snake River.

4.1 VRM/SIO/VQO CLASSES

As the 10-mile wide study area contains multiple adjoining jurisdictions (BLM and USFS), agency visual management designations may vary somewhat at adjacent jurisdictional boundaries or sometimes even between management units of the same agency. VRM/SIO/VQO designations crossed by the assumed centerline of the alternative route links are listed in the data tables listed below by state and link.

4.1.1 MONTANA

A total of 110.2 miles of VRM Class III land is crossed by the alternative route links. VRM Class III allows for a management activity to begin attracting attention in the landscape, but changes should remain subordinate to the existing landscape. A total of 8.8 miles of VRM Class II is crossed by the centerlines of the route links. VRM Class II allows for changes caused by a management activity, but these changes should not be evident and should not attract attention. A total of 5.2 miles of VRM Class IV is crossed by the alternative route links. VRM Class IV allows for changes in the landscape to attract attention and be a dominant feature of the landscape. No VRM Class I is crossed. Refer to Table 4.1-1 through Table 4.1-3 for a summary listed by link and milepost. Refer to Table A-1 in Appendix A for VRM descriptions.

Most USFS lands crossed by the alternative route links are designated SIO High or Moderate. A total of 17.5 miles of SIO High land is crossed by the alternative route links. SIO High allows for deviations in the landscape, but they must not be evident and landscape character must remain intact. A total of 13.4 miles of SIO Moderate is crossed by the alternative route links. SIO Moderate allows for noticeable deviations in the landscape, but they must remain visually subordinate to the original landscape character. A total of 1.8 miles of SIO Low is crossed by the alternative route links. SIO low allows for deviations to dominate the landscape character. No SIO Very High, Very Low, or Unacceptably Low is crossed. Refer to Table 4.1-3 through Table 4.1-6 for a summary listed by link and milepost. Refer to Table A-1 for SIO descriptions.

Table 4.1-1 BLM VRM Class II Lands Crossed in Montana

Link Number	VRM Class II Miles Crossed by Centerline	Total Miles
Link 2-1	MP 20.2-20.4	0.2
Link 4-1	MP 9.2-10.8	1.6
Link 4-2	MP 13.5-14.1; MP 18.1-18.4; MP 18.6-18.8; MP 19.1-20.5	2.5
Link 7-2	MP 11.2-11.8	0.6
Link 7-41	MP 3.7-3.9; MP 4.7-5.4	0.9
Link 11-23	MP 11.7-12.2; MP 14.0-15.1; MP 15.5-16.1; MP 17.1-18.0	3.0
TOTAL MILES:		8.8

MP = mile post

Table 4.1-2 BLM VRM Class III Lands Crossed in Montana

Link Number	VRM Class III Miles Crossed by Centerline	Total Miles
Link 1	MP 4.6-5.4; MP 6.1-6.7	1.4
Link 2-1	MP 5.6-6.7; MP 7.3-7.9; MP 8.4-9.2	2.5
Link 3-1	MP 5.5-5.9; MP 7.9-8.3	0.8
Link 4-1	MP 3.3-3.5; MP 4.2-4.4; MP 5.5-5.6; MP 6.1-7.3; MP 8.4-9.2; MP 12.5-13.1	3.1
Link 4-2	MP 0.9-2.6; MP 2.7-3.6; MP 3.8-7.1; MP 18.4-18.6; MP 20.5-21.7; MP 22.1-23.6; MP 24.3-25.2	9.7
Link 7-2	MP 2.7-3.2	0.5
Link 7-41	MP 0.3-0.7; MP 1.1-2.3; MP 2.5-3.7; MP 3.9-4.7	3.6
Link 8	MP 15.1-15.5; MP 19.0-19.6; MP 19.8-20.8; MP 21.2-22.5; MP 25.3-33.3; MP 34.3-36.4	13.4
Link 11-23	MP 18.3-19.0; MP 20.6-21.1	1.2
Link 11-3	MP 1.8-2.7; MP 3.6-5.7; MP 7.9-8.8; MP 11.8-12.4	4.5
Link 11-4	MP 2.2-2.8; MP 3.9-5.8; MP 7.5-7.9; MP 8.1-8.2; MP 8.3-14.0; MP 14.9-16.1; MP 20.2-22.8	12.5
Link 13	MP 1.5-2.2; MP 4.0-4.9	1.6
Link 16-1	MP 2.7-4.2; MP 5.4-6.3; MP 6.5-7.6; MP 14.4-16.0; MP 18.2-20.9	7.8
Link 16-2	MP 7.4-8.9; MP 9.1-11.4; MP 12.5-14.1; MP 14.2-15.1; MP 19.6-20.8; MP 21.4-21.6; MP 21.8-22.0; MP 23.1-24.0; MP 26.3-26.6; MP 27.5-28.6	10.2
Link 16-3	MP 1.8-2.6; MP 5.1-5.4; MP 5.7-6.6; MP 28.3-29.9	3.6
Link 18-1	MP 0.0-0.8; MP 1.2-2.4; MP 2.6-3.7; MP 3.9-4.5; MP 6.0-12.4; MP 13.9-15.2; MP 15.5-20.1; MP 29.2-31.6; MP 32.7-32.9; MP 34.0-36.9; MP 37.3-39.2; MP 41.2-41.5; MP 42.2-42.6; MP 45.7-46.0; MP 48.0-50.1; MP 50.7-51.3; MP 52.3-52.5; MP 53.3-55.4; MP 55.5-57.9; MP 59.5-61.5	33.8
TOTAL MILES:		110.2

Table 4.1-3 BLM VRM Class IV Lands Crossed in Montana

Link Number	VRM Class IV Miles Crossed by Centerline	Total Miles
Link 2-3	MP 16.2-16.3	0.1
Link 3-1	MP 27.3-27.5; MP 28.5-28.8	0.5
Link 8	MP 15.5-19.0	3.5
Link 18-1	MP 12.4-13.7	1.3
TOTAL MILES:		5.4

MP = mile post

Table 4.1-4 USFS SIO High Lands Crossed in Montana

Link Number	SIO High Miles Crossed by Centerline	Total Miles
Link 4-2	MP 30.9-31.3; MP 31.5-32.6; MP 33.0-33.7; MP 34.3-35.1; MP 35.3-36.0; MP 36.1-36.3; MP 36.4-36.9; MP 37.0-37.3; MP 37.4-38.6; MP 38.7-39.1; MP 39.2-39.5; MP 39.7-40.4; MP 40.6-41.3; MP 41.4-42.3; MP 44.0-44.3; MP 44.7-45.1; MP 45.6-45.7; MP 45.9-46.4; MP 46.5-47.3	12.0
Link 7-41	MP 6.7-7.7	1.2
Link 7-42	MP 6.7-7.7	2.8
Link 18-1	MP 61.8-63.3	1.5
TOTAL MILES:		17.5

MP = mile post

Table 4.1-5 USFS SIO Moderate Lands Crossed in Montana

Link Number	SIO Moderate Miles Crossed by Centerline	Total Miles
Link 4-2	MP 10.5-10.8; MP 10.9-11.8; MP 27.7-28.4; MP 34.2-34.3; MP 35.1-35.3; MP 36.0-36.1; MP 36.3-36.4; MP 36.9-37.0; MP 37.3-37.4; MP 39.1-39.2; MP 39.5-39.6; MP 41.3-41.4; MP 42.3-42.4; MP 42.5-44.0; MP 44.3-44.7; MP 45.1-45.6; MP 47.3-47.5; MP 47.7-47.8; MP 49.2-49.5; MP 49.9-51.2; MP 51.3-51.9; MP 52.7-54.4	9.6
Link 7-41	MP 5.3-6.7; MP 7.7-8.2	1.9
Link 11-22	MP 5.3-5.7; MP 6.8-6.9; MP 7.3-7.5; MP 7.7-8.1	1.1
Link 18-1	MP 63.3-64.1	0.8
TOTAL MILES:		13.4

MP = mile post

Table 4.1-6 USFS SIO Low Lands Crossed in Montana

Link Number	SIO Low Miles Crossed by Centerline	Total Miles
Link 4-2	MP 10.8-10.9; MP 11.8-12.3; MP 25.1-25.2; MP 28.4-28.7; MP 39.6-39.7; MP 49.5-49.6; MP 49.7-49.9	1.4
Link 11-22	MP 6.5-7.1	0.4
TOTAL MILES:		1.8

MP = mile post

4.1.2 IDAHO

A total of 2.3 miles of VRM Class I is crossed by the alternative route links, where Links 21 and 24 traverse an area of lava that extends north from Cedar Butte WSA. VRM Class I allows only very limited activity that must not attract attention. A total of 71.9 miles of VRM Class II is crossed by the alternative route links. VRM Class II allows for changes caused by a management activity, but these changes should not be evident and should not attract attention. A total of 201.1 miles of VRM Class III is crossed by the alternative route links. VRM Class III allows for a management activity to begin attracting attention in the landscape, but changes should remain subordinate to the existing landscape. A total of 97.0 miles of VRM Class IV is crossed by the alternative route links. VRM Class IV allows for changes in the landscape to attract attention and be a dominant feature of the landscape. Refer to Table 4.1-7 through Table 4.1-10 for a summary listed by link and milepost. Refer to Table A-1 for VRM descriptions.

All USFS lands crossed by the alternative route links are designated VQO Retention or Partial Retention. A total of 9.7 miles of VQO Retention is crossed by the alternative route links. VQO Retention allows for modifications, but management activities must not be visually evident. A total of 1.4 miles of VQO Partial Retention is crossed by the alternative route links. VQO Partial Retention allows for modifications that are visually evident, but they should not attract attention. No VQO Preservation, Modification, or Maximum Modification is crossed. Refer to Table 4.1-11 and Table 4.1-12 for a summary listed by link and milepost. Refer to Table A-1 for VQO descriptions.

Table 4.1-7 BLM VRM Class I Lands Crossed in Idaho

Link Number	VRM Class I Miles Crossed by Centerline	Total Miles
Link 21	MP 85.2-85.5; MP 86.4-87.7	1.6
Link 24	MP 25.8-26.5	0.7
TOTAL MILES:		2.3

MP = mile post

Table 4.1-8 BLM VRM Class II Lands Crossed in Idaho

Link Number	VRM Class II Miles Crossed by Centerline	Total Miles
Link 18-2	MP 5.0-5.9; MP 6.0-6.3; MP 7.6-7.8; MP 8.2-9.0; MP 10.1-10.9; MP 12.2-12.5; MP 13.0-13.3; MP 14.5-14.7; MP 14.8-15.8; MP 24.5-26.3; MP 26.8-27.0	6.8

Link Number	VRM Class II Miles Crossed by Centerline	Total Miles
Link 21	MP 26.7-28.1; MP 29.0-34.1; MP 37.4-38.8; MP 40.0-41.5; MP 54.3-56.9; MP 58.4-59.0; MP 60.5-61.3	13.4
Link 22	MP 18.6-24.7; MP 25.2-25.3	6.2
Link 23	MP 0-0.4; MP 10.2-14.7; M 22.6-29.0	11.3
Link 24	MP 0-5.0; MP 17.1-21.5	9.4
Link 25-11	MP 0-10.5	10.5
Link 26-4	MP 16.2-17.7	1.5
Link 31	MP 0.7-13.1; MP 13.8-14.2	12.8
TOTAL MILES:		71.9

Table 4.1-9 BLM VRM Class III Lands Crossed in Idaho

Link Number	VRM Class III Miles Crossed by Centerline	Total Miles
Link 18-2	MP 15.8-17.7; MP 18.6-24.5	7.8
Link 20	MP 17.8-18.1	0.3
Link 21	MP 7.0-9.8; MP 16.9-18.5; MP 41.8-43.2; MP 43.3-44.2; MP 44.5-51.4; MP 51.6-52.5; MP 53.8-54.3; MP 61.3-61.8; MP 61.9-62.7; MP 74.4-79.2; MP 79.9-83.5; MP 84.4-85.2; MP 85.7-86.0; MP 86.2-86.4; MP 87.7-89.4	27.7
Link 22	MP 11.3-11.7; MP 14.8-17.4; MP 17.8-18.6	3.8
Link 23	MP 0.4-2.1; MP 5.5-7.1; MP 8.3-10.2; MP 14.7-19.0; MP 19.6-22.6	12.5
Link 24	MP 5.0-15.1; MP 16.0-17.1; MP 21.5-22.6; MP 23.2-25.8; MP 26.5-28.4	16.8
Link 25-11	MP 10.5-25.9	15.4
Link 25-12	MP 0-5.4; MP 5.8-8.3; MP 12.4-13.5; MP 14.2-14.5; MP 18.1-18.3; MP 18.4-18.6; MP 22.4-23.5; MP 23.6-27.6; MP 30.5-32.9; MP 34.9-38.3; MP 38.7-39.1; MP 39.2-39.4; MP 39.5-39.8	21.5
Link 25-3	MP 0-0.4; MP 0.5-4.6; MP 5.3-6.6; MP 6.8-7.1; MP 13.0-14.3; MP 15.3-15.6	7.7
Link 25-4	MP 7.8-11.5; MP 11.8-12.0; MP 23.3-24.0; MP 24.4-26.9; MP 27.4-28.1; MP 32.5-33.6	8.9
Link 26-1	MP 0-1.9; MP 3.0-16.7	15.6
Link 26-2	MP 0-7.3; MP 7.9-8.0	7.4
Link 26-4	MP 24.9-28.0; MP 33.4-34.0; MP 46.5-47.1	4.3
Link 30	MP 0-16.3	16.3
Link 31	MP 0-0.7	0.7
TOTAL MILES:		201.0

MP = mile post

Table 4.1-10 USFS BLM VRM Class IV Lands Crossed in Idaho

Link Number	VRM Class IV Miles Crossed by Centerline	Total Miles
Link 25-12	MP 27.6-29.1; MP 29.3-30.5; MP 32.9-33.6; MP 34.7-34.9	3.6
Link 25-3	MP 9.6-11.7; MP 12.3-13.0	2.8
Link 25-4	MP 13.3-16.3; MP 17.4-20.7; MP 21.6-23.3; MP 28.1-32.5	12.4
Link 26-3	MP 1.0-2.5; MP 2.8-3.3; MP 3.4-3.6; MP 7.4-24.3; MP 25.3-27.2; MP 27.9-38.2	31.3
Link 26-4	MP 0-1.9; MP 2.8-8.0; MP 8.9-14.1; MP 14.4-16.2; MP 17.7-24.9; MP 28.0-33.4; MP 34.0-36.8; MP 37.7-38.8; MP 38.9-40.1; MP 40.2-41.0; MP 41.5-46.5	37.6
Link 31	MP 14.2-20.1; MP 21.0-24.4	9.3
TOTAL MILES:		97.0

MP = mile post

Table 4.1-11 VQO Retention Lands Crossed in Idaho

Link Number	SIO Low Miles Crossed by Centerline	Total Miles
Link 18-2	MP 0.1-0.6; MP 1.4-3.9; MP 4.5-5.1	3.6
Link 20	MP 8.3-14.4	6.1
TOTAL MILES:		9.7

MP = mile post

Table 4.1-12 USFS VQO Partial Retention Lands Crossed in Idaho

Link Number	SIO Low Miles Crossed by Centerline	Total Miles
Link 18-2	MP 0.6-1.4; MP 3.9-4.5	1.4
TOTAL MILES:		1.4

MP = mile post

4.2 LANDSCAPE CHARACTER TYPES & SCENIC QUALITY

To begin analyzing the existing landscape, general landform features were identified within the 10-mile wide study area. These landforms, referred to as landscape character types, are mountains, foothills, valleys, canyons, plains, water bodies, and developed areas. Refer to Figures 4.2-1 through 4.2-6 for photographs of these character types.

Within each landscape character type, homogeneous scenic quality or visual integrity rating units were delineated and mapped as a refinement of the analysis of landscape characteristics. Each rating unit was evaluated to determine a scenic quality or visual integrity class. The following section describes the results of the scenic quality analysis. Complete data for scenic quality/visual integrity is presented in Appendix C by route link and in Volume II, Impact Data Tables CD by route link and milepost.



Figure 4.2-1 Mountain Landscape Character Type Examples



Figure 4.2-2 Foothills Landscape Character Type Examples



Figure 4.2-3 Valley Landscape Character Type Examples



Figure 4.2-4 Plain Landscape Character Type Examples



Figure 4.2-5 Canyon Landscape Character Type



Figure 4.2-6 Water Body Landscape Character Type



Figure 4.2-7 Developed Area Landscape Character Type Examples

4.2.1 MONTANA

Class A scenery in Montana is located in the Highland Mountains, Pioneer Mountains, Blacktail Mountains, and Beaverhead Mountains; and in riparian areas associated with the Missouri headwaters, the Big Hole River, and the Beaverhead River.

Class B scenery in Montana is generally composed of mountainous areas, including most of the ranges located along the 10-mile wide study area. These include the Elkhorn Mountains, Boulder Range, Anaconda Range, Pioneer Mountains, Highland Range, Tendoy Mountains, Beaverhead Range, Blacktail Mountains, and Centennial Mountains. Additional Class B scenery includes riparian corridors such as the Missouri River, the Jefferson River, the Boulder River, the Beaverhead River, Whitetail Creek, and Medicine Lodge Creek. The Clark Canyon Reservoir was also identified as Class B.

Class C scenery is the dominant classification in Montana. Included are developed areas, valleys, foothills, and indistinct mountainous areas. These landscapes lack distinctive features and are common within the context of the region.

See Table 4.2-1 for a tabulation of scenic quality by alternative route link.

4.2.2 IDAHO

Class A scenery in Idaho is located in lava flow areas of the Craters of the Moon National Monument and at Lake Walcott within the Minidoka National Wildlife Refuge.

Class B areas are varied, and include mountains, lava flows, and significant water features. Mountain areas include portions of the Tendoy Mountains and the Beaverhead Mountains. Significant water features include the Market Lake area, the Carey Lake area, the Camas National Wildlife Refuge area and its numerous small water features, the Fish Creek Reservoir area, a portion of the Big Lost River, the Snake River, and American Falls Reservoir. Lava areas include portions of Craters of the Moon National Monument, Hell's Half Acre, and areas around Cedar Butte. Two prominent buttes, Cedar Butte and Big Southern Butte, were also Class B.

Class C scenery is the dominant classification in Idaho. Included are developed areas, plains, foothills, and indistinct mountainous areas. These landscapes lack distinctive features and are common within the context of the region.

See Table 4.2-2 for a tabulation of scenic quality by route link.

Table 4.2-1 Scenic Quality Inventory by Alternative Route Link in Montana

Link Number	Miles Crossed by Centerline		
	Class A	Class B	Class C
Link 1	-	0.6	6.5
Link 2-1	-	16.4	9.4
Link 2-3	-	3.8	16.7
Link 3-1	-	7.6	24.7
Link 4-1	-	2.4	11.1
Link 4-2	-	41.9	22.1
Link 4-4	-	-	0.1
Link 7-2	-	1.3	10.9
Link 7-41	0.7	3.2	4.5
Link 7-42	2.8	-	0.2
Link 7-5	-	-	1.8
Link 7-61	-	-	16.0
Link 7-62	-	-	0.5
Link 7-72	-	-	3.8
Link 7-8	-	2.3	8.8
Link 7-9	-	-	3.2
Link 8	0.5	7.2	42.6
Link 11-21	-	2.6	0.7
Link 11-22	-	2.0	7.0
Link 11-23	2.6	-	19.3
Link 11-3	1.3	-	17.9
Link 11-4	0.9	-	21.9
Link 13	-	-	4.9
Link 16-1	2.9	6.6	20.6
Link 16-2	-	-	29.3
Link 16-3	-	-	30.6
Link 16-4	-	0.6	8.1
Link 18-1	-	13.8	50.4

Table 4.2-2 Scenic Quality Inventory by Alternative Route Link in Idaho

Link Number	Miles Crossed by Centerline		
	Class A	Class B	Class C
Link 18-2	-	8.6	18.4
Link 20	-	-	20.0
Link 21	-	4.7	84.7
Link 22	-	-	25.3
Link 23	-	-	29.0
Link 24	-	2.3	26.1
Link 25-11	-	1.7	24.2
Link 25-12	-	0.2	39.6
Link 25-3	-	-	22.3
Link 25-4	-	-	33.7
Link 26-1	-	3.3	13.4
Link 26-2	-	-	27.8
Link 26-3	-	0.7	37.5
Link 26-4	-	-	47.1
Link 27	-	-	0.4
Link 28	-	-	2.0
Link 30	-	-	16.3
Link 31	-	-	24.4

4.3 SENSITIVE VIEWPOINTS

As described in Section 3.1.4, viewpoints within the 10-mile wide study area include:

- Residences/communities – cities, towns and unincorporated communities; residential clusters of 5 or more dwelling units per 20 acres, based on a circle of approximately 1,000 feet in diameter; and individual residences not included within an urban or residential cluster.
- Parks, recreation, and preservation areas – NWAs; WSAs; NPAs; national parks and monuments; state parks; NRAs; NWRs; corridors of rivers in the national wild and scenic rivers system and rivers eligible for inclusion in the system; roadless areas of 5,000 acres or greater in size;>NNLs, natural areas, RNAs, ACECs, special interest areas, research botanical areas, and outstanding natural areas; national trails; areas where the presence of the facility would be incompatible with published visual management plans adopted by federal, state, or local governments; streams and rivers identified as having a Fishery value Class of I or II by the MFWP; and areas used for camping, picnicking, or other recreational activity.

- Sensitive travel routes – Proposed or designated scenic or historic highways or byways and recreation destination routes.

Specific viewpoints and their locations within each alternative route link are described in Section 4.4, Visual Sensitivity, and listed in Table A-9, Appendix A.

4.4 VISUAL SENSITIVITY

Visual sensitivity levels of high, moderate, or low were assigned to each of the inventoried viewpoints. Visual impacts were assessed for viewpoints with high and moderate visual sensitivity. Sensitive viewpoints are outlined below for the transmission line for each link. Immediate Foreground (0 to 1,000 feet) and Foreground (1,000-feet to 0.75 mile) viewing conditions are noted because of the potential for high initial impact levels. A complete list of sensitivity criteria for each mapped viewpoint and the resulting visual sensitivity level for each viewpoint is presented in Table A-8 of Appendix A.

4.4.1 MONTANA

Residences and rural communities make up the majority of the high sensitivity viewpoints in Montana. Included are the communities of Anaconda, Boulder, Butte, Cardwell, Dillon, Lima, Townsend, Three Forks, Twin Bridges and Whitehall, and additional dispersed rural residences throughout the corridors.

Many recreation and preservation sites were also rated as high sensitivity viewpoints. Viewpoints rated as highly sensitive include state parks, WSAs, wild and scenic eligible rivers, two ACECs, BLM interpretive sites, the Camp Fortunate Overlook, the Humbug Spires primitive area, Thompson Park, publicly owned campsites and picnic areas, and non-off-road-vehicle (non-ORV) trailheads. The Continental Divide National Scenic Trail, which crosses through the study area, was also rated as highly sensitive.

Highly sensitive travel routes in Montana include the Anaconda-Pintler Scenic Highway, the Big Sheep Creek, Backcountry Byway, and roads designated by the BDNF as Scenic Concern Level One Routes.

LINK 1

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. Residences are the only highly sensitive viewpoints in the immediate foreground and foreground distance zones. One other high sensitivity viewpoint, the Crimson Bluffs interpretive site, is within the corridor.

The Missouri River Class I Fishery and the Lewis and Clark National Historic Trail, both moderately sensitive viewpoints, are crossed by the link. Other moderate sensitivity viewpoints within the corridor include the Raidersburg ORV Trailhead and one sportsman's access location.

LINK 2-1

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. Residences are the only highly sensitive viewpoints in the immediate foreground and foreground distance zones. Other high sensitivity viewpoints within the corridor include the community of Three Forks, Missouri Headwaters State Park, one campground, and the Lombard interpretive site.

The Missouri River Class I/II Fishery and the Lewis and Clark National Historic trail, both moderately sensitive viewpoints, are crossed by the link. Other moderate sensitivity viewpoints within the corridor include the Gallatin River Class II Fishery, the Madison River Class I Fishery, the Nature Conservancy Sixteenmile Creek macrosite, four sportsman's access sites, and the Toston Dam camping units.

LINK 2-3

Residences are located in all distance zones. Ten residences are located in the immediate foreground distance zone. Residences are the only highly sensitive viewpoints in the immediate foreground and foreground distance zones. Other high sensitivity viewpoints within the corridor include the community of Three Forks, Missouri Headwaters State Park, Parker Homestead state Park, and Lewis and Clark Caverns State Park.

Moderate sensitivity recreation and preservation viewpoints located within the corridor include the Missouri River Class II Fishery, the Gallatin River Class II Fishery, the Madison River Class I Fishery, the Lewis and Clark National Historic Trail, and three sportsman's access sites. No moderate sensitivity viewpoints are located in the immediate foreground or foreground distance zones.

LINK 3-1

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. The Black Sage WSA, also a highly sensitive viewpoint, is also located in the foreground distance zone.

Moderate sensitivity recreation and preservation viewpoints located within the corridor include the Lewis and Clark National Historic Trail, the Raidersburg ORV trailhead, and one sportsman's access site. No moderate sensitivity viewpoints are located in the immediate foreground or foreground distance zones.

LINK 4-1

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. The communities of Boulder and Raidersburg are located within the corridor. One high sensitivity recreation and preservation viewpoint, the Crow Creek camping unit, is present.

One moderately sensitive viewpoint, the Raidersburg ORV trailhead, is located in the foreground distance zone.

LINK 4-2

Residences are located in all distance zones. Seventeen residences are located in the immediate foreground distance zone. The Continental Divide National Scenic Trail, a high sensitivity viewpoint, is crossed by the link. One high sensitivity travel corridor, a BDNF Concern Level One roadway, is located in the foreground distance zone. Other high sensitivity viewpoints located in the corridor include the community of Anaconda, the Elkhorn WSA, Elkhorn State Park, one camp site, the Anaconda-Pintler national scenic highway, and several BDNF Concern Level One roadways.

One moderate sensitivity travel corridor, a BDNF Concern Level Two Roadway, is crossed by the link. One moderate sensitivity travel corridor, a BDNF Concern Level Two Roadway, is located in the foreground distance zone. Other moderate sensitivity viewpoints within the corridor include Electric Peak Roadless Area, Whitetail/Haystack Roadless Area, Anaconda Smoke Stack state park, and a proposed rest area site along Interstate 90.

LINK 4-4

Residences are the only high sensitivity viewpoints in the corridor. Residences are located in the foreground distance zone.

Two moderate sensitivity recreation viewpoints, the Ringing Rock recreation site and the Four Corner OHV trailhead, are located within the corridor. One moderate sensitivity travel route, a BDNF Concern Level Two roadway, is within the corridor.

LINK 7-2

Residences are located in all distance zones. Nine residences are located in the immediate foreground distance zone. The community of Whitehall is also located within the corridor.

Four moderate sensitivity recreation viewpoints, the Ringing Rock recreation site, the Four Corner ORV trailhead, one sportsman's access site, and the Lewis and Clark National Historic Trail, are located within the corridor. One BDNF Concern Level Two roadway, a moderate sensitivity travel route, is present.

LINK 7-41

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. One high sensitivity viewpoint, the Continental Divide National Scenic Trail, is crossed twice by the link, and one BDNF Concern Level One roadway is located in the foreground distance zone. Other high sensitivity viewpoints within the corridor include Homestake Lake Picnic Area, Thompson Park, and one campground. Several BDNF Concern Level One roadways are also present.

One moderate sensitivity travel route, a BDNF Concern Level Two roadway, is crossed twice by the link. Three moderate sensitivity recreation viewpoints, Whitetail/Haystack Roadless Area, the Ringing Rock recreation site, and the Four Corner ORV trailhead, are located within the corridor.

LINK 7-42

Residences are located in all distance zones. Seven residences are located in the immediate foreground distance zone. Four high sensitivity recreation and preservation viewpoints, Homestake Lake Picnic Area, one campground, Thompson Park, and the Continental Divide National Scenic Trail, are present. High sensitivity travel routes include several BDNF Concern Level One roadways.

One moderate sensitivity recreation viewpoint, the Whitetail/Haystack Roadless Area, is located within the corridor. One BDNF Concern Level Two roadway, a moderate sensitivity travel route, is present.

LINK 7-5

Residences are located in all distance zones. Sixty-nine residences are located in the immediate foreground distance zone. One high sensitivity recreation and preservation viewpoint, Thompson Park, is present. High sensitivity travel routes within the corridor consist of several BDNF Concern Level One roadways.

One moderate sensitivity recreation viewpoint, Whitetail/Haystack Roadless Area, is located within the corridor.

LINK 7-61

Residences are located in all distance zones. Sixty-three residences are located in the immediate foreground distance zone. The city of Butte is within the corridor. One high sensitivity travel route, a BDNF Concern Level One roadway, is within the corridor.

Two moderate sensitivity recreation and preservation viewpoints, Basin Creek Roadless Area and Fleecer Roadless Area, and are within the corridor. Moderate sensitivity travel routes consist of one BDNF Concern Level Two roadway, in addition to a proposed rest area site.

LINK 7-62

Residences make up the majority of the high sensitivity viewpoints in the corridor. Residences are located in the foreground, middleground, and background distance zones.

Moderate sensitivity viewpoints within the corridor consist of the Fleecer Roadless Area and a proposed MDT rest area site.

LINK 7-72

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone.

Moderate sensitivity viewpoints within the corridor consist of the Fleecer Roadless Area and a proposed MDT rest area site.

LINK 7-8

Residences are located in all distance zones. Six residences are located in the immediate foreground distance zone. The community of Butte is within the corridor. One high sensitivity recreation and preservation viewpoint, the Continental Divide National Scenic Trail, is present. High sensitivity travel routes include several BDNF Concern Level One roadways.

Three moderate sensitivity recreation and preservation viewpoints, Basin Creek Roadless Area, Fleecer Roadless Area, and Whitetail/Haystack Roadless Area, are within the corridor. One BDNF Concern Level Two roadway, a moderate sensitivity travel route, is located within the corridor.

LINK 7-9

Residences make up the majority of the high sensitivity viewpoints in the corridor. Residences are located in the foreground, middle ground, and background distance zones. The communities of Anaconda and Opportunity are within the corridor. One high sensitivity travel route, the Anaconda-Pintler National Scenic Highway, is present.

Moderate sensitivity viewpoints within the corridor consist of the Anaconda Smoke Stack State Park and a proposed MDT rest area site.

LINK 8

Residences are located in all distance zones. Nine residences are located in the immediate foreground distance zone. The communities of Twin Bridges and Silver Star are also within the corridor. One High sensitivity recreation viewpoint, the Notch Bottom Campground, is present. One BDNF Concern Level One roadway, a high sensitivity travel route, is located within the corridor.

The Big Hole River Class I Fishery, a moderate sensitivity viewpoint, is crossed by the link. Other moderate sensitivity viewpoints within the corridor include the Ringing Rock recreation site, the Four Corner ORV trailhead, the Jefferson River Class I/II Fishery, the Ruby River Class II Fishery, the Highlands Roadless Area, Block Mountain ACEC, Beaverhead Rock ACEC, the Lewis and Clark National Historic Trail, and three sportsman's access sites. One BDNF Concern Level Two roadway, a moderate sensitivity travel route, is present.

LINK 11-21

Residences are located in all distance zones. Four residences are located in the immediate foreground distance zone.

Moderate sensitivity viewpoints within the corridor consist of the Fleecer Roadless Area and a proposed MDT rest area site.

LINK 11-22

Residences are located in all distance zones. Seven residences are located in the immediate foreground distance zone. Two high sensitivity recreation and preservation viewpoints, the Continental Divide National Scenic Trail, and the Beaver Dam campground are present.

One moderate sensitivity travel route, a BDNF Concern Level Two roadway, is located in the foreground distance zone. Other moderate sensitivity viewpoints in the corridor include the Fleecer Roadless Area, a BDNF Concern Level Two roadway, and a proposed rest area site.

LINK 11-23

Residences are located in all distance zones. Seven residences are located in the immediate foreground distance zone. The Continental Divide National Scenic Trail, a high sensitivity viewpoint, is crossed by the link. One highly sensitive viewpoint, Humbug Spires WSA, is located in the immediate foreground distance zone, and one highly sensitive viewpoint, Maiden Rock campground/recreation site, is located in the foreground distance zone. Other high sensitivity recreation and preservation viewpoints in the corridor include three campgrounds and Moose Creek, a wild and scenic eligible river which is located entirely within the Humbug Spires primitive area.

The Big Hole River Class I Fishery, a moderate sensitivity viewpoint, is crossed by the link. Two moderate sensitivity viewpoints, both MDT rest areas, are located in the foreground distance zone. Other moderate sensitivity recreation and preservation viewpoints in the corridor include the Fleecer Roadless Area, the Basin Creek Roadless Area, the Cattle Gulch Roadless Area, the East Pioneer Roadless area, the Divide Bridge day use area, the Sawmill Gulch trailhead, and one sportsman's access site. Moderate sensitivity travel routes consist of several BDNF Concern Level Two roadways, in addition to two MDT rest areas.

LINK 11-3

Residences are located in all distance zones. Six residences are located in the immediate foreground distance zone. High sensitivity recreation and preservation viewpoints in the corridor consist of three campgrounds. The small community of Glen is also present. High sensitivity travel routes include two BDNF Concern Level One roadways.

Two moderate sensitivity viewpoints, the Big Hole River Class I Fishery and a sportsman's access site, are located in the foreground distance zone. Moderate sensitivity recreation and preservation viewpoints within the corridor include the Call Mountain Roadless Area, the East Pioneer Roadless area, and one campground. One BDNF Concern Level Two roadway, a moderate sensitivity travel route, is present.

LINK 11-4

Residences are located in all distance zones. Five residences are located in the immediate foreground distance zone. High sensitivity recreation and preservation viewpoints consist of five campgrounds and one picnic area. High sensitivity travel routes consist of two BDNF Concern Level One roadways.

Moderate sensitivity recreation and preservation viewpoints consist of the Call Mountain Roadless Area, the East Pioneer Roadless area, and the Big Hole River Class I Fishery. Two moderate sensitivity travel routes, BDNF Concern Level Two roadways, are also within the corridor.

LINK 13

Residences are located in the middleground and background distance zones. Two high sensitivity travel routes, BDNF Concern Level One roadways, are present.

LINK 16-1

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. The community of Dillon is located within the corridor. High sensitivity recreation and preservation viewpoints include the Henneberry Ridge WSA, the Bell/Limekiln Canyons WSA, two campgrounds, the Camp Fortunate day use area, and the Red Rocks day use area. One BDNF Concern Level One roadway, a high sensitivity travel route, is present.

The Beaverhead River Class I Fishery and the Lewis and Clark National Historic Trail, both moderate sensitivity viewpoints, are crossed by the link. Other moderate sensitivity viewpoints within the corridor include two sportsman's access sites and the Ney Homestead recreation site.

LINK 16-2

Residences are located in the foreground, middleground, and background distance zones. The community of Lima is also located within the corridor. High sensitivity recreation and preservation viewpoints include the Hidden Pasture Creek WSA, the Bell/Limekiln Canyons WSA, two campgrounds, the Camp Fortunate day use area, and the Red Rocks day use area. The Big Sheep Creek Back Country Byway, a high sensitivity travel routes, is present.

Moderate sensitivity viewpoints within the corridor include the Lewis and Clark National Historic Trail, the Beaverhead River Class I Fishery, McKenzie Canyon roadless area, the Timber Butte roadless area, the Garfield Mountain roadless area.

LINK 16-3

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. The community of Lima is located within the foreground distance zone. High sensitivity recreation and preservation viewpoints include the Hidden Pasture Creek WSA, the Bell/Limekiln Canyons WSA, three campgrounds, the Camp Fortunate day use area, and the Red Rocks day use area. The Big Sheep Creek Back Country Byway, a high sensitivity travel routes, is crossed by the link.

Moderate sensitivity viewpoints within the corridor include the Lewis and Clark National Historic Trail, the Beaverhead River Class I Fishery, McKenzie Canyon roadless area, the Timber Butte roadless area, the Garfield Mountain roadless area.

LINK 16-4

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. The community of Lima is also located within the corridor. The Continental Divide National Scenic Trail, a high sensitivity viewpoint, is located within the corridor.

The Garfield Mountain roadless area, a moderately sensitive viewpoint, is located within the corridor.

LINK 18-1

Residences are located in all distance zones. Three residences are located in the immediate foreground distance zone. The Continental Divide National Scenic Trail, a high sensitivity viewpoint, is crossed by the link. A high sensitivity travel route, the Big Sheep Creek Back Country Byway, is crossed multiple times by the link. One high sensitivity viewpoint, the Henneberry Ridge WSA, is located in the immediate foreground distance zone. Other high sensitivity viewpoints within the corridor include one proposed wilderness area, the Bell/Limekiln Canyons WSA, the Muddy Creek/Big Sheep Creek ACEC, two campgrounds, and the Camp Fortunate day use area. One additional high sensitivity travel route, a BDNF Concern Level One roadway, is present.

The Lewis and Clark national historic trail, a moderate sensitivity viewpoint, is crossed by the link. Other moderate sensitivity recreation viewpoints located within the corridor include the Italian Peak roadless area, the Sourdough Mountain roadless area, the Garfield Mountain roadless area, the Beaverhead River Class I Fishery, three sportsman's access sites, and the Ney Homestead recreation site. One moderate sensitivity travel route, a BDNF Concern Level Two roadway, is also located within the corridor.

4.4.2 IDAHO

Residences and rural communities make up the majority of the high sensitivity viewpoints in Idaho. Included are the communities of Spencer, Hamer, Roberts, Atomic City, Dubois, Butte City, Carey, Richfield, Shoshone, Dietrich, American Falls, and Minidoka, in addition to dispersed rural residences located throughout the agricultural areas of the Snake River Plain.

Many recreation and preservation sites were also rated as high sensitivity viewpoints. Viewpoints within Craters of the Moon National Monument were rated as highly sensitive, as were WSAs, NNLs, publicly owned campsites and picnic areas, and non-ORV trailheads. The Continental Divide National Scenic Trail, which crosses through the study area, was also rated as highly sensitive.

Highly sensitive travel routes in Idaho include the Lost Gold Trails Loop Scenic Byway; the Sawtooth Scenic Byway; and the portions of US Hwy 93, US Hwy 20, and State Hwy 75 within Blaine County, designated by Blaine County as scenic corridors. The Sacagawea Historic Byway was considered to be a moderate sensitivity viewpoint.

LINK 18-2

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. The Continental Divide National Scenic Trail, a high sensitivity viewpoint, is crossed

by the link. Other high sensitivity viewpoints within the link corridor include the Italian Peak roadless area/ proposed wilderness area, Muddy Creek/Big Sheep Creek ACEC, and the Upper and Lower Medicine Lodge Creek recreation sites. One high sensitivity travel route, the Big Sheep Creek Back Country Byway, is present.

Moderate sensitivity viewpoints include two roadless areas and the Nez Perce National Historic Trail.

LINK 20

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. Other high sensitivity viewpoints include the community of Spencer, located in the immediate foreground and foreground distance zones, and the Continental Divide Scenic Trail, which is crossed by the link. One high sensitivity travel corridor, the Lost Gold Trails Loop Scenic Byway, is also crossed by the link. One additional high sensitivity viewpoint, a campground, is also located within the corridor.

The Nez Perce National Historic Trail, a moderate sensitivity viewpoint, is crossed by the link. One additional moderate sensitivity viewpoint, the Garfield Mountain Roadless Area, is also located within the corridor.

LINK 21

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. The communities of Spencer, Hamer, Roberts, and Atomic City are also located within the corridor. Two high sensitivity viewpoints, Hell's Half Acrea WSA and Cedar Butte WSA, are located in the foreground distance zone. One additional high sensitivity viewpoint, Big Southern Butte National Natural Landmark, is within the corridor. One high sensitivity travel corridor, the Lost Gold Trails Loop Scenic Byway, is crossed by the link.

Goodale's Cutoff Historic Trail, a moderate sensitivity viewpoint, is crossed twice by the link. Several moderate sensitivity recreation and preservation viewpoints are located within the corridor, including the Nez Perce National Historic Trail, the Camas National Wildlife Refuge, and two ACECs. One moderate sensitivity travel corridor, the Sacajawea Historic Byway, is present.

LINK 22

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. The communities of Dubois and Spencer are also included. One high sensitivity travel corridor, the Lost Gold Trails Loop Scenic Byway, is crossed by the link.

The Nez Perce National Historic Trail, a moderate sensitivity viewpoint, is crossed by the link.

LINK 23

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. One high sensitivity travel corridor, the Lost Gold Trails Loop Scenic Byway, is present.

The Nez Perce National Historic Trail, a moderate sensitivity viewpoint, is crossed by the link.

One moderate sensitivity travel corridor, the Sacajawea Historic Byway, is crossed by the link.

LINK 24

Eight residences are located in the middleground and background distance zones. Three additional high sensitivity viewpoints, Big Southern Butte NNL, Black Canyon WSA, and Cedar Butte WSA, are also present.

Goodale's Cutoff Historic Trail, a moderate sensitivity viewpoint, is crossed by the link. One additional moderate sensitivity viewpoint, an Idaho Transportation Department (ITD) rest area, is located in the corridor.

LINK 25-11

Residences are located in the foreground, middleground, and background distance zones. The community of Butte City is also included. One high sensitivity viewpoint, Black Canyon WSA, is located within the corridor

Two moderately sensitive recreation viewpoints, Goodale's Cutoff Historic Trail and Salmon-Challis Roadless Area, are within the corridor.

LINK 25-12

Residences are located in the middleground and background distance zones. The communities of Butte City and Arco are also located within the corridor. One high sensitivity viewpoint, Great Rift WSA, is located in the foreground distance zone. Other high sensitivity viewpoints within the corridor include Craters of the Moon National Monument, Craters of the Moon wilderness, the Upper and Lower Silver Creek recreation sites, and Raven's Eye WSA. One high sensitivity travel route, US Hwy 20/26/93, designated by Blaine County as a scenic corridor, is located in the corridor.

Goodale's Cutoff Historic Trail, a moderate sensitivity viewpoint, is crossed multiple times by the link. One additional moderate sensitivity viewpoint, a sportsman's access site, is present.

LINK 25-3

Residences are located in the foreground, middleground, and background distance zones. The community of Carey is also included. The Upper and Lower Silver Creek recreation sites and the Ravens Eye WSA, all high sensitivity viewpoints, are located in the corridor. A segment of US Hwy 20, designated by Blaine County as a scenic corridor and classified as a high sensitivity travel route, is crossed by the link. Two additional high sensitivity travel routes, segments of US Hwy 20/26/93 and US Hwy 26/93 designated by Blaine County as scenic corridors, are also located within the corridor.

Goodale's Cutoff Historic Trail, a moderate sensitivity viewpoint, is crossed by the link.

LINK 25-4

Residences are located in all distance zones. One residence is located in the immediate foreground distance zone. A small portion of the community of Richfield is located in the foreground distance zone. The communities of Shoshone and Dietrich are also located within the corridor. Ravens Eye WSA, Shoshone WSA, Lava WSA, and the Upper and Lower Silver Creek recreation sites, all high sensitivity viewpoints, are located in the corridor. Two highly sensitive travel routes, the Sawtooth Scenic Byway, and US Hwy 26/93, designated by Blaine County as a scenic corridor, are located in the corridor.

Moderate sensitivity viewpoints include two sportsman's access sites.

LINK 26-1

One residence is located within the corridor in the background distance zone. Highly sensitive recreation and preservation viewpoints include Cedar Butte WSA, Big Southern Butte NNL, and one campground location.

Goodale's Cutoff Historic Trail, a moderate sensitivity viewpoint, is crossed by the link.

LINK 26-2

Residences are located in all distance zones. Two residences are located in the immediate foreground distance zone. The community of American Falls is also included. One highly sensitive viewpoint, Snake River Vista, is located in the corridor.

Moderate sensitivity recreation and preservation viewpoints include one sportsman's access site and the Oregon Trail. The Massacre Rocks rest area, also a moderately sensitive viewpoint, is within the corridor.

LINK 26-3

Residences are located in the foreground, middleground, and background distance zones. The communities of American Falls and Minidoka are also located within the corridor. One high sensitivity viewpoint, Great Rift WSA, is located in the foreground distance zone. Other highly sensitive viewpoints within the corridor include two BLM recreation sites: Baker Caves and Snake River Vista.

The Great Rift NNL, a moderate sensitivity viewpoint, is located in the immediate foreground distance zone and is crossed by the link. Additional moderate sensitivity viewpoints within the corridor include one sportsman's access site, the Oregon Trail, the Wood Road Kapuka Loop Trail, Minidoka National Wildlife Refuge, and the Massacre Rocks rest area.

LINK 26-4

Residences are located in the middleground and background distance zones. One high sensitivity viewpoint, Shale Butte WSA, is located in the immediate foreground distance zone. One additional high sensitivity viewpoint, Great Rift WSA, is also located within the corridor.

LINK 27

All high sensitivity viewpoints in the corridor are residences. Residences are located in the middleground and background distance zones.

LINK 28

Residences are located in the foreground, middleground, and background distance zones. The community of American Falls is also included. One highly sensitive viewpoint, Snake River Vista, is located in the corridor.

Moderate sensitivity recreation and preservation viewpoints include one sportsman's access site and the Oregon Trail. The Massacre Rocks rest area, also a moderately sensitive viewpoint, is within the corridor.

LINK 30

One highly sensitive viewpoint, Great Rift WSA, is located in the corridor.

One moderate sensitivity viewpoint, Great Rift NNL, is located in the immediate foreground distance zone and is crossed by the link.

LINK 31

Four residences are within the corridor in the background distance zone. One highly sensitive viewpoint, Great Rift WSA, is located in the corridor.

One moderate sensitivity viewpoint, Great Rift NNL, is located in the immediate foreground distance zone and is crossed by the link.

4.5 SUBSTATIONS

4.5.1 NEW TOWNSEND SUBSTATION

SCENIC QUALITY

The Townsend substation site is located in an area of Class C scenic quality.

SENSITIVE VIEWPOINTS

Residences make up the majority of the high sensitivity viewpoints for the substation. Eight residences are located in the foreground distance zone. The community of Townsend is located in the background distance zone. The Missouri River Class I Fishery, a moderately sensitive viewpoint, is also in the foreground distance zone. The Lewis and Clark Historic Trail, Crimson Bluffs interpretive site, and a sportsman's access site, all moderately sensitive viewpoints, are within the middleground distance zone.

4.5.2 MIDPOINT SUBSTATION MODIFICATION

SCENIC QUALITY

The Midpoint substation site is located in an area of Class C scenic quality.

SENSITIVE VIEWPOINTS

The only sensitive viewpoints are residences, which are present in the middleground and background distance zones.

4.5.3 MILL CREEK SUBSTATION ADDITIONS

SCENIC QUALITY

The Mill Creek substation site is located in an area of Class C scenic quality.

SENSITIVE VIEWPOINTS

Residences make up the majority of the high sensitivity viewpoints for the substation. The site is in the foreground for two residences. The community of Anaconda, Anaconda Smoke Stack State Park, and a proposed MDT rest area site, all moderately sensitive viewpoints, are within the middleground and background distance zones.

5.0 IMPACT METHODS

A significant step in the process of selecting a preferred route for the Project is determining initial and residual impact levels from the various alternative route links. While many sensitive features were avoided through the regional study and associated sensitivity analysis, it was not possible to completely avoid all sensitive elements. Consequently, it was necessary to map all known sensitive features within the 10-mile wide study area and carry out an impact assessment and mitigation planning procedure.

Visual impacts would result from the visibility of the line from sensitive viewpoints and from the contrast of the line with the inherent aesthetic value of the landscape. Potential impacts to views are greatest when there are high sensitivity levels coupled with close views and highly contrasting project elements. The potential impacts of the Project to visual resources within the study area could result from a variety of activities during the construction and operation of the transmission line.

Expected visual impacts from construction activities include:

- Construction of new roads and upgrading existing roads for construction access
- Ground disturbance at tower sites
- Assembling and erecting towers
- Stringing conductors

Construction-related visual impacts would all be temporary and would be related to the presence of construction vehicles, dust, vegetation removal, and exposure of soil and rock.

Visual impacts are also expected from operation of the transmission line. These include the presence of the towers, conductors, and roads left for maintenance access. The characteristics of visual impacts from the construction and operation of a 500kV transmission line are usually direct, adverse, and long-term. Five impact types were evaluated for this resource study:

- Effects on views from residences and communities
- Effects on views from parks, recreation, and preservation areas
- Effects on views from travel routes
- Effects on scenic resources
- Compatibility of contrast levels and potential impacts with BLM or USFS visual resources management policies

The impact assessment is based on the elements of the BLM Contrast Rating Process found in the BLM's 8400 Series Visual Resources Manual (BLM 1986a) and the USFS Visual Absorption Capability found in the USFS *Landscape Aesthetics: A Handbook for Scenery Management* (USFS 1995), adapted to address specific issues relating to transmission projects.

The analysis was assisted by the use of Environmental Systems Research Institutes (ESRI) ArcView GIS software to model seen areas and viewsheds, derive maps and data tables of impacted areas, and otherwise document and provide an analysis tool to assess project visual impacts.

The sequence of tasks used to study the visual impacts for all portions of the study area are:

- Visual contrast analysis
- Impact assessment
- Mitigation planning

5.1 VISUAL CONTRAST

Visual contrast is defined here as the degree of physical alteration of the landscape which would be perceived without regard to specific viewpoints or viewing conditions. How the visual changes are seen from sensitive viewpoints determines the viewer impacts. Contrast is determined by the difference in form, line, color, texture, scale, and landscape position between the proposed action and its setting. Contrast levels are characterized as strong, moderate, or weak.

Visual contrast is made up of three separate contrast models:

- Landform contrast
- Vegetation contrast
- Structure contrast

The individual components of visual contrast are described below and illustrated in Figure 5.1-1. Visual contrast is presented in Appendix C by route link and in Volume II, Impact Data Tables CD by route link and milepost.

Access/ground disturbance levels were defined as follows:

- Level 1 – Use existing improved road. Area previously disturbed. Roads generally are in good condition but may require small improvements at stream crossings, steep slope areas, and other locations. New ground disturbance would be minimal. New spur roads would be required to access each structure site; an average of 300 feet of new spur road for each structure. Spur roads would disturb approximately 0.4 acres per mile of transmission line.
- Level 2 – Use roads that require improvement. Area previously disturbed. Existing two-track or narrow unimproved roads would require improvement to make roads serviceable (e.g., mowing, grading) for construction. Low ground disturbance; assume approximately 0.5 to 1.0 miles of road improvements for each mile of transmission line. Road improvements would disturb approximately 0.75 to 1.0 acres per mile of transmission line. An average of 300 feet of spur roads would be required to access each structure site. Spur roads would disturb about 0.4 acres per mile of transmission line
- Level 3 – Construct road in flat terrain (0 to 8 percent). Low to Moderate ground disturbance for new access road construction; assume approximately 1.0 to 1.2 miles of new roads would be required for each mile of transmission line. Road construction would disturb approximately 1.7 to 2.0 acres per mile of transmission line.
- Level 4 – Construct road in sloping terrain (8 to 15 percent). Moderate ground disturbance for new access road construction; assume 1.2 to 1.5 miles of new road would be required for each mile of transmission line. Road construction would disturb approximately 2.0 to 2.5 acres per mile of transmission line.
- Level 5 – Construct road in steep terrain (15 to 30 percent). Moderate to high ground disturbance for new access road construction; assume approximately 1.5 to 2.0 miles of new road would be required for each mile of transmission line. Road construction would disturb approximately 2.5 to 3.4 acres per mile of transmission line.
- Level 6 – Construct road in very steep terrain (over 30 percent). High to very high ground disturbance for new access road construction; assume approximately 2.0 to 3.0 miles of new road would be required for each mile of transmission line. Road construction would disturb approximately 3.4 to 5.0 acres per mile of transmission line.

Table 5.1-1 Landform Contrast Matrix

Soil Contrast	Ground Disturbance Level					
	6	5	4	3	2	1
High Erosion Potential	S	S	S	M	W	W
Moderate Erosion Potential	S	S	M	W	W	W
Low Erosion Potential	M	M	W	W	W	W

S = Strong Contrast; M = Moderate Contrast; W = Weak Contrast

5.1.2 VEGETATION CONTRAST

Vegetation contrast is determined by the diversity and complexity of vegetation types and patterns. Diversity is a major criterion in determining the inherent capability of the landscape to absorb visual changes. These criteria are combined with the vegetation clearing required for road construction and improvements to determine vegetation contrasts (Table 5.1-2).

Table 5.1-2 Vegetation Contrast Matrix

Vegetation Component	Ground Disturbance Level					
	6	5	4	3	2	1
Overstory	S	S	S	S	S	S
Shrub	S	S	M	M	M	W
Grasslands and Agriculture	M	M	M	W	W	W
Sparsely Vegetated	M	W	W	W	W	W
Bare Lands	W	W	W	W	W	W
Urban	W	W	W	W	W	W

S = Strong Contrast; M = Moderate Contrast; W = Weak Contrast

Vegetation types in the area, identified and mapped by the biological resource team (see Biological Resources Technical Report), were grouped into categories that are representative of each vegetation type’s basic form:

- Overstory – Coniferous and deciduous trees
- Shrubs – Native or introduced shrubs, including sagebrush, bitterbrush, juniper, and riparian scrub
- Grasslands and Agriculture – Native or introduced meadows, grasslands, marshes, and irrigated and non-irrigated agriculture
- Sparsely Vegetated – Lava with partial vegetation cover and other sparsely vegetated lands
- Bare Lands – Lands lacking vegetation cover, including exposed rock, sand dunes, barren lands, and mud flats
- Urban – Developed urban areas

Changes to overstory vegetation types would result in a strong contrast rating, particularly with linear transmission lines that require trees to be removed from the entire width of the transmission line corridor for fire safety. The result would be an exposed and unnatural corridor clearing in the canopy layer.

Changes to shrub vegetation types would result in a strong to weak contrast rating. The shrubs removed during initial construction of a transmission line corridor will be allowed to grow back into the right of way and around the tower footings, and may fill in to their original density except along maintenance roads.

Changes to grassland and agriculture vegetation types would result in a broad range of contrast levels due to differences in potential vegetation recoverability and compatibility with the transmission line. Grasses tend to be shorter and less dense in content. Additionally, many grass types have light brown, tan, or gray colors that blend effectively with the soils from which the grasses are growing. While a road through grasslands would be visually obvious initially, grasses on either side of the road cut have the potential to blend with exposed soils. Grasses are also most easily reseeded and will typically grow back into the disturbed right of way more quickly. Impacts to grass vegetation tend to be short-term and less visually dominant.

Changes to sparsely vegetated types would result in moderate to weak contrasts. Low density of vegetation and exposed soils would allow a road cut to be less obvious and blend into the surroundings. However, vegetation may be slow to grow back in disturbed areas.

Bare lands and many urban areas lack natural vegetation and would therefore result in weak vegetation contrasts.

5.1.3 STRUCTURE CONTRAST

Structure contrast examines the compatibility of transmission facilities with the existing landscape. Structure contrast would be greatest where there are no other structures (e.g., buildings, existing utilities) in the landscape. For the most part, structure contrast in the study area is determined by the presence or absence of existing parallel transmission lines. The structure contrasts of the MSTI proposed tower types with the existing transmission lines are illustrated in Table 5.1-3.

Existing structures were compared to evaluate levels of contrast that would result from construction and operation of the 500kV transmission line. For example, a new 500kV steel lattice tower located next to an existing 500kV steel lattice tower would create a weak contrast, or little structure change to the existing landscape, whereas a new 500kV steel lattice tower located next to an existing 161kV wood H-frame structure and transmission line would create a moderate contrast, because the 500kV line and structure are larger and bulkier than the 161kV line and structure. The difference in structure contrast level is due to both the difference in heights and the substantial difference in appearance between the structures (refer to Table 5.1-3).

5.1.4 VISUAL CONTRAST LEVELS

Visual contrast levels were assigned to the landscapes inventoried within the study area through the combination of landform, vegetation, and structure contrast (see Table 5.1-4). Three levels (weak, moderate, and strong) are used to describe the potential visual contrasts that would result from the construction and operation of the proposed transmission lines and substations. The following describes some of the conditions associated with each visual contrast level:

STRONG VISUAL CONTRAST

- Contrasts caused by the construction of new access roads in steep terrain
- Removal of overstory or dense shrub-layer vegetation for right-of-way clearing, tower sites, or access roads
- A landscape with no existing transmission lines or substation facilities

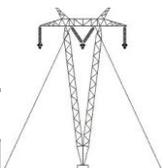
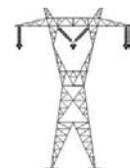
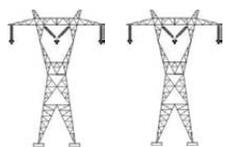
MODERATE VISUAL CONTRAST

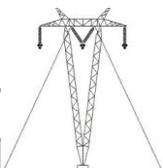
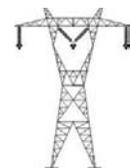
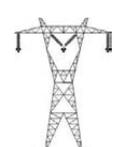
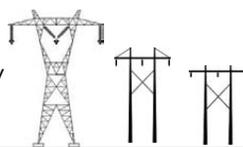
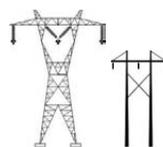
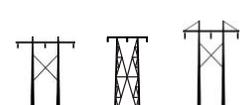
- Contrasts caused by the construction of new access roads in rolling terrain with occasional short, steep slopes
- Removal of shrub vegetation for right-of-way clearing, tower sites, or access roads
- A landscape where the proposed transmission line parallels a smaller existing line of a different structure type

WEAK VISUAL CONTRAST

- Contrasts caused by the construction of short spur roads or crushed vegetation from overland access of tower sites
- Minimal removal of vegetation
- A landscape where the proposed transmission line parallels a similar existing line

Table 5.1-3 Structure Contrast Matrix

		PROPOSED 500kV STRUCTURES		
		Guyed-V	Steel Lattice	Double Circuit Steel Lattice
EXISTING STRUCTURES				
Parallel	Rebuild			
No Structures		S	S	
500 kV Double-Circuit Steel Lattice w/ 1800 ft. separation		S	S	
500 kV Double-Circuit Steel Lattice		W	W	
500 kV Steel Lattice and 500 kV Steel Lattice		W	W	
345 kV (500 kV Steel Lattice Structure) w/ 1800 ft. separation		W	W	

		PROPOSED 500kV STRUCTURES		
		Guyed-V	Steel Lattice	Double Circuit Steel Lattice
EXISTING STRUCTURES				
Parallel	Rebuild			
345 kV (500 kV Steel Lattice Structure)		W	W	
345 kV (500 kV Steel Lattice Structure), 345 kV (230 kV H-Frame) and 345 kV (138 kV H-Frame)		W	W	
345 kV (500 kV Steel Lattice Structure), 345 kV (230 kV H-Frame)		W	W	
345 kV (230 kV H-frame)		M	M	M
100 kV Steel Lattice				M
100 kV Steel Lattice and 230 kV H-Frame				M
161 kV H-Frame, 100 kV Steel Lattice and 230 kV H-Frame		M	M	M
161 kV H-Frame and 100 kV Steel Lattice		M	M	M
230 kV H-Frame, 161 kV H-Frame and 161 kV H-Frame				M

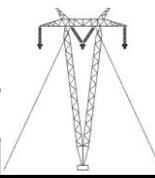
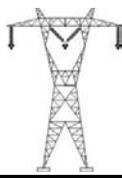
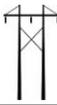
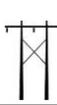
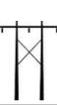
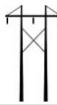
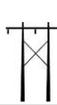
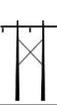
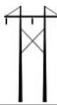
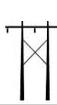
				PROPOSED 500kV STRUCTURES			
				Guyed-V	Steel Lattice	Double Circuit Steel Lattice	
EXISTING STRUCTURES							
Parallel				Rebuild			
230 kV H-Frame and 161 kV H-Frame			161 kV H-Frame				M
230 kV H-Frame and 161 kV H-Frame					M	M	M
230 kV H-Frame			161 kV H-Frame				M
69 kV H-Frame and 230 kV H-Frame					M	M	M
230 kV H-Frame					M	M	M
69 kV H-Frame or 138 kV H-Frame or 161 kV H-Frame					M	M	M
			161 kV H-Frame				M

Table 5.1-4 Overall Contrast Matrix

Landform Component	Vegetation Contrast								
	S			M			W		
S	S	S	M	S	M	M	S	M	W
M	S	M	M	S	M	W	M	M	W
W	S	M	W	M	M	W	M	M	W
Structure Contrast	S	M	W	S	M	W	S	M	W

S = Strong Contrast; M = Moderate Contrast; W = Weak Contrast

5.1.5 VIEWER VARIABLES

The criteria used to determine visual sensitivity consisted of use volume (number of potential viewers), user attitude (user expectations for maintaining scenic quality), and duration of view (length of time viewer sees the landscape). Refer to section 3.1.5 Visual Sensitivity for additional discussion. Other important considerations for views of the Project are described below, and are known as viewer variables.

VIEWER ORIENTATION

Viewer orientation is the degree to which a viewer's attention is directed toward or away from the Project in a particular viewing situation. This is determined by view angle, viewer position, and the location of distinctive landscape features (e.g., focal points, overlooks, interpretive sites) in relation to the Project. A perpendicular view angle will typically "catch" the viewer's attention more quickly than an oblique view angle. A viewing position above (superior) or below (inferior) the line of sight can also influence to what degree the Project would be noticeable.

LIGHTING CONDITIONS

Seasonal and daily (diurnal) patterns of natural lighting can affect the visual contrast of the Project when seen from particular directions or positions. Sunlight reflected by conductors and towers can make them more visible. This is usually the case when the sun is at the viewer's back and is reflecting from the surfaces of the project toward the viewer. This is known as a "front lit" condition. "Side lit" or "back lit" situations typically would not increase the visibility of a transmission line.

For this analysis, lighting conditions are assumed constant and worst-case for assessing initial impacts for all the alternative route links.

5.2 VISUAL IMPACT LEVELS

Using ESRI ArcView GIS software, six visual impact assessment models were developed to determine initial impact levels for the following impact types identified in the inventory:

- Residential
- High sensitivity recreation and preservation viewpoints
- Moderate sensitivity recreation and preservation viewpoints
- High sensitivity travel routes and linear recreation and preservation features
- Moderate sensitivity travel routes and linear recreation and preservation features
- Scenic resources

To determine potential visual impacts, the contrast levels were overlaid with the visibility and distance zones from sensitive viewpoints (i.e., residences, recreation areas and travel routes) and with the scenic values (i.e., scenic quality and visual integrity). The impact levels were recorded in one-tenth (0.1) mile increments along each link. Impact maps were then derived. Potential impacts were recorded into a data table for each impact level change along the length of each link. Each potential impact was described and assigned specific, selectively committed mitigation measures to reduce

impacts and to obtain a residual impact level. The highest potential impact out of the categories became the representative potential visual impact for that area. The Impact Data Table in Volume II, Impact Data Tables CD documents each individual impact separately. Refer to Figure 5.1-1 for an illustration of the impact assessment process. Tables 5.2-1, 5.2-2, and 5.2-3 document the methods used to determine potential impacts to scenic values (i.e., scenic quality and visual integrity) and sensitive viewers.

A seventh model was used to determine whether or not visual contrasts created by the Project would comply with USFS and BLM visual management objectives. This was determined using definitions for acceptable change within the various levels of agency management objectives. Refer to Table A-1.

Wherever a potential impact was identified within the immediate foreground distance zone of 0 to 1,000 feet, it was assessed as a nonmitigatable impact. This potential impact was not considered lower because of the dominance of the proposed 500kV transmission structures.

Table 5.2-1 Scenic Quality Impacts

Scenic Quality	Visual Contrast		
	Strong	Moderate	Weak
A	H	H	M
B	M	M	L
C	M	L	L

H = High Impacts; M = Moderate Impacts; L = Low Impacts

Table 5.2-2 Highly Sensitive Viewer Impacts

Distance/ Visibility Threshold	Visual Contrast		
	Strong	Moderate	Weak
0 to 1000 feet (IFG)	H	H	H
1000 feet to 0.75 mile (FG)	H	M	M
0.75 mile to 3 miles (MG)	M	L	L
3 miles to 5 miles (BG)	L	L	L

H = High Impacts; M = Moderate Impacts; L = Low Impacts; IMG = Immediate Foreground; FG = Foreground; MG = Middleground; BG = Background

Table 5.2-3 Moderately Sensitive Viewer Impacts

Distance/ Visibility Threshold	Visual Contrast		
	Strong	Moderate	Weak
0 to 1000 feet (IFG)	H	H	M
1000 feet to 0.75 mile (FG)	H	M	M
0.75 mile to 3 miles (MG)	L	L	L
3 miles to 5 miles (BG)	L	L	L

H = High Impacts; M = Moderate Impacts; L = Low Impacts; IMG = Immediate Foreground; FG = Foreground; MG = Middleground; BG = Background

5.2.1 VRM/SIO/VQO COMPATIBILITY

VRM/SIO/VQO designations were examined to determine whether or not the level of visual change from construction and operation of the Project would meet the adopted visual management objectives on BLM and USFS lands. Visual changes are not permitted by the BLM in VRM Class I or by the USFS in SIO Very High and VQO Preservation designations. Moderate or strong visual contrasts in areas of VRM Class II, SIO High, and VQO Retention would not comply with agency visual management objectives. Table 5.2-4 documents the method used to determine whether initial impacts would comply with agency visual management designations

Table 5.2-4 Compatibility of Impact Levels with Established VRM/SIO/VQO

BLM VRM	Visual Contrast			USFS SIO/VQO
	Weak	Moderate	Strong	
Class I	No	No	No	Very High/ Preservation
Class II	Yes	No	No	High/Retention
Class III	Yes	Yes	Yes	Moderate/Partial Retention
Class IV	Yes	Yes	Yes	Low/Modification
N/A	Yes	Yes	Yes	Very Low/ Maximum Modification

5.3 PHOTO-SIMULATIONS

In coordination with MDEQ personnel, a total of four viewpoints for photo-simulations were identified in the study area. See Appendix D for photo-simulations and mapping of photo-simulation viewpoint locations. The viewpoints are briefly described below:

- Photo-Simulation 1 – Residential area located south of Butte, looking west from Spur Lane down the existing transmission corridor . The view is of Link 7-5. Viewer Sensitivity:High; Scenic Quality: Class C
- Photo-Simulation 2 – Community of Silver Star in the Jefferson Valley, looking southeast from Cemetary Lane, just west of Hwy 41/US 287. The view is of Link 8. Viewer Sensitivity:High; Scenic Quality: Class C
- Photo-Simulation 3 – Dalys Siding located along the Beaverhead River Class II Fishery and Lewis and Clark National Historic Trail, off of Interstate 15, looking north. The view is of Link 16-1. Viewer Sensitivity:Moderate; Scenic Quality: Class A
- Photo-Simulation 4 – Litening Road off of Dry Creek Road, just east of US 287, looking north toward the proposed Townsend Substation site. Viewer Sensitivity: High (nearby residences); Scenic Quality: Class C

Simulations were used to evaluate the accuracy of the predicted visual impacts, to determine the effectiveness of recommended mitigation, and to illustrate the expected impacts to the concerned agencies and the public. Digital imaging, GIS, computer aided design, and global positioning system (GPS) software assisted in the development of the photo-simulations. The software used in photo-simulation includes:

- Adobe Photoshop CE – Used for photo manipulation and merging.
- Bentley Microstation v8.5 – Used for construction of transmission line and wind tower models, photo-matching, and rendering.
- Bentley Inroads v8.5 – Used for Digital Terrain Mapping (DTM) and modeling.
- ArcView – Used for geographic information project data mapping.

The process of photo-simulation began with taking field photographs, documenting viewpoint locations (coordinates) and weather conditions, and matching those photographs with project terrain models developed using Microstation. Computer models of the transmission lines and substation were introduced into the terrain model based on preliminary facility layouts developed in ArcView. The final image is a composite of the 3-dimensional structure modeling and the original photograph. The process ensured that spatial relationships, perspective, proportions and similar visual attributes were accurate and matched existing landscape conditions.

The photographs were taken by a Canon A540 digital camera with a 35mm equivalent focal length lens (no zoom) at the “superfine” JPEG compression and 2816 x 2112 pixel resolution. The camera was hand held at eye-level (approximately 5’-6”). Panoramic images were stitched together using Adobe Photoshop. The date, time of day, GPS coordinate (latitude/longitude) and weather conditions were documented.

The proposed structure types were modeled based on engineering input from POWER. Final engineering on the transmission line had not been completed during the environmental analysis phase of the project, and actual pole locations and configurations may deviate from the simulation if constructed.

5.4 MITIGATION

Mitigation for the proposed project includes two types of programs: environmental protection measures and specifically recommended mitigation. Environmental protection measures consist of measures or techniques that NWE would commit to on a nonspecific or project-wide basis as part of its proposed development plan. Selectively committed mitigation measures or techniques are those that NWE would commit on a case-by-case (or selective) basis after impacts are identified and assessed. Mitigation measures were developed to address and, as feasible, reduce the potential for impacts by construction of the Project. Mitigation measures can be applied individually to impacts or can be combined with other mitigation measures to reduce or eliminate impacts. The impacts remaining after applying mitigation measures are termed residual impacts.

The Environmental Protection Measures described in this report are preliminary measures that are part of the project description, but are not finalized or committed to until further discussions with the MDEQ are conducted. Likewise, the Specifically Recommended Mitigation Measures are preliminary, and not committed to by NWE, until discussions are held on this subject with the MDEQ.

When assessing the mitigation necessary for reducing impact levels, those factors which have contributed to the degree of impact must be identified. These project-related factors are landform contrast, vegetation contrast, and structure contrast (see 5.1 Visual Contrast). It is assumed that the only effective mitigation measures are those that reduce the visibility or weaken the contrast of the project. Further, in assessing the impact of the proposed activity, it was determined that all alternative

route links would have at least a “low” impact since there will always be some level of identifiable impact to viewers as long as the transmission line is visible. No mitigation measures were recommended for low impacts. For moderate or high impacts, one or more of the relevant mitigation measures were recommended, where effective, depending upon the particular situation.

Application of mitigation may be effective in reducing initial impacts a full impact level; however, in other instances, residual impacts may be the same level as initial impacts. In this case, mitigation is still effective, although only in reducing impacts to a lower level within that interval.

Environmental protection measures were considered when assessing initial impacts. After initial impacts were determined, specifically recommended mitigation measures were applied as appropriate to determine residual impact levels. Refer to Volume II, Impact Data Tables CD for a complete list of initial impacts, specifically recommended mitigation measures, and residual impacts by link and milepost.

A complete list of environmental protection measures can be found in Chapter 2. The environmental protection measures that were assigned to reduce potential visual impacts include the following:

1.1 All construction vehicle movement outside the right of way normally will be restricted to pre-designated access, contractor-acquired access, or public roads.

1.2 The areal limits of construction activities normally will be predetermined, with activity restricted to and confined within those limits.

1.3 In construction areas where recontouring is not required, vegetation will be left in place wherever possible and original contour will be maintained to avoid excessive root damage and allow for resprouting. Disturbance would be limited to overland driving where feasible to minimize changes in the original contours.

1.4 To reduce visual contrast and reduce siltation in construction areas (e.g., marshaling yards, structure sites, spur roads from existing access roads) where ground disturbance is substantial, surface preparation and reseeding would occur. The method of restoration would normally consist of loosening the soil surface, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches. Methods would be detailed in the Plan of Development (POD).

1.5 A POD including specific plans to address mitigation requirements would be prepared in consultation with the Agencies prior to construction being authorized. These plans would detail additional measures required to minimize potential proposed project impacts on natural resources and human safety. Plans typically include reclamation and revegetation of the ROW, resource protection, noxious weed control, dust control, hazardous spill prevention, fire prevention and storm water pollution prevention.

1.6 The POD would outline any required monitoring guidelines for the construction, operation, and maintenance of the line in order to avoid inadvertent impacts to resources. The Agencies would appoint an authorized inspector to oversee construction activities, authorize revisions or changes in the field, and determine if environmental protection is being done according to the approved POD. NorthWestern Energy would conduct a training program to inform construction crews of all permit requirements and restrictions relevant to Proposed Project construction.

3.1 No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate limits of survey or construction activity.

3.2 At residences, the right-of-way will be aligned, to the extent possible, to reduce impact on the residences and inhabitants.

The specifically recommended mitigation measures that were assigned to reduce potential visual impacts include the following:

3. To minimize ground disturbance and/or reduce scarring (visual contrast) of the landscape, the alignment of any new access roads or cross-country routes will follow the landform contours in designated areas where practicable, providing that such alignment does not impact resource values additionally.

5. To minimize ground disturbance, operational conflicts and/or visual contrast, the tower design will be modified or an alternative tower type will be used.

6. To minimize sensitive feature disturbance and/or reduce visual contrast, in designated areas structures will be placed so as to avoid sensitive features such as, but not limited to, riparian areas, water courses and cultural sites and/or to allow conductors to clearly span the features, within limits of standard tower design.

7. To reduce visual contrast and/or potential operational conflicts, standard tower design will be modified to correspond with spacing of existing transmission line structures where feasible and within limits of standard tower design. The normal span will be modified to correspond with existing towers, but not necessarily at every location.

8. To reduce visual impacts, potential impacts on recreation values and safety, at highway, canyon and trail crossings, towers are to be placed at the maximum feasible distance from the crossing within limits of standard tower design.

11. To reduce visual contrast in areas where overstory vegetation is removed for access, tower pads or conductor clearance, the clearing edges will be feathered to give a natural appearance.

6.0 IMPACT RESULTS

A variety of factors were taken into account when determining potential impact significance, including the extent of project visibility from residential areas and designated scenic routes, the degree to which the various project elements would contrast with or be integrated into the existing landscape, the extent of changes in the landscape's composition and character, and the number and sensitivity of the viewers. Project conformance with BLM and USFS policies regarding visual quality management objectives was also taken into account.

Changes in the appearance of the project area would result from the introduction of the new transmission line. Potential visual impacts would be direct and long-term. Local residents may or may not become accustomed to viewing the transmission line, substations and communication system components, but their presence does change the existing landscape character for the life of the Project.

Construction-related visual impacts could result from the presence of equipment, materials and work crews along the transmission line routes, at the substations, and at the communication system sites. Although these potential impacts would be relatively short-term and temporary in nature, they would be most noticeable to local residents.

The potential residual visual impacts associated with these changes are summarized in this section. The residual impacts were determined after applying the specific, specifically recommended mitigation measures to high or moderate initial impacts. No mitigation measures were recommended for low impacts. Specifically recommended mitigation measures 5, 6, 7, and 8 do not reduce impacts a full impact level. Specifically recommended mitigation measures 3 and 11 are effective in reducing initial impacts a full level in some cases. Refer to Volume II, Impact Data Tables CD for a complete list of initial impacts, specifically recommended mitigation measures, and residual impacts by link and milepost.

6.1 SCENIC QUALITY IMPACTS

Potential impacts to scenic quality are based on the changes in quality and quantity of the visual resources inherent in the natural landscape, without regard to how it is seen from viewpoints. Strong or moderate visual contrast in combination with Class A scenic quality usually resulted in potentially high initial visual impact levels, while weak visual contrast in combination with Class A scenic quality and strong or moderate visual contrast in combination with Class B scenic quality usually resulted in potentially moderate initial visual impact levels. Table 5.2-1 illustrates the model matrix used to determine initial impact levels. Refer to the Volume II, Impact Data Tables CD for detailed documentation of the potential visual impacts assessed for scenic quality along the alternative route links.

6.1.1 MONTANA

While the majority of links cross Class B and C scenic quality landscapes, some areas of potentially impacted Class A scenery would occur. An area of potential residual high impacts is located in an area of the Boulder Mountains in the Boulder Batholith southeast of Butte, where several links connect. Potential residual high impacts are located at the end of Link 7-41 (0.7 mile) and along almost all of Link 7-42 (2.8 miles). These areas are all presently impacted by existing transmission lines. Link 7-41 would parallel an existing 230kV transmission line and rebuild an existing 161kV transmission line in this area. Link 7-42 would rebuild an existing 161kV transmission line for its entire length and parallel an existing 161kV transmission line and an existing 100kV transmission line for portions of this area.

Potential residual high impacts to Class A scenery are also expected to occur at several river and stream crossings, including crossings of the Big Hole River on Link 8, where 0.5 mile of potential high residual impacts would occur and no existing transmission lines are present, and on Link 11-23, where 2.6 miles of potential high residual impacts would occur and the link parallels an existing 230kV transmission line and an existing 100kV transmission line. Crossings of Rock Creek would occur on Link 11-3, where 1.3 miles of potential high residual impacts would occur and the link parallels an existing 161kV transmission line, and on Link 11-4, where 0.9 mile of potential high residual impacts would occur and the link parallels an existing 230kV transmission line. Potential high impacts would occur along Link 16-1 where it crosses the Beaverhead River and follows the edge of the river valley, where 2.9 miles of potential high impacts would occur.

Areas of potential residual moderate impacts to Class B scenery are found along the majority of links in Montana. Many of these areas are located in the mountain ranges of the region. Several areas of potential residual moderate impacts are found in the Highland Mountains, including Links 7-41 (3.2 miles), 7-8 (2.3 miles), and 8 (1.3 miles). Areas are also located in the Bitterroot Range along Link 16-4 (0.6 mile) and where Link 18-1 roughly follows Medicine Lodge Creek between the Tendoy Mountains and the Beaverhead Mountains (15.1 miles). Areas in the Pioneer Mountains include Link 11-21 (2.6 miles), and Link 11-22 (2.0 miles) east of the Mount Haggin State Wildlife Management Area and Link 18-1 (1.6 miles). Areas occur in the Blacktail Mountains on Link 16-1 (6.6 miles).

Several areas are found in and near the Boulder Mountains, including 3.2 miles of Link 2-3, where the links roughly parallel Cottonwood Canyon and cross the Boulder River and 2.9 miles of Link 3-1 where the link skirts the base of Doherty Mountain at the edge of the Boulder River valley and then crosses the Boulder River. Extensive impacted areas are found on Link 4-2 in the Boulder Mountains and the Elkhorn Mountains, where 41.9 miles of the 64 mile link cross moderately impacted Class B scenery.

Class B areas of uplifted bedrock ridges in the foothills of the Elkhorn Mountains would be crossed by Links 3-1 and 4-1, resulting in 4.7 miles of potential moderate residual impacts on Link 3-1 and 1.6 miles of potential moderate residual impacts on Link 4-1.

Class B areas along the edge of the Missouri River valley would be crossed by several links, resulting in 14.0 miles of potential moderate residual impacts on Link 2-1 and 0.6 mile of potential impacts on Link 2-3. Link 2-1 would also result in 2.3 miles of potential moderate residual impacts where it crosses the Missouri River.

Link 4-1 would result in 0.8 mile of potential moderate residual impacts to Class B scenery where it crosses the Crow Creek valley west of the Limestone Hills. Class B scenery in the foothills east of Pipestone would be crossed by Link 7-2, resulting in 0.6 mile of potential residual impacts along the link. Class B areas would be crossed by Link 8 east of the Block Mountain ACEC, resulting in 5.9 miles of potential residual moderate impacts.

6.1.2 IDAHO

No areas of Class A scenery are crossed by the alternative route links. Several areas of moderately impacted Class B scenery are scattered along the alternative route links. One area is located at the edge of the Bitterroot Range, where Link 18-2 would result in 8.8 miles of potential moderate residual impacts. Class B areas of lava between Big Southern Butte NNL and Cedar Butte would be crossed by several links, resulting in 4.1 miles of potential moderate residual impacts on Link 21, 3.2 miles of potential moderate residual impacts on Link 24, and 3.3 miles of potential residual impacts on Link 26-1.

Link 21 would result in 0.6 mile of potential moderate residual impacts to Class B scenery where it crosses Market Lake Wildlife Management Area (WMA). Link 25-11 would result in 1.7 miles of potential residual impacts to Class B scenery where it crosses the Big Lost River Sinks, the depression where the Big Lost River flows into the ground.

6.2 RESIDENTIAL VIEWER AND COMMUNITY IMPACTS

High impacts to views from residences are the result of all levels of visual contrast in the 0-1,000 feet immediate foreground distance zone and high visual contrasts in the 1,000 feet – 0.75 mile foreground distance zone. Impacts to residences in the immediate foreground distance zone are assessed as a nonmitigatable impact. The number of high impacts to residential views was initially minimized during the regional study, where the alternative route links were sited to avoid residential areas.

Areas of potential high and moderate impacts are described in this section by state and link. Refer to Volume II, Impact Data Tables for detailed documentation of the visual impacts assessed for residential viewers for the study area.

6.2.1 MONTANA

The community of Opportunity would have immediate foreground and foreground views of Link 4-2, resulting in potential high and moderate impacts. The community of Lima would have foreground views of Link 16-3 and middleground views of Link 16-2. Several communities would have middleground or background views of the proposed alternate link, including Three Forks, which would have middleground views of Link 2-1, 2-2, and 2-3; Whitehall, which would have middleground views of Link 7-1 and 7-2; Butte, which would have middleground views of Link 7-61 and background views of Links 7-42 and 7-5; Boulder, which would have background views of Link 4-2; Anaconda, which would have background views of Links 4-2 and 7-9; Twin Bridges, which would have background views of Link 8; and Dillon, which would have background views of Link 16-1.

High and moderate impacts to residences are scattered throughout the alternative route corridors due to the large number of dispersed residences. Potential high impacts are found along all links except Links 3-2, 4-4, 7-62, 7-9, and 13.

Notable areas of potential high impacts due to larger clusters of residences occur along the links south and west of the City of Butte (Links 7-42, 7-5, and 7-61). Potential high impacts occur along almost the entire length of Link 7-5, with 69 residences in the immediate foreground. Potential high impacts due to high numbers of residences in the immediate foreground also occur along Link 7-61, with 63 residences in the immediate foreground. A notable area of potential high impacts also occurs along Link 4-2, where dispersed rural residences are concentrated in the foothills northeast of Boulder.

Three residences are located within 150 feet of a link centerline in Montana. One residence is located within 150 feet of the centerline of Link 7-5 between MP 0.9 and 1.0, one residence is located within 150 feet of the centerline of Link 7-61 between MP 12.8 and 13.0, and one residence is located within 150 feet of the centerline of Link 8 between MP 12.8 and 13.0.

Table 6.2-1 Residential Viewer Impacts in Montana

Link Number	Number of Residences in the Immediate Foreground Distance Zone	Miles of High Impacts		Miles of Moderate Impacts (Foreground and Middleground Distance Zones)
		Immediate Foreground Distance Zone	Foreground Distance Zone	
Link 1	2	0.9	0.3	2.9
Link 2-1	1	0.7	6.0	11.6
Link 2-3	10	1.4	0.1	9.4
Link 3-1	1	0.5	3.6	8.2
Link 4-1	2	0.5	0.2	6.9
Link 4-2	17	4.6	8.4	29.7
Link 4-4	None	None	None	0.1
Link 7-2	9	2.2	None	7.1
Link 7-41	2	0.4	None	2.6
Link 7-42	7	0.8	0.3	1.4
Link 7-5	69	1.6	None	0.2
Link 7-61	63	5.8	0.1	7.9
Link 7-62	None	None	None	0.5
Link 7-72	1	0.4	None	3.0
Link 7-8	6	1.0	2.1	6.0
Link 7-9	None	None	None	1.8
Link 8	9	2.0	4.0	20.0
Link 11-21	4	0.5	0.4	1.0
Link 11-22	7	1.1	0.3	4.2
Link 11-23	7	0.8	1.0	11.6
Link 11-3	6	1.4	1.6	8.2
Link 11-4	5	1.3	0.1	5.6
Link 13	None	None	None	1.0
Link 16-1	2	0.4	2.5	11.7
Link 16-2	None	None	2.7	18.4
Link 16-3	2	0.5	1.2	16.9
Link 16-4	1	0.4	0.2	0.9
Link 18-1	3	1.5	None	13.7

6.2.2 IDAHO

High impacts to incorporated communities within the study area would be expected along Link 20, where the community of Spencer would have foreground views of the link resulting in 0.6 mile of potential high impacts. Several communities would have middleground or background views of the proposed alternate links. The communities of Dubois, Hamer, and Atomic City would have middleground views of Link 21 while the community of Roberts would have background views of the link. The communities of Spencer and Dubois would have background views of Link 22. The community of Butte City would have middleground views of Link 25-12. The community of Carey

would have middleground views of Link 25-2 and background views of Link 25-3. The communities of Richfield, Dietrich, and Shoshone would have middleground views of Link 25-4. The community of American Falls would have background views of Links 26-2, 26-3, 26-4, and 28.

The greatest concentrations of potential high or moderate impacts are located on Link 25-2, with potential high or moderate impacts occurring along over 70 percent of the link; Link 25-3, with potential high or moderate impacts occurring along over 50 percent of the link; and Links 20 and 26-2, with potential high or moderate impacts occurring along 33 percent of each link.

The greatest concentration of potential high impacts occur along Link 25-2 near the town of Carey, with a total of 3.2 miles of potential high impacts and with a relatively high concentration of residences located in the foreground distance zone. While only one residence is located in the immediate foreground distance zone, it is located almost directly on the centerline of the link.

Two residences are located within 150 feet of a link centerline in Idaho. One residence is located within 150 feet of the centerline of Link 20 between MP 7.1 and 7.2 and one residence is located within 150 feet of the centerline of Link 25-2 between MP 7.6 and 7.8.

Table 6.2-2 Residential Viewer Impacts in Idaho

Link Number	Number of Residences in the Immediate Foreground Distance Zone	Miles of High Impacts		Miles of Moderate Impacts (Foreground and Middleground Distance Zones)
		Immediate Foreground Distance Zone	Foreground Distance Zone	
Link 18-2	1	0.2	0.8	5.6
Link 20	2	0.8	0.8	6.3
Link 21	1	0.3	None	6.1
Link 22	1	0.4	None	8.0
Link 23	1	0.4	None	2.6
Link 24	None	None	None	None
Link 25-11	None	None	None	1.5
Link 25-12	None	None	None	8.3
Link 25-3	None	None	0.3	11.2
Link 25-4	1	0.2	None	3.5
Link 26-1	None	None	None	None
Link 26-2	2	0.6	None	9.8
Link 26-3	None	None	0.2	8.3
Link 26-4	None	None	None	0.3
Link 27	None	None	None	None
Link 28	None	None	None	0.7
Link 30	None	None	None	None
Link 31	None	None	None	None

6.3 RECREATION AND TRANSPORTATION VIEWER IMPACTS

Similar to residential impacts, potential high impacts to views from high sensitivity recreation and transportation viewpoints are found where all levels of visual contrast occur in the 0-1,000 feet immediate foreground distance zone and high visual contrasts occur in the 1,000 feet - 0.75 mile foreground distance zone. Potential high impacts to views from moderate sensitivity viewpoints are found where high and moderate levels of visual contrast occur in the 0-1,000 feet immediate foreground distance zone and high visual contrasts occur in the 1,000 feet - 0.75 mile foreground distance zone. The number of high impacts to recreation and transportation views was initially minimized during the regional study, where the alternative route links were sited to avoid residential areas.

Areas of potential high and moderate impacts are described in this section by state and link. Refer to Volume II, Impact Data Tables CD for detailed documentation of the visual impacts assessed for recreation and transportation viewers for the study area.

6.3.1 MONTANA

Potential high or moderate impacts to recreation and transportation viewers occur along all links except Links 2-3, 4-4, 7-2, 7-9, 11-4, and 13. The heaviest concentrations of potential high or moderate impacts are located on Link 7-5, with high or moderate impacts occurring along almost three quarters of the link and Links 11-22 and 18-1, with high or moderate impacts occurring along almost three quarters of the links.

A number of sensitive linear recreation and preservation viewpoints and sensitive transportation corridors would be crossed by the links, resulting in potential high impacts. These features would be spanned and structures would be placed at the maximum feasible distance from the crossing, as outlined in environmental protection measures 0-8 and 2-2. Sensitive viewpoints that would potentially be crossed include the Missouri River Class I Fishery, crossed by Links 1 and 2; the Lewis and Clark National Historic Trail, crossed by Links 1, 2, and 16, and crossed twice by Link 18-1; the Continental Divide National Scenic Trail, crossed by Link 7-3, 7-41, 7-43, and crossed by Link 7-5 twice; BDNF Concern Level Two roadways, crossed by Link 7-3, 7-41, and 7-43; Interstate 90 where it is a BDNF Concern Level One Roadway, crossed by Link 7-5; the Big Hole River Class I Fishery, crossed by Link 8 once and by Link 11-22 twice; The Beaverhead River Class I Fishery, crossed by Link 16; and Big Sheep Creek Back Country Byway, crossed by Link 18-1 three times.

LINK 1

The Missouri River Class I Fishery and the Lewis and Clark National Historic trail, both moderately sensitive viewpoints, would be crossed by the link between MP 1.4 and 2.6 and would have immediate foreground visibility of the link, resulting in 1.0 mile of potential high impacts; foreground visibility resulting in 0.1 mile of potential high impacts; and foreground visibility resulting in 1.8 miles of potential moderate impacts.

LINK 2-1

The Lewis and Clark National Historic Trail would be crossed by the link near MP 6.6 and the Missouri River Class I Fishery would be crossed by the link near MP 8.2, resulting in 1.0 miles of immediate foreground visibility of the link and potential high impacts. Foreground views would result in an additional 1.6 miles of potential high impacts and 0.5 mile of potential moderate impacts for the two viewpoints. The Missouri River Class I Fishery would have an additional 0.2 mile of immediate foreground visibility resulting in potential high impacts. Additional potential moderate impacts would result from foreground and middleground views of the link from the Missouri River Class I Fishery, the Lewis and Clark National Historic Trail, Missouri Headwaters State Park Gallatin River Class II Fishery, the Madison River Class I Fishery, and several campgrounds and sportsman's access sites. A total of 2.8 miles of potential high impacts and 6.4 miles of potential moderate impacts occur along the link.

LINK 2-3

No potential high or moderate impacts occur along Link 7-61.

LINK 3-1

The Black Sage WSA would have immediate foreground, foreground, and middleground views of the link that would result in potential high and moderate impacts. Immediate foreground views would result in 0.8 mile of potential high impacts. Foreground views would result in 2.1 miles of additional potential high impacts. A total of 4.2 miles of potential moderate impacts would result from foreground and middleground views.

LINK 4-1

The Raidersburg ORV Trailhead would have foreground views of the link that would result in a total of 0.2 mile of potential high impacts and 1.2 miles of potential moderate impacts.

LINK 4-2

The Continental Divide National Scenic Trail would be crossed by the link near MP 42.3 and a BDNF Concern Level Two roadway would be crossed by the link near MP 44.5. Immediate foreground views at the crossings would result in 0.9 mile of potential high impacts. Additional foreground views from the trail would result in 2.7 miles of potential high impacts. Foreground views from a BDNF Concern Level One roadway and from a BDNF Concern Level Two Roadway would result in 3.6 miles of potential high impacts. Additional foreground and middleground views of the link from the trail and the BDNF Concern Level One and Two Roadways would result in 7.2 miles of moderate impacts. The Elkhorn WSA would have middleground views of the link, resulting in 3.6 miles of potential moderate impacts.

LINK 4-4

No potential high or moderate impacts occur along Link 4-4.

LINK 7-2

No potential high or moderate impacts occur along Link 7-2.

LINK 7-41

Potential impacts occur on the west half of the link. The Continental Divide National Scenic Trail would be crossed by the link near MP 7.8 and a BDNF Concern Level Two roadway would be crossed by the link near MP 7.8 and again near MP 8.1. The trail and the roadway would have immediate foreground views of the link resulting in 0.9 mile of potential high impacts. Immediate foreground and foreground views of the link from the trail, the BDNF Concern Level Two roadway, and Interstate 90, a BDNF Concern Level One roadway, on the south side of the link would result in 0.8 mile of potential moderate impacts.

LINK 7-42

The Continental Divide National Scenic Trail would be crossed by the link twice, once near MP 0, and once between MP 0.9 and 1.1, where Interstate 90, a BDNF Concern Level One roadway, would also be crossed by the link. The trail and the roadway would have immediate foreground views of the link resulting in 1.6 miles of potential high impacts. Foreground views of the link from Interstate 90 would result in additional potential high impacts. A total of 2.3 miles of potential high impacts and 0.7 miles of potential moderate impacts would occur.

LINK 7-5

Interstate 90, a BDNF Concern Level One roadway, would have middleground views of the link from a section of the roadway within the national forest, resulting in 0.5 mile of potential moderate impacts.

LINK 7-61

No potential high or moderate impacts occur along Link 7-61.

LINK 7-62

No potential high or moderate impacts occur along Link 7-62.

LINK 7-72

No potential high or moderate impacts occur along Link 7-72.

LINK 7-8

Potential moderate impacts occur on the east end of the link for 0.8 mile due to middleground views from a section of Interstate 90/15 that is within an area of the BDNF where it is designated a BDNF Concern Level One roadway. Potential moderate impacts occur on the west end of the link for 0.5

mile due to foreground views from a County highway that is within an area of the BDNF where it is designated a BDNF Concern Level Two roadway.

LINK 7-9

No potential high or moderate impacts occur along Link 7-9.

LINK 8

The Big Hole River Class I Fishery would be crossed by the link near MP 37.1. The river would have immediate foreground views of the link, resulting in 0.5 mile of potential high impacts. Foreground views of the link from the river would result in an additional 0.9 mile of potential high impacts and 0.4 mile of potential moderate impacts.

LINK 11-21

No potential high or moderate impacts occur along Link 11-21.

LINK 11-22

Potential moderate impacts occur on the south end of the link for 1.2 miles due to foreground views from a County highway that is within an area of the BDNF where it is designated a BDNF Concern Level Two roadway.

where it is designated a BDNF Concern Level Two roadway.

LINK 11-23

Foreground views from a County highway that is within an area of the BDNF where it is designated a BDNF Concern Level Two roadway would result in 0.6 mile of potential moderate impacts. Two MDT rest areas would have foreground views of the link, resulting in 1.3 miles of potential moderate impacts. The Continental Divide National Scenic Trail would be crossed by the link near MP 3.7, resulting in 0.4 miles of immediate foreground views and potential high impacts and foreground views resulting in 0.8 miles of potential moderate impacts. Humbug Spires WSA would have immediate foreground views resulting in 1.7 miles of potential high impacts, foreground views resulting in 1.4 miles of potential moderate impacts, and middleground views resulting in 1.4 miles of moderate impacts. Maiden Rock campground and recreation site would have middleground views resulting in 0.7 miles of potential moderate impacts. The Big Hole River Class I Fishery would be crossed by the link near MP 18.2. The river would have immediate foreground views of the link, resulting in 0.6 mile of potential high impacts, and foreground views resulting in 0.1 mile of potential high impacts and 2.8 miles of potential moderate impacts. A total of 2.8 miles of potential high impacts and 9.0 miles of potential moderate impacts would occur along the link.

LINK 11-3

The Big Hole River and Kalsta Bridge sportsman's access would also have foreground views of the link resulting in 0.2 mile of potential high impacts and 1.9 miles of potential moderate impacts. The

Big Hole River Class I Fishery , Salmon Fly campground/sportsman's access, Browne's Bridge campground/sportsman's access, Glen campground/sportsman's access, and Kalsta Bridge sportsman's access would have 2.2 miles of middleground views of the link resulting in potential moderate impacts A total of 0.2 mile of potential high impacts and 4.1 miles of potential moderate impacts would occur along the link.

LINK 11-4

No potential high or moderate impacts occur along Link 11-4.

LINK 13

No potential high or moderate impacts occur along Link 13.

LINK 16-1

The Beaverhead River Class I Fishery and the Lewis and Clark National Historic Trail which follows it would be crossed by the link near MP 17.0. The river and trail would have immediate foreground views of the link resulting in 0.6 mile of potential high impacts. Immediate foreground and foreground views of the link from the river and from the Ney Homestead recreation site would result in 5.7 miles of potential high impacts and 0.6 miles of potential moderate impacts. Middleground views of the link from the Beaverhead campground would result in 0.3 mile of potential moderate impacts. A total of 6.3 miles of potential high impacts and 0.9 miles of potential moderate impacts would occur along the link.

LINK 16-2

The Red Rocks day use area and the Bell/Limekiln Canyons WSA would have middleground views of the link resulting in 1.5 miles of potential moderate impacts. Middleground views of the link from the Big Sheep Creek Back Country Byway would result in 1.1 miles of potential moderate impacts.

LINK 16-3

The Red Rocks day use area and the Bell/Limekiln Canyons WSA would have middleground views of the link resulting in 0.9 mile of potential moderate impacts. The Big Sheep Creek Back Country Byway would be crossed by the link near MP 17.3, resulting in 0.5 miles of immediate foreground views and potential high impacts and 1.4 miles of foreground views and potential moderate impacts.

LINK 16-4

No potential high or moderate impacts occur along Link 16-4.

LINK 18-1

The Henneberry Ridge WSA would have immediate foreground views of the link that would result in 3.1 miles of potential high impacts and foreground views of the link that would result in 1.7 miles of potential moderate impacts. The link would cross the Lewis and Clark National Historic Trail near

MP 23. The link would cross the Big Sheep Creek Back Country Byway way three times, near MP 31.5, MP 43.4 and MP 49.7. The byway and the trail would have 8.4 miles of immediate foreground views and 0.2 mile of foreground views resulting in potential high impacts, and 11 miles of foreground and middleground views resulting in potential moderate impacts. The Continental Divide National Scenic Trail would be crossed at the end of the link, with 0.1 mile of immediate foreground views and 0.1 mile of foreground views resulting in potential high impacts, and 0.3 miles of foreground views and 0.4 miles of middleground views resulting in potential moderate impacts. A total of 11.7 miles of potential high impacts and 17.2 miles of potential moderate impacts would occur along the link.

6.3.2 IDAHO

Potential high or moderate impacts to recreation and transportation viewers occur along all links except Links 25-11, 25-4, 26-2, 27, and 28 A sizeable area of high impacts is found along Links 30 (6.9 miles) and 31 (8.1 miles), where the links cross through the Great Rift NNL.

A number of sensitive linear recreation and preservation viewpoints and sensitive transportation corridors would be crossed by the links, resulting in potential high impacts. These features would be spanned and structures would be placed at the maximum feasible distance from the crossing, as outlined in Environmental protection measures 6 and 8. Sensitive viewpoints that would potentially be crossed include the Continental Divide National Scenic Trail, crossed by Links 18-2 and 20; Lost Gold Trails Loop, crossed by Links 20, 21, and 22; the Nez Perce National Historic Trail, crossed by Links 20, 22, and 23; Goodale's Cutoff, crossed by Links 21 and 25-12 three times each and by Links 24, 25-3, and 26-1 once each; Sacajawea Historic Byway, crossed by Link 23; and Blaine County designated scenic corridors (Highways 20/26/93 and 20), crossed by Link 25-3. Portions of Great Rift Natural National Landmark would be traversed by portions of Links 26-3, 30, and 31, resulting in potential high and moderate impacts.

LINK 18-2

The Continental Divide National Scenic Trail would be crossed at the link's origin point. Immediate foreground views from the trail and middleground view from Italian Peak roadless area/proposed wilderness would result in 1.9 mile of potential high impacts.

LINK 20

The Continental Divide National Scenic Trail would be crossed near MP 2.0. Immediate foreground views from the trail would result in 0.6 mile of potential high impacts. Foreground and middleground views from the trail would result in 1.2 miles of potential moderate impacts. Foreground views from the Garfield Mountain Roadless Area would result in 0.1 mile of potential high impacts and 0.9 mile of potential moderate impacts. The link would cross the Lost Gold Trail Loop near MP 16.7 and cross the Nez Perce National Historic Trail near MP 17.7. Immediate foreground views from the loop and the trail would result in 1.4 miles of potential high impacts. Foreground and middleground views from the loop and the trail would result in 0.1 mile of potential high impacts and 3.5 miles of potential moderate impacts. A total of 2.2 miles of potential high impacts and 5.6 miles of potential moderate impacts would occur along the link.

LINK 21

The link would cross the Lost Gold Trail Loop near MP 8.0. Immediate foreground views from the loop would result in 0.4 mile of potential high impacts. Foreground views from the loop would result in 0.5 miles of potential moderate impacts. Foreground views of the link from Hell's Half Acre WSA would result in 0.7 mile of potential moderate impacts. The link would cross Goodale's Cutoff three times, near MP 85.2, MP 85.7, and MP 87.6. Immediate foreground views from Goodale's Cutoff would result in 2.1 miles of potential high impacts. Foreground views of the link from Goodale's Cutoff and from Cedar Butte WSA would have foreground views of the link resulting in 0.7 mile of potential high impacts and 1.9 miles of potential moderate impacts, and middleground views resulting in 0.4 mile of potential moderate impacts. A total of 3.2 miles of potential high impacts and 3.5 miles of potential moderate impacts would occur along the link.

LINK 22

The link would cross the Nez Perce National Trail near MP 5.1 and cross the Lost Gold Trail Loop near MP 5.5. Immediate foreground views from the loop and the trail would result in 1 mile of potential high impacts. Foreground views from the loop and the trail would result in 0.2 mile of potential high impacts. Foreground and middleground views from the loop and the trail would result in 5.7 miles of potential moderate impacts. A total of 2.0 miles of potential high impacts and 4.8 miles of potential moderate impacts would occur along the link.

LINK 23

The link would cross the Nez Perce National Trail near MP 12.5. The Nez Perce National Trail would have immediate foreground views of the link that would result in 2.8 miles of potential high impacts, and foreground views of the link that would result in 6.1 miles of potential moderate impacts. The Sacajawea Historic Byway would be crossed by the link near MP 15.1. The byway would have immediate foreground views of the link resulting in 0.5 mile of potential high impacts, and foreground views of the link resulting in 1.2 miles of potential moderate impacts. A total of 3.3 miles of potential high impacts and 7.3 miles of potential moderate impacts would occur along the link.

LINK 24

The link would cross Goodale's Cutoff near MP 27.1. Goodale's Cutoff would have immediate foreground views of the link resulting in 0.4 mile of potential high impacts, and foreground views of the link resulting in 1.2 miles of potential moderate impacts.

LINK 25-11

No potential high or moderate impacts occur along Link 25-11.

LINK 25-12

The link would cross Goodale's Cutoff three times near MP 3.5, near MP 12.1, and between MP 18.9 and 19.8. Goodale's Cutoff would have 3.1 miles of immediate foreground views resulting in potential high impacts. Goodale's Cutoff and Great Rift WSA would have 3.2 miles of foreground

views of the link resulting in potential high impacts and foreground and middleground views resulting in 7.2 miles of potential moderate impacts. Middleground views from Highway 20/26/93, which is a Blaine County designated scenic corridor, and Great Rift WSA would result in 1.8 miles of potential moderate impacts. A total of 6.3 miles of potential high impacts and 9.0 miles of potential moderate impacts would occur along the link.

LINK 25-3

The majority of impacts result from views of the link from highways designated as scenic corridors by Blaine County (Highway 20 and Highway 93). Near MP 14.7, the link would cross Highway 20. Immediate foreground views at the crossing would result in 0.5 mile of potential high impacts. An additional 0.5 mile of high impacts and 0.6 mile of moderate impacts would result from foreground views at the crossing. Highway 20/26/93 would have middleground views of the link resulting in 0.8 mile of potential moderate impacts, while Highway 26/93 would have middleground views of the link resulting in 1.7 miles of potential moderate impacts. The link would also cross Goodale's Cutoff near MP 11.6. Immediate foreground views at the crossing would result in 0.5 mile of potential high impacts from MP 11.4 to 11.9. An additional 0.7 mile of potential high impacts and 0.4 mile of potential moderate impacts would result from foreground views at the crossing.

LINK 25-4

No potential high or moderate impacts occur along Link 25-4.

LINK 26-1

The link would cross Goodale's Cutoff near MP 5.3. Immediate foreground views at the crossing would result in 0.5 mile of potential high impacts. An additional 1.5 miles of moderate impacts would result from foreground views at the crossing.

LINK 26-2

No potential high or moderate impacts occur along Link 26-2.

LINK 26-3

The link would cross through Great Rift NNL, with immediate foreground views resulting in 3.7 miles of potential high impacts and 2.4 miles of potential moderate impacts and foreground views resulting in 0.6 mile of moderate impacts. Foreground and middleground views from Great Rift WSA would result in 1.2 miles of potential high impacts and 8.4 miles of potential moderate impacts. Baker Caves would also have middleground views of the link.

LINK 26-4

Shale Butte WSA would have immediate foreground views of the link resulting in 3.0 miles of potential high impacts. Foreground views from the WSA would result in 0.2 mile of potential high impacts and 1.1 miles of potential moderate impacts.

LINK 27

No potential high or moderate impacts occur along Link 27.

LINK 28

No potential high or moderate impacts occur along Link 28.

LINK 30

The link would cross through Great Rift NNL, with immediate foreground views resulting in 6.9 miles of potential high impacts. Foreground views from the NNL would result in 0.6 mile of potential moderate impacts.

LINK 31

The link would cross through Great Rift NNL, with immediate foreground views resulting in 8 miles of potential high impacts. Foreground views from the NNL would result in 0.9 mile of potential moderate impacts.

6.4 VRM/VQO/SIO IMPACTS

6.4.1 MONTANA

All locations in Montana where impact levels do not comply with established VRM/SIO occur in areas of BLM VRM Class II or USFS SIO High where contrast levels of strong or moderate occur (Tables 6.4-1 and 6.4-2).

6.4.2 IDAHO

All locations in Idaho where impact levels do not comply with established VRM/SIO occur in areas of BLM VRM Class II or USFS VQO Retention where contrast levels of strong or moderate occur (Tables 6.5-3 and 6.5-4).

Table 6.4-1 BLM VRM Incompatibility in Montana

Link Number	Miles Crossed by Centerline where Impact Levels do not comply with Established VRM	Total Miles
Link 2-1	MP 21.0-21.2	0.2
Link 4-1	MP 9.2-10.8	1.6
Link 4-2	MP 13.5-14.1; MP 18.1-18.4; MP 18.6-18.8; MP 19.1-20.5	2.5
Link 7-1	MP 11.1-11.7	0.7
Link 7-2	MP 11.2-11.8	0.6
Link 7-3	MP 3.1-5.3	2.2
Link 7-41	MP 3.7-3.9; MP 4.7-5.4	0.9
Link 11-23	MP 11.7-12.1; MP 14.0-15.1; MP 15.5-16.1; MP 17.1-18.0	3.0

Table 6.4-2 USFS SIO Incompatibility in Montana

Link Number	Miles Crossed by Centerline where Impact Levels do not comply with Established SIO	Total Miles
Link 4-2	MP 30.9-31.3; MP 31.5-32.6; MP 33.0-33.7; MP 34.3-35.1; MP 35.3-36.0; MP 36.1-36.3; MP 36.4-36.9; MP 37.0-37.3; MP 37.4-38.6; MP 38.7-39.1; MP 39.2-39.5; MP 39.7-40.4; MP 40.6-41.3; MP 41.4-42.3; MP 44.0-44.3; MP 44.7-45.1; MP 45.6-45.7; MP 45.9-46.4; MP 46.5-47.3	11.0
Link 7-41	MP 6.7-7.7; MP 8.2-8.4	1.2
Link 7-42	MP 0-2.8	2.8
Link 7-43	MP 0.1-0.4; MP 0.7-2.4; MP 2.6-3.1	2.5
Link 18-1	MP 61.8-63.3	1.5

Table 6.4-3 BLM VRM Incompatibility in Idaho

Link Number	Miles Crossed by Centerline where Impact Levels do not comply with Established VRM	Total Miles
Link 18-2	MP 5.0-5.9; MP 6.0-6.3; MP 7.6-7.8; MP 8.2-9.0; MP 10.1-10.9; MP 12.2-12.5; MP 13.0-13.3; MP 14.5-14.7; MP 14.8-15.8; MP 24.5-26.3; MP 26.8-27.0	6.8
Link 21	MP 26.7-28.1; MP 29.0-34.1; MP 37.4-38.8; MP 40.0-41.5; MP 54.3-56.9; MP 58.4-59.0; MP 60.5-61.3; MP 85.2-85.5; MP 86.4-87.7	15.0
Link 22	MP 18.6-24.7; MP 25.2-25.3	6.2
Link 23	MP 0-0.4; MP 10.2-14.7; M 22.6-29.0	11.3
Link 24	MP 0-5.0; MP 17.1-19.6; MP 19.9-21.5; MP 25.8-26.5	9.8
Link 25-11	MP 0-10.5	10.5
Link 26-4	MP 17.5-17.7	0.2
Link 31	MP 0.7-13.1; MP 13.8-14.2	12.8

Table 6.4-4 USFS VQO Incompatibility in Idaho

Link Number	Miles Crossed by Centerline where Impact Levels do not comply with Established VQO	Total Miles
Link 18-2	MP 0.1-0.6; MP 1.4-3.9; MP 4.5-5.1	3.6
Link 20	MP 8.3-14.4	6.1

6.5 SUBSTATIONS

6.5.1 NEW TOWNSEND SUBSTATION

Due to weak contrast levels, potential impacts to scenic quality are expected to be low. Potential impacts to five residences in the immediate foreground and foreground distance zones are expected to be moderate. Potential impacts to the Missouri River Class I Fishery, located in the foreground

distance zone, are expected to be moderate. Impacts to all other sensitive viewpoints in the middleground and background distance zones are expected to be low.

6.5.2 MIDPOINT SUBSTATION MODIFICATION

Due to weak contrast levels, potential impacts to scenic quality are expected to be low. Potential impacts to sensitive viewpoints, consisting of residences in the middleground and background distance zones, are expected to be low.

6.5.3 MILL CREEK SUBSTATION ADDITIONS

Due to weak contrast levels, potential impacts to scenic quality and sensitive viewpoints including residences, the community of Anaconda, Anaconda Smoke Stack State Park, and a proposed MDT rest area site, are expected to be low.

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Agency Communication/Consultation:

Montana:

BLM Butte Field Office

- Personal communication with Brad Rixford, Recreation Planner, January -February, 2008.
- Personal communication with Brian Mueller, GIS Specialist, January 2008.
- Personal communication with Timothy Lamar, RMP Project Lead, January 2008.

BLM Dillon Field Office

- Personal communication with Rich Waldrup, Recreation Planner, November, 2007

Beaverhead-Deerlodge National Forest

- Personal communication with Doug Wright, Landscape Architect, January-March , 2008.

Helena National Forest

- Personal communication with David Payne, Landscape Architect, January-February, 2008.
- Personal communication with Elizabeth Casseli, Lolo National Forest, February, 2008.

Montana Department of Transportation

- Personal communication with Jean Riley, January 2008.

Montana Department of Environmental Quality

- Personal communication with Nancy Johnson, February-May, 2008.

Idaho:

BLM Idaho State Office

Personal communication with Cindy Lou McDonald, Supervisory Geographic Sciences Specialist, February 2008.

BLM Burley Field Office

Personal communication with Dennis Thompson, Recreation Planner, November-January 2007.

BLM Shoshone Field Office

Personal communication with David Friedberg, Recreation Planner, November 2007.

BLM Upper Snake Field Office

Personal communication with Monica Zimmerman, Recreation Planner, November-February 2007.

BLM Twin Falls District

Personal communication with Jesse German, Supervisory GIS Specialist, January 2008.

Challis National Forest

Personal communication with Trisha Callaghan, Landscape Architect, January-February 2008.

Targhee National Forest

Personal communication with Lisa Klinger, Recreation Program Manager, January 2008.
Personal communication with Bart Andresen, Landscape Architect, January, 2008.

Idaho State Parks and Recreation

Personal communication with Jim Thomas, Planner, January 2008.

APPENDICES

APPENDIX A

Table A-1	BLM Visual Resource Management Classes and FS Scenic Integrity
Table A-2	BLM Scenic Quality/FS Scenic Attractiveness/FS Variety Class Descriptions
Table A-3	Scenic Quality Criteria
Table A-4	Scenic Quality Inventory and Evaluation Chart
Table A-5	Visual Integrity Criteria
Table A-6	Visual Integrity Inventory and Evaluation Chart
Table A-7	Scenic Quality and Visual Integrity Classes
Table A-8	Sensitive Viewpoints

APPENDIX B

SCENIC QUALITY RATING UNIT SHEET
VISUAL INTEGRITY RATING UNIT SHEET

APPENDIX C

Table 1	Visual Contrast Levels – Miles by Link
Table 2	BLM VRM Classes – Miles Crossed by Link
Table 3	USFS SIO/VQ – Miles Crossed by Link
Table 4	Visual Contrast Level Compatibility with Agency Management Objectives – Miles by Link
Table 5	Scenic Quality Classes – Miles Crossed by Link
Table 6	Initial Impacts to Scenic Quality – Miles by Link
Table 7	Residential Viewpoints – Miles of Visibility by Link
Table 8	Initial Impacts to Residential Viewpoints – Miles by Link
Table 9	High Sensitivity Recreation, Preservation, and Transportation Viewpoints – Miles of Visibility by Link
Table 10	High Sensitivity Recreation, Preservation, and Transportation Linear Features (Roads, Rivers, Trails) – Miles of Visibility by Link
Table 11	Initial Impacts to High Sensitivity Recreation, Preservation, and Transportation Viewpoints and Linear Features (Roads, Rivers, Trails) – Miles by Link
Table 12	Moderate Sensitivity Recreation, Preservation, and Transportation Viewpoints – Miles of Visibility by Link
Table 13	Moderate Sensitivity Recreation, Preservation, and Transportation Linear Features (Roads, Rivers, Trails) – Miles of Visibility by Link
Table 14	Initial Impacts to Moderate Sensitivity Recreation, Preservation, and Transportation Viewpoints and Linear Features – Miles by Link
Table 15	Overall Residual Impacts – Miles by Link

APPENDIX D

Photo Simulation Locations
Townsend Simulation #1
MSTI Butte Simulation #2
MSTI Silver Star Simulation #3
MSTI Interstate 15 Simulation #4

APPENDIX E

Visual Photo Location Points
Representative Viewpoints