Final Environmental Impact Statement for the Sigurd to Red Butte No. 2 345kV Transmission Project

DOI-BLM-UT-C010-2009-0048-EIS
Case File: UTU 83067

October 2012

Volume III of III
Appendices

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Color Country

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

Final Environmental Impact Statement for the Sigurd to Red Butte No. 2 – 345kV Transmission Project

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Case File: UTU 83067

Volume III of III

Color Country District
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, Utah 84721

Cooperating Agencies
U.S. Forest Service (Dixie and Fishlake National Forests)
U.S. Army Corps of Engineers
National Park Service
Utah Governor's Public Land Policy Coordination Office
Utah School and Institutional Trust Lands Administration
Counties: Beaver, Iron, Millard, Sevier, and Washington
Communities: Enterprise and St. George

October 2012

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VOLUME III – APPENDICES

Volume III accompanies the Final Environmental Impact Statement (EIS) for the Sigurd to Red Butte No. 2 – 345-kilovolt Transmission Project.

This volume contains appendices and resource maps to facilitate the review of the Final EIS. The appendices include the following:

- Appendix A – Proponent's Purpose and Need
- Appendix B – Agency and Stakeholder Meetings
- Appendix C – Alternative Structure Types
- Appendix D – Biological Resources Supporting Data
- Appendix E – USFS Biologist Specialist Report
- Appendix F – Compliance with WO IM 2012-043 Greater Sage-grouse Interim Management Policies and Procedures
- Appendix G – Programmatic Agreement
- Appendix H – Visual Resources Supporting Data
- Appendix I – Visual Simulations
- Appendix J – Grazing Allotment Supporting Data
- Appendix K – Letters Documenting Compliance Regarding Lands with Wilderness Characteristics
- Appendix L – Calculated Electric and Magnetic Fields, Audible Noise Levels, and Radio Noise Levels
- Appendix M – Public Comments on the Draft Environmental Impact Statement

Substantive changes to the Appendices made between the Draft EIS and Final EIS are demarcated in the left margin of the pages by a vertical black line.

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List of Acronyms and Abbreviations

AGFD	Arizona Game and Fish Department
AOU	American Ornithologists' Union
APLIC	Avian Power Line Interaction Committee
ATV	All-terrain vehicle
BLM	Bureau of Land Management
BRTG	Biological Resource Task Group
CAS	Conservation Agreement Species
CCFO	Cedar City Field Office
CFR	Code of Federal Regulations
CIC	Compliance inspection contractor
Company	Rocky Mountain Power
dBµV/m	Decibels above 1 microvolt per meter
dBA	Decibel (A-weighted)
DEM	Digital elevation model
DG&T	Deseret Generation and Transmission
DOE	U.S. Department of Energy
EIS	Environmental impact statement
EPA	U.S. Environmental Protection Agency
EPG	Environmental Planning Group
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FFO	Fillmore Field Office
FR	Forest Road
FWS	U.S. Fish and Wildlife Service
HPTP	Historic Properties Treatment Plan
HUC	Hydrologic unit code
I-15	Interstate 15
I-70	Interstate 70
ID	Interdisciplinary
IM	Instruction Memorandum
IOP	Inventory observation point
KOP	Key observation points
kV	Kilovolt
kV/m	Kilovolts per meter
L_{50}	Median sound level
LRMP	Land and Resource Management Plan
MIS	Management indicator species
MV	Map Volume

MW	Megawatt
NAIP	National Agriculture Imagery Program
NEPA	National Environmental Policy Act of 1969
NERC	North American Electric Reliability Council
NHL	National Historic Landmark
NHPA	National Historic Preservation Act of 1966
NHT	National Historic Trail
NRHP	National Register of Historic Places
OATT	Open Access Transmission Tariff
PEIS	Programmatic Environmental Impact Statement
PLPCO	Utah Governor's Public Lands Policy Coordination Office
POD	Plan of Development
Project	Sigurd to Red Butte No. 2 – 345kV Transmission Project
Proponent	Rocky Mountain Power
RACR	Roadless Area Conservation Rule of 2001
RFO	Richfield Field Office
RMP	Resource management plan
ROD	Record of Decision
SHPO	State Historic Preservation Office
SIO	Scenic integrity objectives
SLRU	Sensitivity level rating unit
SMS	Scenery management system
SQRU	Scenic quality rating units
SR	State Route
SRMA	Special Recreation Management Area
SUWA	Southern Utah Wilderness Alliance
TOP	Transmission operating standard (NERC)
TPL	Transmission planning standard (NERC)
UAMPS	Utah Associated Municipal Power Systems
UDNR	Utah Department of Natural Resources
UDWR	Utah Division of Wildlife Resources
UNHP	Utah Natural Heritage Program
UNPS	Utah Native Plant Society
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
VRI	Visual resource inventory of scenic values (BLM)
VRM	Visual resource management
WECC	Western Electricity Coordinating Council
WO	Washington Office
WWEC	West-wide Energy Corridor

Appendix A – Proponent's Purpose and Need

APPENDIX A – PROPONENT'S PURPOSE AND NEED FOR THE PROJECT

A.1 Introduction

In the recent past, the Intermountain area experienced more than a decade of economic prosperity and growth. This, coupled with an increase in per-customer electric usage, has resulted in a significant increase in the overall demand for electricity. As a result of this growth, system studies indicate the southwest Utah transmission system will be utilized fully by 2014. Consequently, Rocky Mountain Power (a business unit of PacifiCorp) needs to increase its existing transmission capacity by 2014. In addition, the southwest Utah area's electric load is fed from the existing 345-kilovolt (kV) Sigurd to Three Peaks to Red Butte transmission line, and a second 345kV transmission line between the Sigurd and Red Butte substations in a different corridor is needed to add reliability in case of a potential transmission outage in the area that could interrupt electric supply to customers. These needs are further substantiated by regional transmission studies that recommend the construction of an additional extra-high-voltage transmission line from the existing Sigurd Substation to the existing Red Butte Substation to increase system capacity in the transmission grid, improve system reliability, and meet Rocky Mountain Power's (the Company's) responsibilities as an essential service provider and regulated utility (Southwest Utah Technical Studies Group 2009). Therefore, the Company's purpose of the Sigurd to Red Butte No. 2 – 345kV Transmission Project (Project) is to increase system capacity, improve reliability, and meet the Company's responsibilities as an essential service provider and regulated utility by constructing a new 345kV transmission line between the Sigurd and Red Butte substations in a different corridor (to the maximum extent practicable) than the existing Sigurd to Three Peaks to Red Butte transmission line.

A.2 Need as a Regulated Utility

One purpose of the Project is to support directly PacifiCorp's obligations as a regulated utility, including its need to:

- Meet U.S. Federal Energy Regulatory Commission (FERC) Open Access Transmission Tariff (OATT) contract obligations for load service, transmission service, and transmission access
- Comply with mandatory North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) Bulk Electric System Reliability Standards
- Address reliability and system constraints within its existing transmission system that necessitate the development of additional transmission capacity
- Provide increased capacity as required to serve existing and growing loads
- Provide safe, reliable, adequate, and efficient electricity to its customers

The Company's regulatory obligations are further explained in detail in the following.

A.2.1 Regulatory Context

PacifiCorp is an electric utility that transmits electricity via a grid of transmission lines located throughout a six-state region and a distribution system that serves approximately 1.7 million retail customers. Rocky Mountain Power delivers electricity to customers in Utah, Wyoming, and Idaho. As an essential service provider, Rocky Mountain Power is required to operate under the oversight and regulatory controls of the Public Service Commission of Utah, the Wyoming Public Service Commission, and the Idaho Public Utility Commission. Pacific Power, another business unit of PacifiCorp, provides service to customers in Oregon, Washington, and California and is subject to the regulatory oversight of the Oregon Public Utility Commission, the Washington Utilities and Transportation Commission, and the California Public Utilities Commission. Although the objectives of these multiple commissions vary somewhat, they do share a common goal of ensuring utilities such as Rocky Mountain Power provide safe, reliable, adequate, and efficient delivery of electricity.

The Company is also a federally regulated utility that operates under the jurisdiction of the FERC. As provided in PacifiCorp's OATT under Sections 15.4, 28.2, and 28.3, PacifiCorp is obligated to expand its transmission system to provide requested Firm Transmission Service (transmission service that may not be interrupted for any reason except during an emergency when continued delivery of power is not possible). It is also obligated to provide sufficient capacity to deliver resources reliably to Network and Native Load Customers. PacifiCorp's Attachment K of the OATT also requires planning for the expansion of the system to ensure its transmission system meets industry, regulatory, and reliability standards. The Project is needed to ensure these long-term requirements are met.

The Company must also comply with the National Electric Safety Code (NESC) C2-2007, which establishes minimum electrical safety rules and design for transmission lines. The NESC Section 1, page 1, General Rules paragraph 012 C. (Institute of Electrical and Electronics Engineers 2007) states:

> For all particulars not specified in these rules, construction and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the construction or maintenance of communication or supply lines and equipment.

This mandates the Company follow other industry standards, requirements, and guidelines, in addition to applying its firsthand practical experience when planning, siting, designing, and constructing its electric transmission system.

The NERC is another regulatory body under which the Company must operate. In 2007, FERC certified NERC as an Electric Reliability Organization. In so doing, NERC acquired the legal authority to enforce reliability standards with all users, owners, and operators of the bulk power system in the United States, and made compliance with those standards mandatory and enforceable. Transmission systems in the United States, like the proposed Project, must be planned, operated, and maintained under NERC reliability standards. Furthermore, a primary driver behind this Project is the NERC requirement that the Company have a forward-looking and long-range transmission plan to meet current and forecasted customer needs.

The WECC has been designated as a Regional Reliability Organization, certified and supervised by NERC and FERC. It is responsible for coordinating expansion and ensuring bulk electric system reliability in the Western Interconnection (one of the two major alternating current power grids in North America, the other being the Eastern Interconnection). In addition, WECC provides an environment for coordinating the planning, capacity rating, and operational limits for the interconnected system via the activities of its members as set forth in the WECC Bylaws. As such, WECC is required to enforce

standards set by NERC and can develop and enforce additional FERC-approved regional reliability standards necessary in the West. In compliance with these standards, transmission systems must be built with sufficient levels of redundancy to enable the transmission system to operate reliably in the event of loss or outage of the system elements (i.e., transmission line segments or substation elements).

The Energy Policy Act of 2005 provided a framework for enforceable reliability standards. The FERC and NERC can impose civil penalties of up to $1 million per day, per violation. The penalty amount is based on guidance that takes into account a number of factors, including the severity of the violation, the risk to the reliability of the bulk power system caused by the violation, and the responsible entity's compliance efforts. At the federal level, FERC may also impose penalties for noncompliance with reliability standards. On a regional scale, NERC regional councils, in this case WECC, their members (including PacifiCorp), and all other electric industry participants, are required to comply with all applicable NERC standards, including, but not limited to, NERC TPL (Planning) and TOP (Operating) standards that provide minimum requirements for how the system must be planned and operated.

A.2.2 NERC and WECC Reliability Standards and Performance Criteria

NERC and WECC are focused on reliability through two overarching methods: (1) enforcement of mandatory NERC reliability standards and WECC criteria and (2) application of WECC policies and procedures. NERC and WECC require Transmission Providers like the Company to meet certain performance requirements during normal operation and system outage events. They also require detailed risk assessments of system impacts that would result from a multitude of outage scenarios. Compliance with these standards and regional criteria falls on the responsibility of Rocky Mountain Power as a Transmission Owner and Transmission Planner under NERC registration.

Consequently, the following NERC and WECC standards and criteria apply to Rocky Mountain Power's transmission system and its design of the proposed Project, including, but not limited to:

- TPL 001: Category A – System Performance Under Normal (No Contingency) Conditions
- TPL 002: Category B – System Performance Following Loss of a Single Bulk Electric System Element
- TPL 003: Category C – System Performance Following Loss of Two or More Bulk Electric System Elements
- TPL 004: Category D – System Performance Following Extreme Events Resulting in the Loss of Two or More Bulk Electric System Elements

WECC criteria under which Rocky Mountain Power is governed include:

- TPL 001 – WECC-1-CR System Performance Criteria Normal Conditions
- TPL 002 – WECC-1-CR System Performance Criteria Following Loss of a Single Bulk Electric System Element
- TPL 003 – WECC-1-CR System Performance Criteria Following Loss of Two or More Bulk Electric System Elements
- TPL 004 – WECC-1-CR System Performance Criteria Following Extreme Bulk Electric System Events (WECC 2008)

Some WECC criteria are additional (more restrictive) to NERC TPL Standards, including WECC's voltage and frequency performance requirements. For example, NERC standard TPL 003 C.5 requires Rocky Mountain Power to plan "for an event that results in the loss of two or more elements specifically

addressing an outage of any two circuits of *a multi-circuit tower line* (i.e., loss of a double-circuit structure or other common mode of failure that results in the simultaneous loss of two circuits)" [italics added] (NERC 2008). Whereas the WECC regional planning TPL-002-WECC-1-CR goes further and stipulates that the NERC TPL 003 C.5 initiating event shall *also* apply to the common mode contingency (one event causes multiple facilities to trip) of two adjacent circuits *on separate towers* unless the frequency is determined to be less than 1 in 30 years [italics added]. In this case, the WECC requirement extends beyond the NERC standard because it applies to cases where two transmission circuits are installed on common structures *or* are located adjacent to each other, which is a frequent condition for many of the alternatives proposed in the Project. This means the utility, at a minimum, must plan for loss of multiple circuits simultaneously such that the system has adequate redundancy to withstand such an outage without affecting any of the grid's electrical consumers.

The NERC and WECC standards and criteria are performance-based. Therefore, they do not dictate the site-specific locations of proposed transmission lines. The physical arrangement of new and existing lines and corridors is left up to the Transmission Provider because it is most knowledgeable about the best method to meet system performance requirements and manage reliability risks and costs. Should a Transmission Provider fail to meet NERC standards and WECC criteria, resulting in widespread uncontrolled loss of generation or customer demand, WECC System Performance Criteria TPL-004 WECC-1-CR, Requirement WRS5, states that "for any event that has actually resulted in cascading, the Planning Authority or Transmission Planner shall have documentation that it has taken action so that future occurrences of the event will not result in cascading, or it must have documentation that it has WECC Planning Coordination Committee) approval that the Mean Time Between Failure is greater than 300 years (frequency less than .0033 outages/year)" (WECC 2008). Severe measures would be required to meet this elevated level of required system performance.

NERC Transmission Planning Standard TPL 002 states that "system simulations and associated assessments are needed periodically to ensure that reliable systems are developed that meet specified performance requirements with sufficient lead time, and continue to be modified or upgraded as necessary to meet present and future system needs." This means that the Company must have a forward-looking transmission plan of action to serve current and anticipated future customer demands reliably under all expected operating conditions, including normal system operations (all system elements in service) and during system contingencies (where elements of the transmission system are out of service) both planned or unplanned.

Collectively, these standards intend to protect the West's interconnected electrical grid by dictating minimum performance levels of transmission system reliability for projects like the proposed Project. In the event a transmission line fails to perform in accordance with these standards, the Company would be required to remedy the problem to the satisfaction of WECC, which historically has resulted in restricting the operating capacity of the lines to levels that will not cause disruptions to the grid and/or the construction of additional transmission line(s).

A.2.3 WECC Transmission Corridors

WECC's definition for a common corridor is a "contiguous right-of-way or two parallel rights-of-way with structure centerline separation less than the longest span length of the two transmission circuits at the point of separation or 500 feet, whichever is greater, between the transmission circuits. This definition does not apply to the last five spans of the transmission circuits entering into a substation" (WECC 2008). The "longest span" fluctuates based on the voltage of the line and the terrain. Planning requires a technical risk analysis of the consequences of a major disturbance involving two or more extra-high-voltage lines. The WECC studies are intended to account for "unanticipated" outages or, in other words,

events and circumstances not predictable but certainly deemed credible due to the utility's system operating experience and history. Within the proposed Project area, there are two other existing extra-high-voltage lines (the Intermountain Power Project 500kV and Sigurd to Three Peaks to Red Butte 345kV transmission lines) that Rocky Mountain Power must consider when siting the proposed Project. If the proposed Project and the existing extra-high-voltage lines are all colocated in the same corridor, then Rocky Mountain Power must be able to demonstrate it has an acceptable back-up plan in place should they be simultaneously out of service for any reason. For Rocky Mountain Power to serve immediate future loads reliably within the southwest Utah area, a new transmission line needs to be designed such that it meets NERC and WECC planning and reliability criteria by being built in an alignment that is not considered as an adjacent circuit to the existing Sigurd to Red Butte 345kV – No. 1 transmission line.

A.2.4 Use of Federally Designated Corridors

As part of its original feasibility analysis, the Company considered routes in federally designated corridors located within the Project area, but suggested the removal of some from further consideration based upon many factors, including its fundamental need to comply with NERC and WECC requirements. The Westwide Energy Corridor (WWEC) Programmatic Environmental Impact Statement (PEIS) confirms that compliance with NERC and WECC standards is essential to reliability by stating in Chapter 2.6.3:

> One area where the [NERC and WECC] reliability standards or criteria critically dictate corridor specifications is with respect to the distance separations between multiple bulk electricity transmission lines located in common or adjacent corridors. Reliability criteria recently proposed by WECC address the potential for simultaneous or successive failures of multiple transmission lines within a common corridor or within parallel adjacent corridors. These proposed WECC reliability criteria establish regional differences from NERC reliability standards TPL-001 through TPL-004 and require transmission system planners and designers to address the likelihood and consequences of the simultaneous or successive outages of multiple lines (cascading) due to what WECC system operators have determined to be credible events, including the simultaneous loss of two adjacent lines occurring at a frequency greater than once every 300 years (Argonne National Laboratories 2008).

The WWEC PEIS continues to add that:

> Compliance with NERC and regional reliability standards is essential to guaranteeing the reliability of the nation's bulk electricity transmission network and nothing in this PEIS, including the establishment of energy corridors that subsequently may result, contravenes, replaces, or relaxes the applicability or enforceability of NERC or WECC reliability standards or the supporting directives to member organizations contained in WECC reliability criteria. In those instances where the postulated specifications of hypothetical energy corridors are inconsistent with the reliability standards or criteria, those specifications shall be deemed moot, replaced with specifications consistent with the applicable standards or criteria (Argonne National Laboratories 2008).

A.2.5 Company and Industry Experience

The Company has significant experience that shows multiple transmission lines located in the same general proximity have experienced significant simultaneous outages due to a variety of causes,

including, but not limited to, fire and smoke, high winds, dust storms, ice storms, blizzards, lightning, landslides, earthquakes, vandalism, tower or conductor failure, equipment failure, airplane collisions, and other experience. Examples include:

- 1981: Due to a human-caused fire, two 345kV lines north of Camp Williams were forced out of service and a third 345kV line cascaded, resulting in a Utah state-wide blackout.
- 1982–1983: Landslides on the two Emery to Sigurd 345kV lines destroyed transmission towers.
- 1983: Severe wind storms destroyed sections of two 345kV, two 230kV, and three 138kV lines between Salt Lake City and Ogden.
- 1990: An Air Force jet practicing touch-and-go landings at the Salt Lake International Airport clipped an overhead shield wire with its fuel tank which wrapped around the double-circuit 345kV and 230kV lines between Terminal and Ben Lomond substations causing outages between Terminal and Ben Lomond.
- 2000: Fires in the corridor of Emery to Camp Williams and Huntington to Spanish Fork 345kV lines forced lines out of service.
- 2002–2003: Multiple fires in the corridor between Mona and Camp Williams forced lines out of service due to smoke and to protect fire fighters in the area.
- 2007: A fire caused both the Mona to Huntington and the Mona to Bonanza 345kV lines in Central Utah to be de-energized for fire crew safety.
- 2007: Three 345kV lines connecting Jim Bridger, Wyoming, to southeast Idaho experienced a fire that forced multiple lines out of service. It should be noted that this area would not reasonably be considered as densely forested.

In addition to the Company's experience, other significant system outages have been experienced by other utilities in the WECC:

- 1990: Fires caused six simultaneous outages (along with 17 single line outages) of two Round Mountain to Table Mountain 500kV lines in northern California. Fires burned randomly back and forth across the corridor for more than 12 miles. Customer load interruptions ranged from 90 megawatts (MW) to 1,000 MW at times.
- 1993: High winds caused the loss of two adjacent 500kV line towers on the Pacific Intertie and the resulting power outage left an estimated 5.2 million customers in several states without power. This simultaneous loss of two major extra-high-voltage lines serving southern Oregon and California resulted in a system reliability and capacity review. The result of the review was the requirement in 1993 to build a new (third) 500kV transmission line across the Pacific Intertie to restore capacity and improve reliability.

A.3 Need to Improve Capacity

A.3.1 Current and Projected Electrical Demand

Rocky Mountain Power and Pacific Power serve retail electric customers in the states of California, Idaho, Oregon, Utah, Washington, and Wyoming (native load).

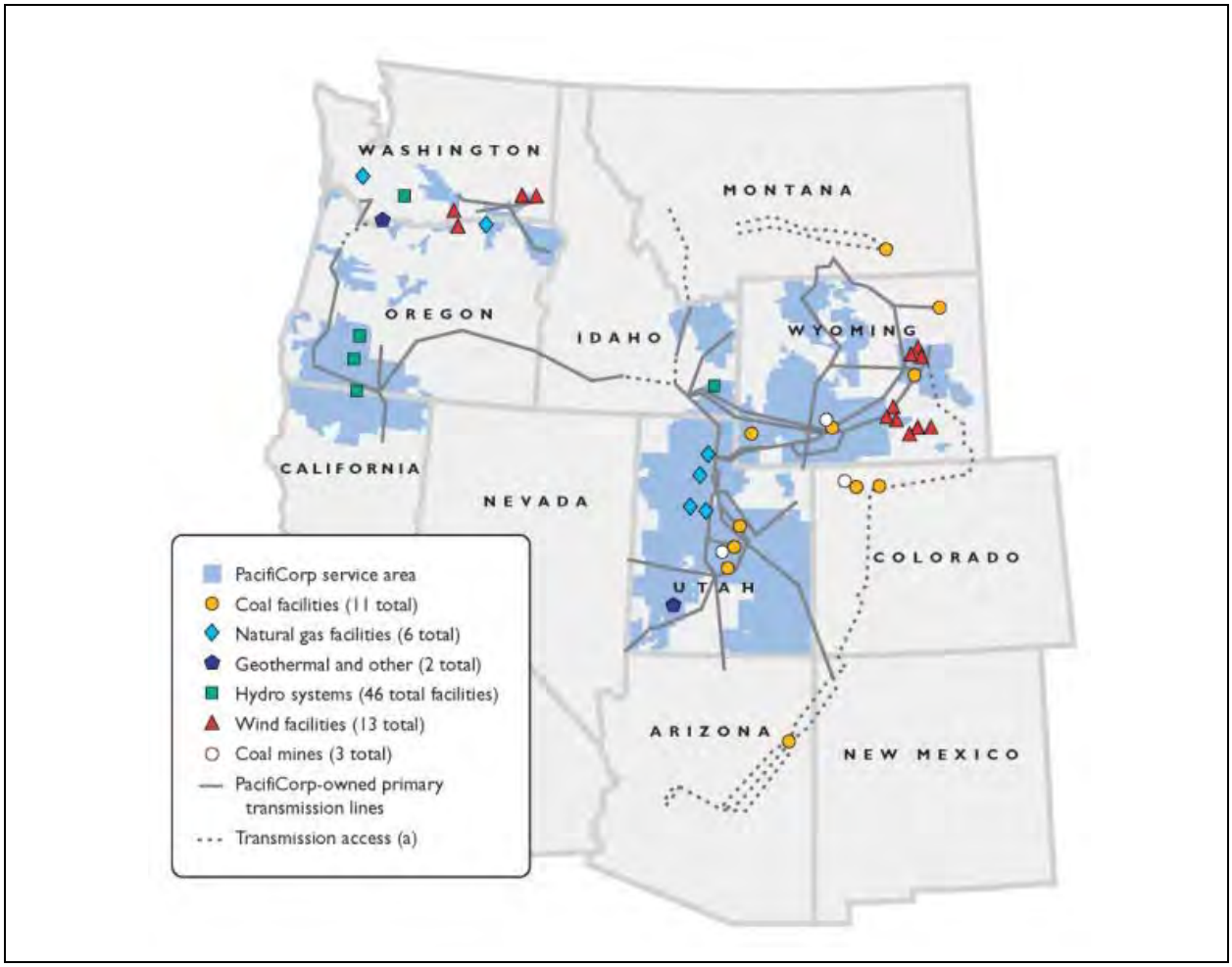


Figure A-1 PacifiCorp Service Territory

Between 1997 and 2009, the population in the counties served by Rocky Mountain Power has grown substantially[1]. Along with this growth there has been an even greater growth in the demand for electricity[2]. As a regulated utility serving these counties, Rocky Mountain Power has an obligation to provide safe reliable service to existing and future customers on a nondiscriminatory basis. Rocky Mountain Power currently forecasts an increase in overall peak demand at 2.2 percent each year over the next 5 years and by 2.4 percent each year over the next 10 years[3].

[1] SOURCE: Global Insight state and county estimates, February 2009
[2] SOURCE: Rocky Mountain Power billing system
[3] SOURCE: Rocky Mountain Power Integrated Resource Plan, October 5, 2010

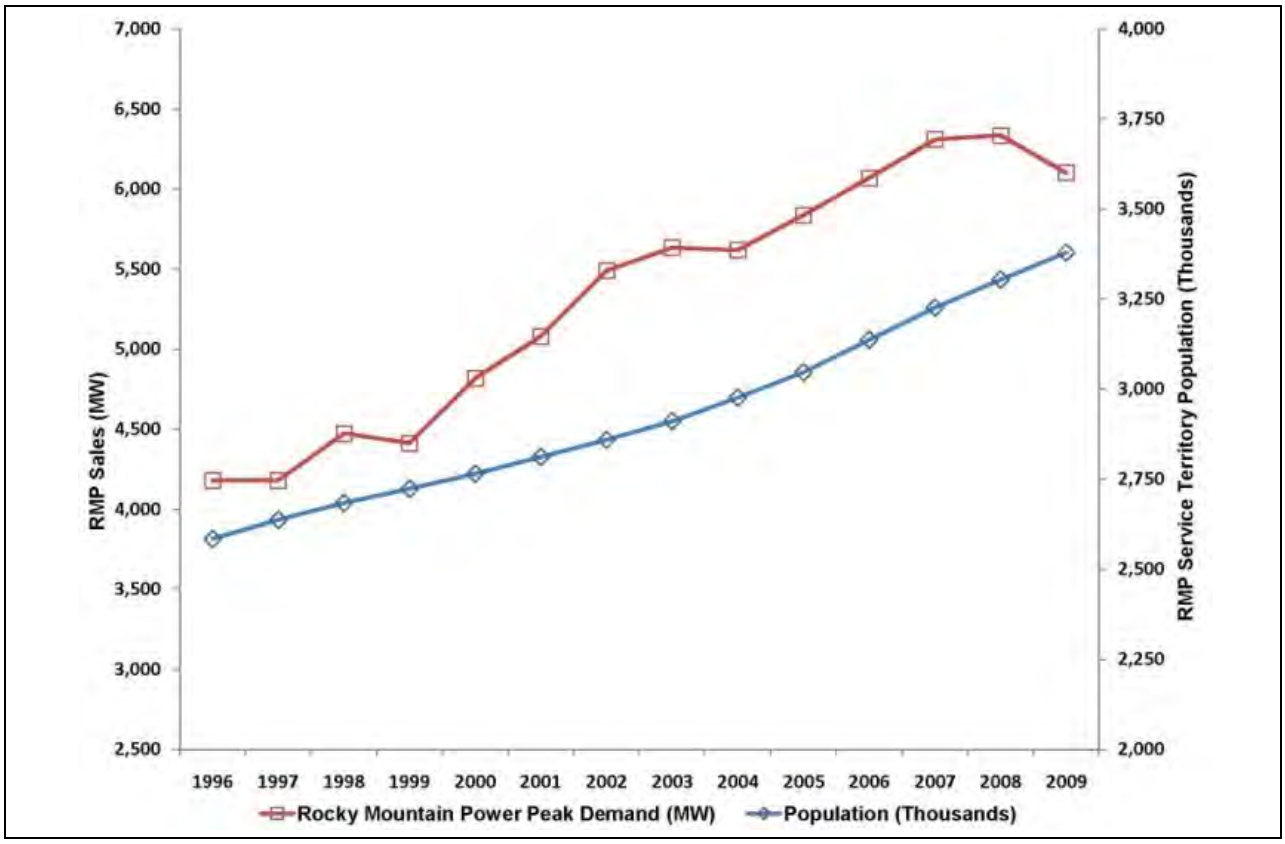
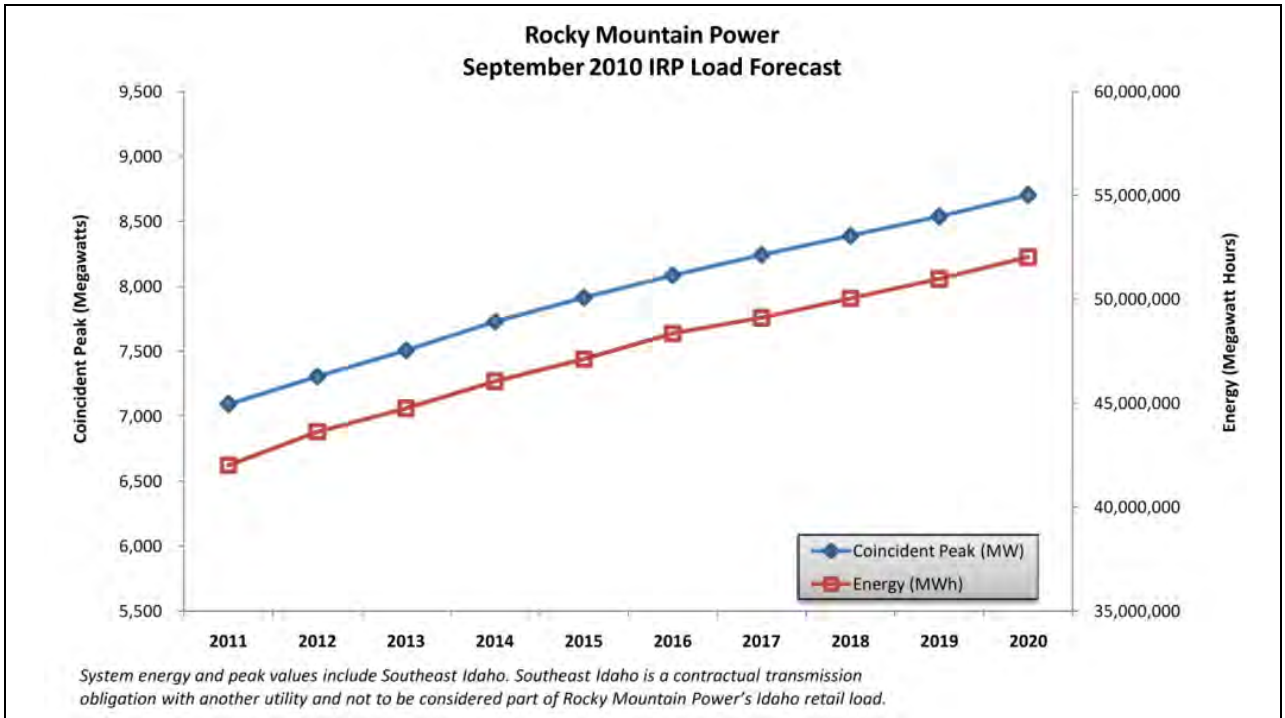


Figure A-2 Energy Demand Since 1996



SOURCE: Data is provided by PacifiCorp Integrated Resource Plan (October 5, 2010 Public Input Meeting Presentation)

Figure A-3 Projected Peak Demand and Energy Usage

PacifiCorp forecasts its load growth for retail customers in Utah alone will increase by more than 1,000 MW in 10 years. These forecasts are based on the integrated resource plans prepared by PacifiCorp as required to fulfill the regulatory requirements and guidelines established by the public utility commissions of the states PacifiCorp serves. The integrated resource plan also addresses the obligations of PacifiCorp pursuant to its OATT to plan for, and expand, its transmission system in a non-discriminatory manner based on the needs of its native load customers, network customers, and all eligible customers that agree to expand their transmission systems. This includes entities that generate, or plan to generate, electricity, including coal-fired, natural-gas-fired, and renewable energy sources (wind and geothermal). Therefore, in addition to ensuring both existing and future transmission capacity is available to meet the needs of its retail and native load customers, PacifiCorp has an obligation to meet the growing needs of other network customers. PacifiCorp provides network service to 11 utilities, which in turn provide electric service to retail customers.

Load projections provided by each of the participating transmission utilities in southwest Utah are summarized in Figure A-4. Each participant is required to provide PacifiCorp with forecasted load information consistent with the most recent Loads and Resources 10-Year Forecast submitted annually to PacifiCorp transmission services. These network customers (including Deseret Generation and Transmission [DG&T] and the Utah Associated Municipal Power Systems [UAMPS]) estimate their demand for electricity will grow by an average of 4 percent over the next 10 years.[4]

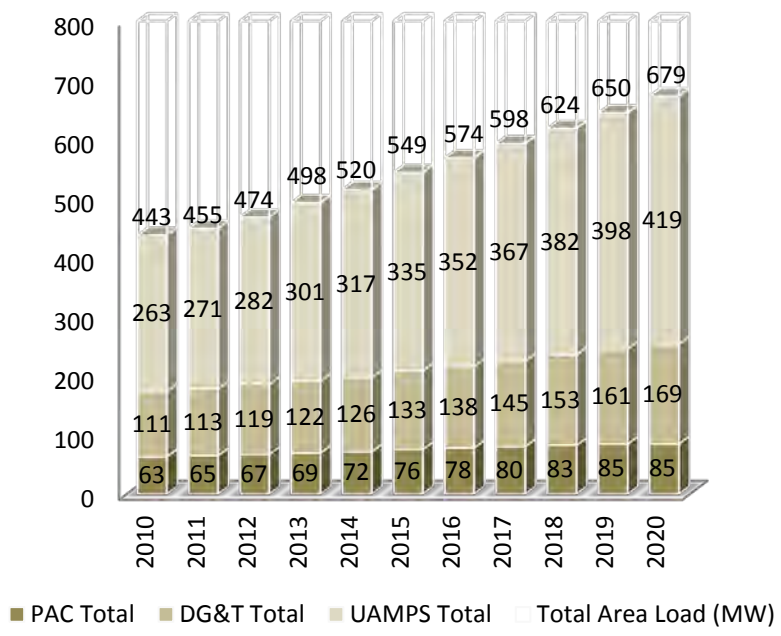


Figure A-4 Southwest Utah Load Projections

These projections suggest a substantial growth rate throughout the forecast period, demonstrating that between 2010 and 2020 the southwest Utah transmission load is expected to increase by approximately 236 MW, from 443 MW to 679 MW.

[4] Data taken from customer submitted Load and Resources information from 2008.

In addition to these forecasts, PacifiCorp periodically performs studies in cooperation with other southwest Utah transmission providers and load-serving entities to assess the transmission system needs in the area, such as the most recent Southwest Utah Planning Study Report done in 2009. This study concluded that prior to 2014 there is a need to install other substation facilities to support southwest Utah load growth while simultaneously maintaining the maximum system transfer capability for imports and exports. However, the study also found that while these additional substation facilities will enable the system to serve both load and transfer requirements through the summer of 2013, a new Sigurd to Red Butte 345kV transmission line will still be needed for the summer of 2014 and beyond (Southwest Utah Technical Studies Group 2009).

A.3.2 Existing Capacity

Capacity refers to the amount of power a transmission line (or set of lines in a transmission path as described in the following) can deliver reliably. Capacity is measured in MW and is limited by the current (in amperes) the line, or groups of lines for a path, can carry, or the minimum voltage levels at the substations. Multiple transmission lines generally located in similar alignments and operating electrically in parallel are referred to as electrical transmission paths. Each transmission line in a given path has an assigned capacity rating, which determines the limits of its operable range. The rating is determined by a regional transmission organization, such as WECC. The members collectively agree upon a rating based upon the results of detailed technical studies performed by the owner/operator of each proposed system facility addition. These studies evaluate the new facility's effects upon the overall transmission path's reliability under all conditions, such as thermal overload, instability, congestion, and other considerations. All ratings are done in conformance with accepted industry practice, NERC Standards, and WECC criteria and policies.

Existing capacity in the southwest Utah area is limited due to the capability of the existing transmission lines serving the area, particularly out of the Red Butte Substation. The southwest Utah area is principally served from the Red Butte 345kV substation via a single 345kV line and a single 230kV line, both originating from the Sigurd substation. The existing Sigurd to Three Peaks to Red Butte 345kV line, which extends to the Harry Allen Substation in southern Nevada, serves a dual purpose of importing/exporting power into southern Utah and serving the native southwest Utah area load.

A.3.3 Need to Allow Power Sales, Transfers, and Purchases

PacifiCorp's wholesale transmission services are regulated by FERC under cost-based regulation subject to PacifiCorp's OATT, which requires it to provide transmission service to eligible wholesale customers. PacifiCorp's transmission business operates independently and markets its transmission services using an Open Access Sametime Information System. Power transfers into and through southern Utah are made via the existing Sigurd to Three Peaks to Red Butte 345kV line. South of Red Butte, the Red Butte to Harry Allen 345kV regional transmission tie line is used to transfer power from southwest Utah to southern Nevada and vice versa

The current system supports up to 300 MW of transfers (bi-directional) between southwestern Utah and Nevada. As a result of this Project and other Company projects underway in the area, the capacity of the existing system is planned to increase by 300 MW for a total system planned capacity of 600 MW (bi-directional). This additional transmission capacity can be used by the Company to make off-system sales during periods of surplus energy, and under its OATT the Company can provide firm transmission services to third parties in the Region, both of which provide benefits to the Company's customers by reducing their overall energy costs.

A.3.4 Service Load

The proposed Project will not only support future electrical load growth in southwestern Utah, but also will improve the ability of PacifiCorp's transmission system to transport energy into central Utah and to growth areas along the Wasatch Front. Due to the interconnected nature of its transmission system, this Project will benefit PacifiCorp's system and the Western Interconnection in a regional context.

A.3.5 Access to Potential Renewable/Generation Sources

The additional transmission line proposed will provide improved access to markets, existing and new generation sources, and thereby provide options to integrate new energy resources, including renewable energy. In this regard, this project supports PacifiCorp's current and future integrated resource plans. While there are several renewable projects under development in Beaver County, the proposed Project is independent of, and would be built regardless of, those new generation projects.

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Appendix B – Agency and Stakeholder Meetings

APPENDIX B – AGENCY AND STAKEHOLDER MEETINGS

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
Bureau of Land Management (BLM) and U.S. Forest Service (USFS)		
November 8, 2008	▪ BLM Utah State Office ▪ BLM Color Country District ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office	Introduce and discuss the Sigurd to Red Butte No. 2 – 345-kilovolt Transmission Project (Project).
November 12, 2008	USFS Fishlake National Forest	Introduce and discuss the Project.
November 13, 2008	USFS Dixie National Forest	Introduce and discuss the Project.
November 18, 2009	▪ BLM Utah State Office ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office	Introduce and discuss the Project.
February 25, 2009	▪ BLM Utah State Office ▪ BLM Kanab Field Office ▪ BLM Color Country District ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office ▪ USFS Dixie National Forest	Introduce and establish working relationships between BLM, USFS District staffs, and EPG, Inc., the third-party National Environmental Policy Act contractor; identify BLM resource databases the consultant will need to prepare the environmental impact statement (EIS); and discuss preliminary alternative routes.
March 19, 2009	▪ BLM Utah State Office ▪ BLM Fillmore Field Office ▪ BLM Salt Lake Field Office ▪ USFS Uinta-Wasatch-Cache National Forest ▪ USFS Fishlake National Forest ▪ USFS Region 4 ▪ Utah Governor's Energy Advisor's Office	Introduce and establish working relationships between BLM, USFS District staffs, and EPG, Inc., the third-party National Environmental Policy Act contractor; identify BLM resource databases the consultant will need to prepare the EIS; and discuss preliminary alternative routes.
September 13, 2011	▪ BLM Project Manager ▪ Beaver County ▪ EPG	Meeting with Beaver County staff, County Commission and First Wind
Cooperating Agencies		
June 4, 2009	Agency Interdisciplinary (ID) Team Meeting No. 1: ▪ BLM Wyoming State Office ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office ▪ BLM Fillmore Field Office ▪ USFS TEAMS ▪ USFS Dixie National Forest ▪ USFS Fishlake National Forest	Introduce the Project to the Agency ID Team.

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
October 14, 2009	Cooperating Agency Meeting: ▪ BLM Las Vegas Field Office ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office ▪ USFS Dixie National Forest ▪ USFS TEAMS ▪ Utah Governor's Public Lands Policy Coordination Office (PLPCO) ▪ Utah Division of Wildlife Resources (UDWR) Southern Region ▪ Beaver County ▪ Millard County ▪ Sevier County ▪ City of St. George	Inform the cooperating agencies of the following: ▪ An environmental assessment will be prepared for the geotechnical investigations ▪ An EIS will be prepared for the Project ▪ Public scoping and upcoming meetings
January 29, 2010	Conference Call: ▪ BLM Wyoming State Office ▪ BLM Fillmore Field Office ▪ BLM Cedar City Field Office ▪ USFS ▪ Beaver County ▪ Iron County ▪ Sevier County ▪ Washington County ▪ City of St. George	Prepare for public scoping.
March 25, 2010	Agency ID Team Meeting No. 2: ▪ BLM Wyoming State Office ▪ BLM Fillmore Field Office ▪ BLM Cedar City Field Office ▪ BLM St. George Field Office ▪ USFS Dixie National Forest ▪ USFS TEAMS ▪ USFS Uinta-Wasatch-Cache National Forest ▪ USFS Caribou-Targhee ▪ PLPCO ▪ UDWR ▪ Fremont Indian State Park ▪ Beaver County ▪ Millard County ▪ Iron County ▪ Enterprise City ▪ City of St. George	▪ Review results of agency and public scoping. ▪ Review approach to impact assessment and mitigation planning. ▪ Review alternative route comparison process. ▪ Review resource data inventory and collection. ▪ Review and discuss alternative routes to be considered in detail in EIS.

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
July 15, 2010	Agency ID Team Meeting No. 3: ▪ BLM Wyoming State Office ▪ BLM Fillmore Field Office ▪ BLM Cedar City Field Office ▪ BLM Richfield Field Office ▪ USFS Dixie National Forest ▪ USFS Fishlake National Forest ▪ USFS TEAMS ▪ USFS Uinta-Wasatch-Cache National Forest ▪ USFS Caribou-Targhee National Forest ▪ PLPCO ▪ UDWR ▪ Beaver County ▪ Millard County ▪ Iron County ▪ Enterprise City ▪ City of St. George	▪ Review the approach and results of impact assessment and mitigation planning. ▪ Review the approach and results of alternative route screening and comparison. ▪ Review and discuss alternative routes to be considered in detail in EIS.
November 9, 2010	Agency ID Team Meeting No. 4: ▪ BLM Utah State Office ▪ BLM Cedar City Field Office ▪ BLM St. George Field Office ▪ USFS Dixie National Forest ▪ USFS Fishlake National Forest ▪ USFS TEAMS ▪ PLPCO ▪ UDWR ▪ Beaver County ▪ Millard County ▪ Iron County ▪ Enterprise City ▪ City of St. George	▪ Review of the Administrative Draft EIS
Tribes		
October 2009	BLM initiated consultation meetings/calls: ▪ Navajo Nation ▪ Hopi Tribe ▪ The Moapa Band of Paiutes ▪ Paiute Indian Tribe of Utah ▪ Northwest Band of Shoshone ▪ Confederated Tribes of the Goshute Indian Reservations ▪ Kaibab Band of Paiute Indians ▪ Ute Indian Tribe	Met with or called the tribes to introduce the Project and invite them to participate in the Section 106 process.
October 7, 2009	Hopi Tribe	BLM met with the tribe to discuss the Project.

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
October 7, 2009	Navajo Nation	BLM met with the tribe to discuss the Project.
October 8, 2009	Moapa Band of Paiute Indians	BLM met with the tribe to discuss the Project.
October 9, 2009	Paiute Indian Tribe of Utah	BLM met with the tribe to discuss the Project.
October 14, 2009	Kaibab Band of Paiute Indians	BLM met with the tribe to discuss the Project.
October 14, 2009	Northwestern Band of Shoshone Nation	BLM met with the tribe to discuss the Project.
April 1, 2010	Kaibab Band of Paiute Indians	BLM provided an update on the status of the Project to the tribe.
April 7, 2010	Northwestern Band of Shoshone Nation	BLM provided an update on the status of the Project to the tribe.
April 14, 2010	Paiute Indian Tribe of Utah	BLM met with the tribe to update the status of the Project and to discuss the tribe's request for an ethnographic overview.
May 25, 2010	Navajo Nation	BLM provided an update on the status of the Project to the tribe.
May 26, 2010	Paiute Indian Tribe of Utah	BLM met with the tribe to update the status of the Project and to discuss the tribe's request for ethnographic work.
May 27, 2010	Ute Indian Tribe	BLM provided an update on the status of the Project to the tribe.
June 30, 2010	Paiute Indian Tribe of Utah	BLM met with the tribe to discuss the request for an ethnographic overview.
July 15, 2010	Paiute Indian Tribe of Utah	Representatives from the tribe participated in the Agency Interdisciplinary Team meeting Cultural Resources Task Group break-out session.
August 2, 2010	Council of Paiute Indian Tribe of Utah	Met with Tribal Council to provide an update of the Project and discuss the Tribal Council's issues and concerns about the Project.
January 4, 2011	Paiute Indian Tribe of Utah	BLM and ethnographer met with Tribal Cultural Resource Coordinator to discuss approach for ethnographic work.
March 22, 2011	Paiute Indian Tribe of Utah	BLM and ethnographer presented approach for ethnographic overview to Tribal Council.
June 21, 2011	Moapa Band of Paiute Indians	BLM provided an update on the status of the Project to the tribe.
June 22, 2011	Kaibab Band of Paiute Indians	BLM provided an update on the status of the Project to the tribe.
June 23, 2011	Paiute Indian Tribe of Utah	BLM met with the tribe to discuss the Programmatic Agreement.

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
July 20, 2011	Hopi Tribe	BLM provided an update on the status of the Project to the tribe.
July 21, 2011	Navajo Nation	BLM provided an update on the status of the Project to the tribe. Also discussed where areas sensitive to the tribe in Washington County and the tribe's interest in participating in the development of the Programmatic Agreement.
September 16, 2011	Paiute Indian Tribe of Utah	BLM provided update to Tribal Council on status of Project and ethnographic work.
September 29, 2011	Paiute Indian Tribe of Utah	BLM provided update to Tribal Council on status of Project and ethnographic work.
October 6, 2011	Northwestern Band of Shoshone Nation	BLM provided an update on the status of the Project to the tribe.
December 1, 2011	Paiute Indian Tribe of Utah	BLM representatives and ethnographer met with Tribal Council to discuss modifying scope for ethnographic work.
December 2, 2011	Paiute Indian Tribe of Utah	Ethnographer met with Tribal Cultural Resource Coordinator to develop revised scope for ethnographic work.
March 2, 2012	Paiute Indian Tribe of Utah	BLM provided Tribal Council an update of the Project; the ethnographer presented the revised approach for the ethnographic work.
March 5, 2012	Paiute Indian Tribe of Utah	BLM provided Band Council an update of the project; the ethnographer presented the revised approach for the ethnographic work.
March 23 to 24, 2012	Paiute Indian Tribe of Utah	Meeting conducted on March 23, 2012, with the Cedar Band in Cedar City to prepare for field visit in Iron and Beaver counties the following day (March 24, 2012)

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
March 30 to 31, 2012	Paiute Indian Tribe of Utah	Meeting conducted on March 30, 2012 with Koosharem Band in Richfield to prepare for field visit in Sevier, Millard, and Beaver counties the following day (March 31, 2012)
April 16, 2012	Paiute Indian Tribe of Utah	BLM provided Tribal Council a copy of the draft Programmatic Agreement for review.
April 27 to 28, 2012	Paiute Indian Tribe of Utah	Meeting conducted on April 27, 2012 , with Shivwits Band in Sham to prepare for field visit in Washington County the following day (April 28, 2012)
May 14, 2012	Paiute Indian Tribe of Utah	Tribal Council will provide BLM comments on the Programmatic Agreement.
Local Governments		
September 17, 2009	Sevier County	Discuss potential land use issues and permitting.
September 28, 2009	Millard County	Discuss potential land use issues and permitting.
September 29, 2009	Town of Elsinore	Discuss potential land use issues and permitting.
September 29, 2009	Town of Joseph	Discuss potential land use issues and permitting.
September 29, 2009	Richfield City	Discuss potential land use issues and permitting.
September 30, 2009	Milford City	Discuss potential land use issues and permitting.
September 30, 2009	Town of Minersville	Discuss potential land use issues and permitting.
October 1, 2009	Beaver City	Discuss potential land use issues and permitting.
October 1, 2009	Iron County	Discuss potential land use issues and permitting.
October 1, 2009	Enterprise City	Discuss potential land use issues and permitting.
September 13, 2011	Beaver County	Conference call to discuss alternative routes and potential land use and cultural resource issues
Other Stakeholders		
August 23, 2011	PacifiCorp, doing business as Rocky Mountain Power (Proponent) and First Wind Corporation	Discuss potential land use conflicts and cultural and biological resource issues with First Wind proposed wind farms and possible solutions
August 29, 2011	Proponent and First Wind Corporation	Discuss potential land use conflicts and cultural and biological resource issues with First Wind proposed wind farms and possible solutions

TABLE B-1
AGENCY AND STAKEHOLDER MEETINGS
NOVEMBER 2008 TO MARCH 2012

Date	Agency/Organization	Meeting Topic
September 20, 2011	Beaver and Millard counties, Proponent, and First Wind Corporation	Discuss potential land use conflicts and cultural and biological resource issues with First Wind proposed wind farms and possible solutions
Interested Parties		
June 7, 2010	Interested Parties Meeting: ▪ BLM Wyoming State Office ▪ BLM Fillmore Field Office ▪ BLM Richfield Field Office ▪ USFS Dixie National Forest ▪ Utah State Historic Preservation Officer ▪ PLPCO ▪ Old Spanish Trail Association ▪ Old Spanish Trail Association Utah ▪ Old Spanish Trail Association Nevada ▪ Utah Rock Art Research Association ▪ We Nooch Society ▪ LDS Church Historical Department ▪ National Trust for Historic Preservation ▪ Milford Archaeological Research Institute	Agencies met with the non-governmental interested parties that responded to the BLM's invitation (letter dated May 19, 2010) to participate in the National Historic Preservation Act Section 106 process to discuss the Project, the organizations' concerns and issues, and the Programmatic Agreement

TABLE B-2
PROPONENT-INITIATED PUBLIC OUTREACH SUMMARY (MAILINGS)
JANUARY 2009 TO OCTOBER 2011

Mailing Type	Date	Number of Copies Sent
Company Newsletter	January 2010	3,890 print copies
Letter to Landowners	January 2010	3,885 print copies
NOTE: Information provided by the Proponent (PacifiCorp, doing business as Rocky Mountain Power).		

TABLE B-3
PROPONENT-INITIATED PUBLIC OUTREACH SUMMARY (MEETINGS)
JANUARY 2009 TO APRIL 2012

Meeting Type/Title	Date	City, State
Meeting with Six County Association of Governments	January 7, 2009	Richfield, Utah
Meeting with the Paiute Tribal Council	January 7, 2009	Cedar City, Utah
Meeting with Five County Association of Governments	January 21, 2009	St. George, Utah
Project Briefing with Washington County Staff	February 3, 2009	St. George, Utah
Project Briefing with Iron County Staff	February 9, 2009	Cedar City, Utah
Project Briefing with Southwest Utah Technical Task Force	March 9, 2009	St. George, Utah
Project Briefing with Southwest Utah Technical Task Force	August 26, 2009	St. George, Utah
Project Briefing with Beaver County Coordinating Council	August 27, 2009	Beaver, Utah
Project Briefing with Iron County Staff	August 31, 2009	Cedar City, Utah
Project Briefing with Sevier County Commission and Staff	October 5, 2009	Richfield, Utah
Project Briefing with Richfield City Staff	October 5, 2009	Richfield, Utah

TABLE B-3
PROPONENT-INITIATED PUBLIC OUTREACH SUMMARY (MEETINGS)
JANUARY 2009 TO APRIL 2012

Meeting Type/Title	Date	City, State
Community Working Group Meeting #1 with Beaver, Iron and Washington Counties	October 19, 2009	Cedar City, Utah
Community Working Group Meeting #1 with Millard and Sevier Counties	October 22, 2009	Richfield, Utah
Permitting Meeting with Washington County Staff	October 26, 2009	St. George, Utah
Permitting Meeting with Iron County Commission and Cedar City Staff	November 9, 2009	Cedar City, Utah
Project Briefing with Southwest Utah Technical Task Force	December 3, 2009	St. George, Utah
Permitting Meeting with Milford City Staff, Planning and Zoning Commission and City Attorney	January 13, 2010	Milford, Utah
Meeting with Beaver City Planning and Zoning, Staff, City Attorney, County Commissioner, and Property Owner	January 19, 2010	Beaver, Utah
Public Landowner Meeting Open House	February 2, 2010	St. George, Utah
Public Landowner Meeting Open House	February 3, 2010	Enterprise, Utah
Public Landowner Meeting Open House	February 4, 2010	Cedar City, Utah
Public Landowner Meeting Open House	February 9, 2010	Milford, Utah
Public Landowner Meeting Open House	February 10, 2010	Richfield, Utah
Project Presentation to Richfield Area Chamber of Commerce	February 10, 2010	Richfield, Utah
Permitting Meeting with Iron County Commission	February 22, 2010	Cedar City, Utah
Project Briefing with Southwest Utah Technical Task Force	February 11, 2010	St. George, Utah
Project Briefing with Iron County Coordinating Council	March 3, 2010	Parowan, Utah
Project Briefing with Millard County Planning Commission	March 7, 2010	Delta, Utah
Community Working Group Meeting #2 with Millard and Sevier Counties	April 14, 2010	Fillmore, Utah
Community Working Group Meeting #2 with Beaver, Iron and Washington Counties	April 15, 2010	St. George, Utah
Project Briefing with Southwest Utah Technical Task Force	May 4, 2010	St. George, Utah
Permitting Meeting with Iron County	June 2, 2010	Cedar City, Utah
Permitting Meeting with Millard County Commission and Staff	June 15, 2010	Fillmore, Utah
Permitting Meeting with Sevier County Staff	July 6, 2010	Richfield, Utah
Permitting Meeting with Elsinore City Staff	July 6, 2010	Elsinore, Utah
Permitting Meeting with Sevier County Commission, Planning Commission and Staff	July 7, 2010	Richfield, Utah
Permitting Meeting with Richfield City Staff	July 7, 2010	Richfield, Utah
Permitting Meeting with Beaver County Planning and Zoning Administrator	July 21, 2010	Beaver, Utah
Permitting Meeting with Washington County Planning and Zoning Administrator	July 21, 2010	St. George, Utah
Permitting Meeting with Beaver County Commission	August 6, 2010	Beaver, Utah
Permitting Meeting with Iron County Commission	August 19, 2010	Cedar City, Utah
Project Briefing with Southwest Utah Technical Task Force	August 24, 2010	St. George, Utah
Permitting Meeting with Millard County Staff	August 27, 2010	Delta, Utah
Project Briefing with Millard County Planning Commission	September 1, 2010	Delta, Utah
Project Briefing with Southwest Utah Technical Task Force	December 7, 2010	St. George, Utah
Community Working Group Meeting #3 with Beaver, Iron, and Washington Counties	January 5, 2011	Beaver, Utah
Community Working Group Meeting #3 with Sevier and Millard Counties	January 6, 2011	Richfield, Utah

TABLE B-3
PROPONENT-INITIATED PUBLIC OUTREACH SUMMARY (MEETINGS)
JANUARY 2009 TO APRIL 2012

Meeting Type/Title	Date	City, State
Project Briefing with Washington County Planning Commission and Staff	January 25, 2011	St. George, Utah
Meeting with the Church of Jesus Christ of Latter Day Saints Manager of Historical Sites	February 2, 2011	Salt Lake City, Utah
Project Briefing with Southwest Utah Technical Task Force	February 22, 2011	St. George, Utah
Permitting Meeting with Millard County Planning Commission and Staff	March 2, 2011	Delta, Utah
Permitting Meeting with Iron County Planning Commission	March 3, 2011	Cedar City, Utah
Permitting Meeting with Sevier County Planning Commission and Staff	March 9, 2011	Richfield, Utah
Permitting Meeting with Washington County Staff	March 9, 2011	St. George, Utah
Permitting Meeting with Elsinore City Planning Commission and Staff	March 9, 2011	Elsinore, Utah
Permitting Meeting with Richfield City Staff	March 9, 2011	Richfield, Utah
Permitting Meeting with Beaver County Planning and Zoning Administrator	March 29, 2011	Beaver, Utah
Permitting Meeting with Washington County Staff	March 29, 2011	St. George, Utah
Project Briefing with Richfield City Planning Commission	April 6, 2011	Richfield, Utah
Project Briefing with Southwest Utah Technical Task Force	April 12, 2011	St. George, Utah
Permitting Meeting with Washington County Staff	June 15, 2011	St. George, Utah
Permitting Meeting with Iron County Staff	June 15, 2011	Cedar City, Utah
Permitting Meeting with Beaver County Planning Commission	June 21, 2011	Beaver, Utah
Community Working Group Meeting #4 with Washington, Iron, and Beaver Counties	June 28, 2011	Fillmore, Utah
Community Working Group Meeting #4 with Sevier and Millard Counties	June 29, 2011	Cedar City, Utah
Permitting Meeting with Washington County Commission	July 13, 2011	St. George, Utah
Permitting Meeting with Richfield City Planning Commission	September 7, 2011	Richfield, Utah
Project Briefing with Southwest Utah Technical Task Force	September 11, 2011	St. George, Utah
Permitting Meeting with Sevier County Planning Commission	September 14, 2011	Richfield, Utah
Meeting with Beaver County staff, County Commission, and First Wind	September 20, 2011	Beaver, Utah
Permitting Meeting with Richfield City Council	September 27, 2011	Richfield, Utah
Permitting Meeting with Washington County Staff	October 4, 2011	St. George, Utah
Permitting Meeting with Washington County Planning Commission	October 11, 2011	St. George, Utah
Permitting Meeting with Washington County Commission	October 18, 2011	St. George, Utah
Permitting Meeting with Sevier County Commission	October 24, 2011	Richfield, Utah
Permitting Meeting with Millard County Planning Commission	January 4, 2012	Delta, Utah
Permitting Meeting with Iron County Planning Commission	January 5, 2012	Cedar City, Utah
Permitting Meeting with Beaver County Planning and Zoning Commission	January 17, 2012	Beaver, Utah
Permitting Meeting with Millard County Planning Commission	February 1, 2012	Delta, Utah
Permitting Meeting with Millard County Commission	February 21, 2012	Fillmore, Utah
Permitting Meeting with Beaver County Commission	March 5, 2012	Beaver, Utah
Permitting Meeting with Beaver County Planning and Zoning Commission	March 13, 2012	Beaver, Utah
Permitting Meeting with County Planning Commission	March 19, 2012	Beaver, Utah

TABLE B-3
PROPONENT-INITIATED PUBLIC OUTREACH SUMMARY (MEETINGS)
JANUARY 2009 TO APRIL 2012

Meeting Type/Title	Date	City, State
Project Briefings with Washington County Commission and the County Administrator	April 20, 2012	St. George, Utah
NOTE: Information provided by the Proponent and collected by EPG		

Appendix C – Alternative Structure Types

APPENDIX C – ALTERNATIVE STRUCTURE TYPES

Alternative structure types have been identified for the Sigurd to Red Butte No. 2 – 345-kilovolt Transmission Project (Project) where typical structures (identified in Chapter 2) may not be sufficient to respond to specific site conditions and engineering design needs. Alternative structure types also may be prescribed as mitigation for environmental impacts. The design of alternative structures may vary depending on the specific engineering or mitigation requirements for a particular location. The exact height and foundation requirements for each structure would be governed by terrain conditions and safety requirements for conductor clearance.

Alternative single-circuit structures include an H-frame deadend structure, H-frame running angle and deadend structures with down guys, three-pole running angle and deadend structures with down guys, and mono-pole tangent and deadend structures. Alternative structures also have been identified for conditions requiring double-circuiting and include double-circuit mono-pole tangent and deadend structures. The various alternative single- and double-circuit structures that may be used for the Project are illustrated in Figures C-1 through C-9.

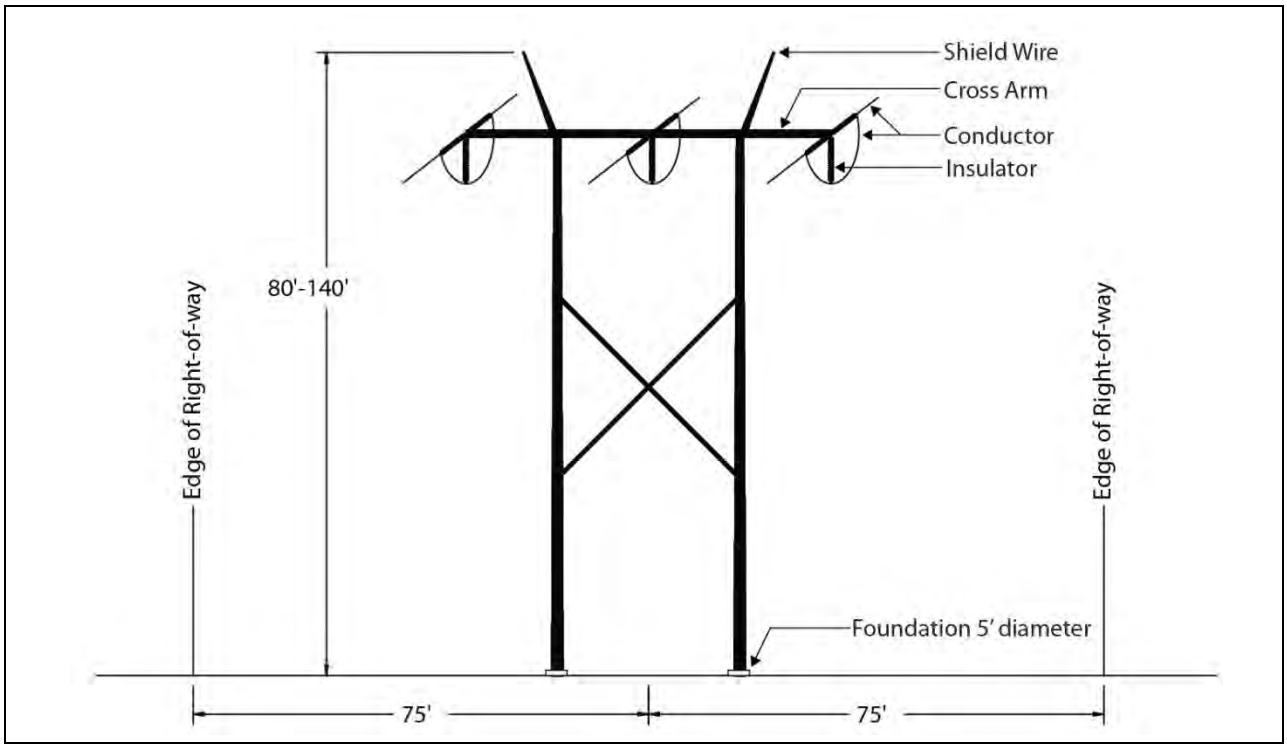

Figure C-1 Single-circuit H-frame Deadend Structure (for angles 0 to 15 degrees)

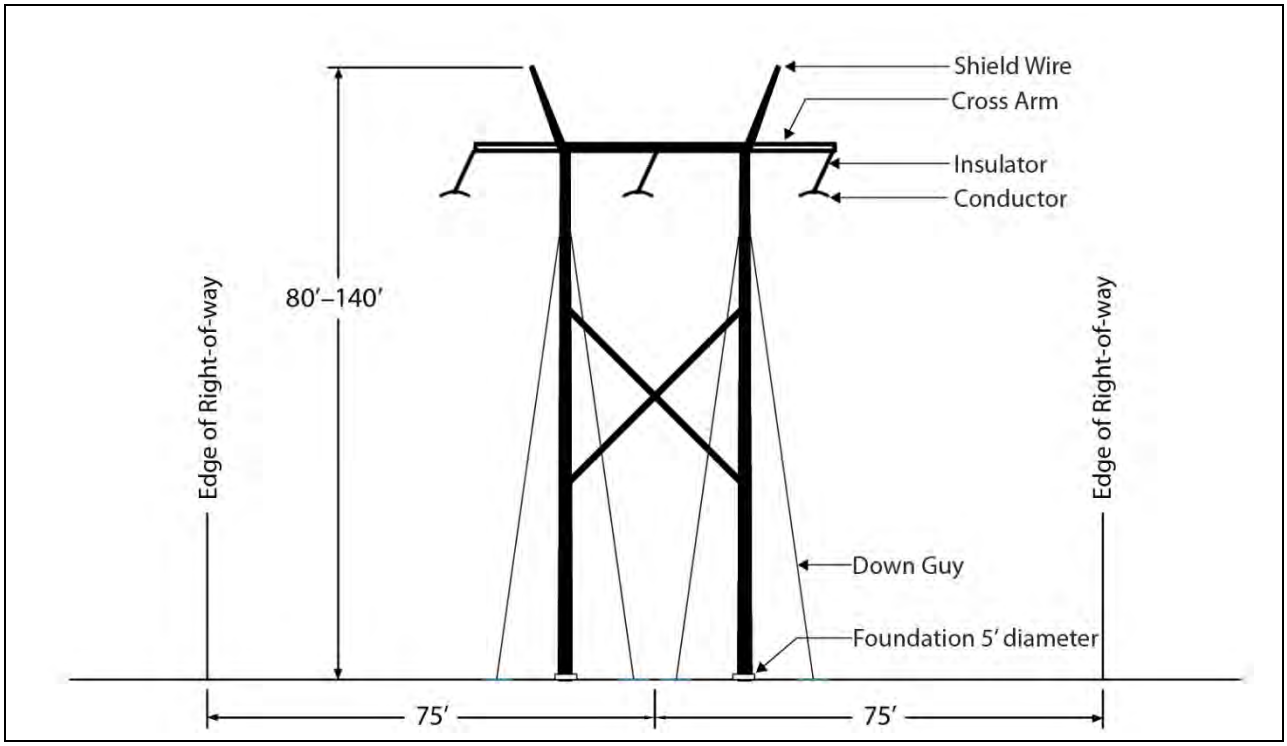

Figure C-2 Single-circuit H-frame Running-angle Structure with Down Guys (for angles 0 to 15 degrees)

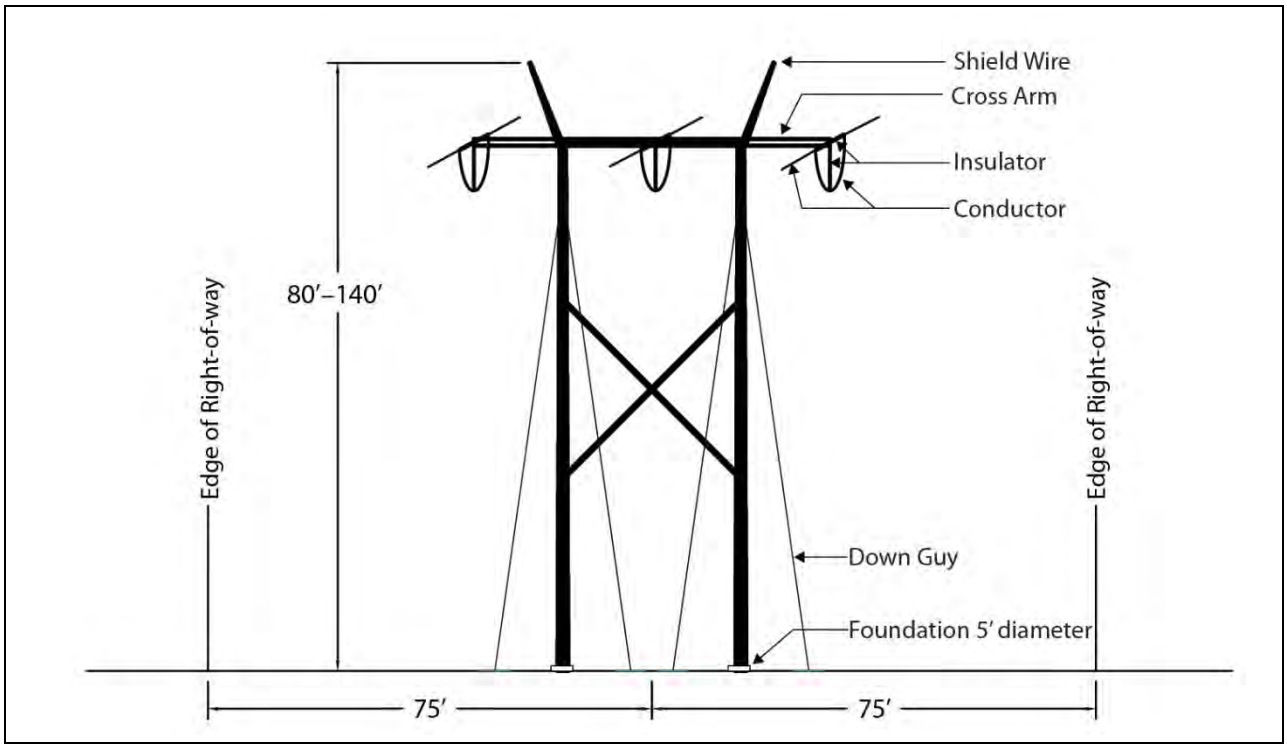

Figure C-3 Single-circuit H-frame Deadend Structure with Down Guys (for angles 5 to 15 degrees)

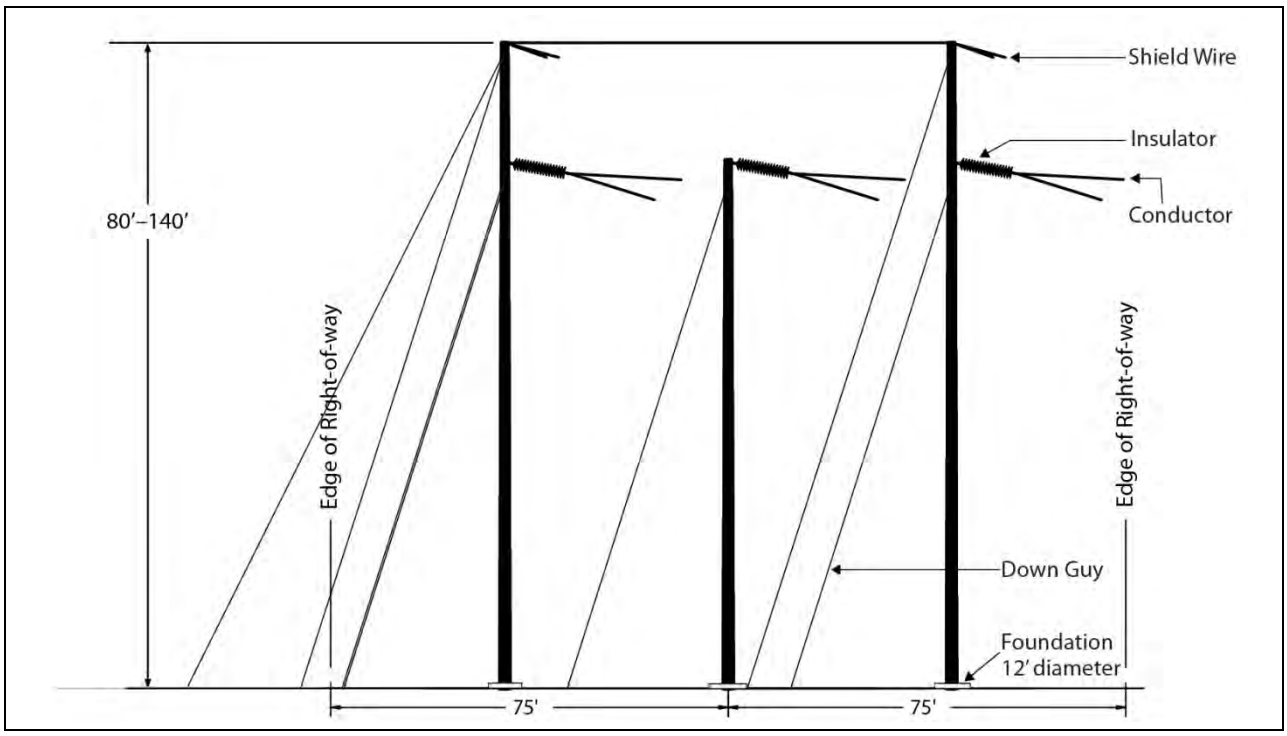

Figure C-4 Single-circuit Three-pole Running-angle Structure with Down Guys (for angles 3 to 10 degrees)

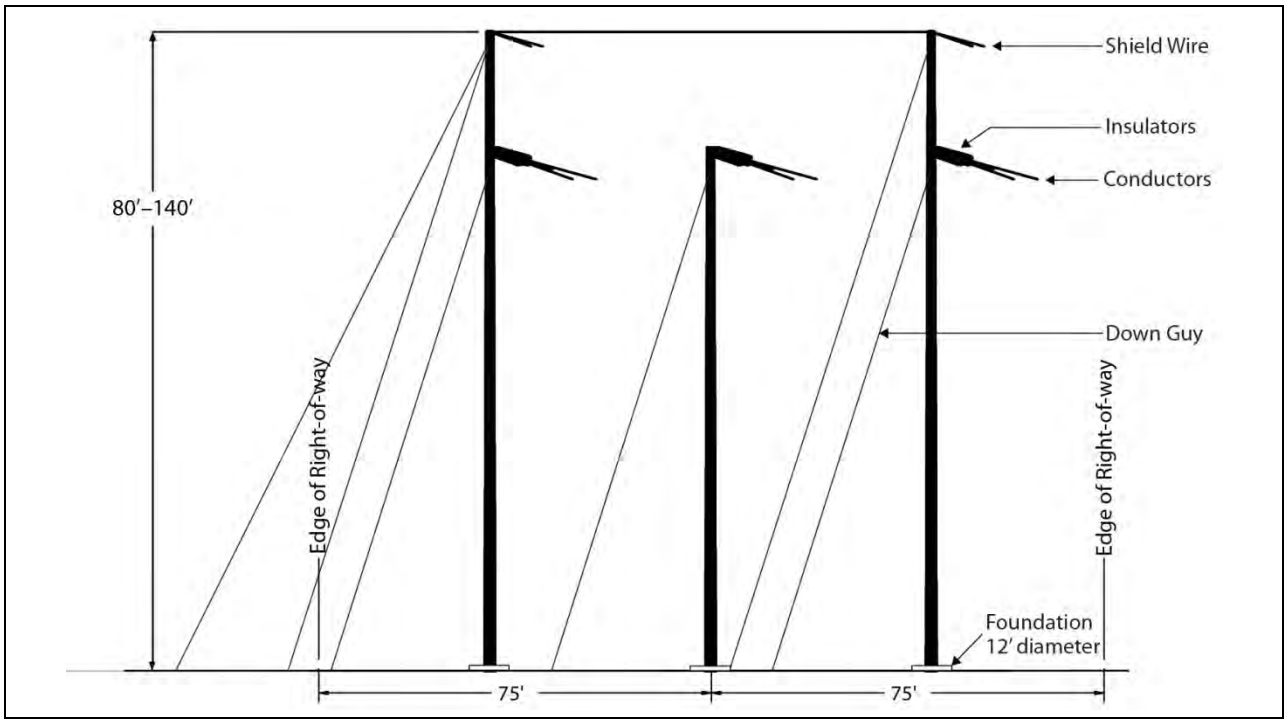

Figure C-5 Single-circuit Three-pole Deadend Structure with Down Guys (for angles 30 to 90 degrees)

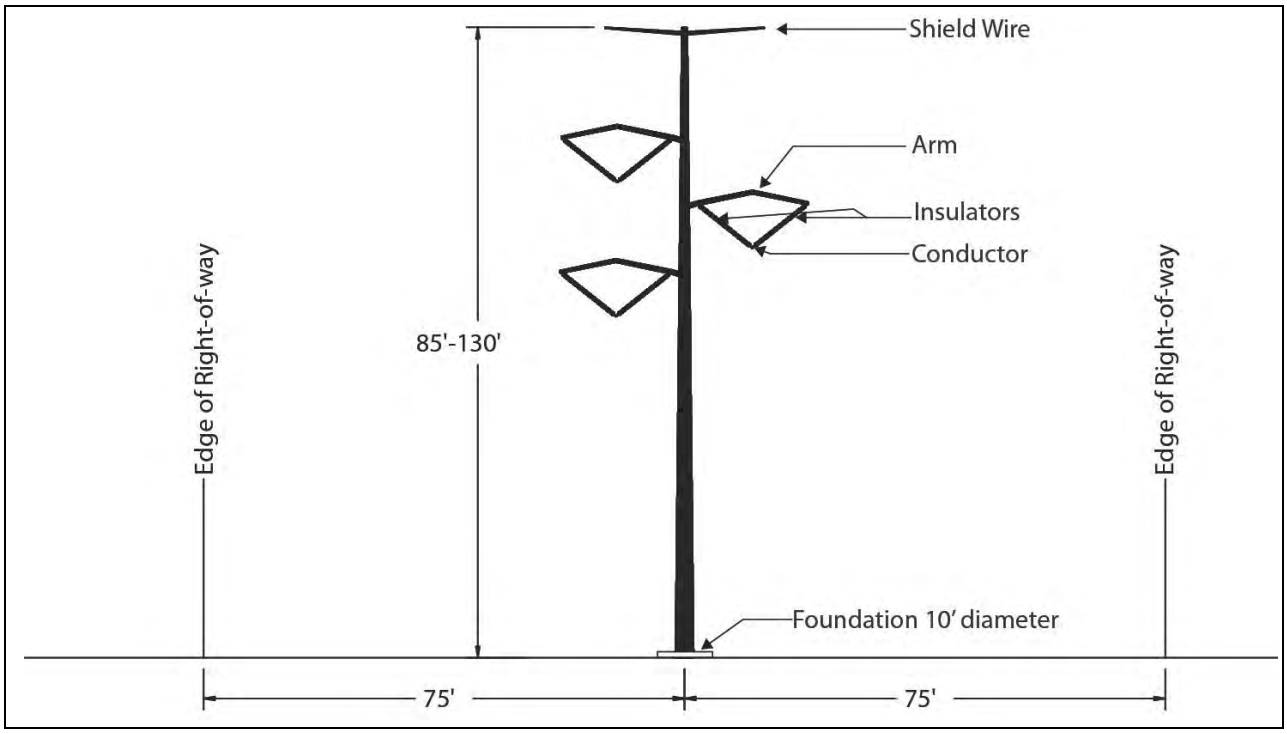

Figure C-6 Single-circuit Mono-pole Tangent Structure (for angles 0 to 5 degrees)

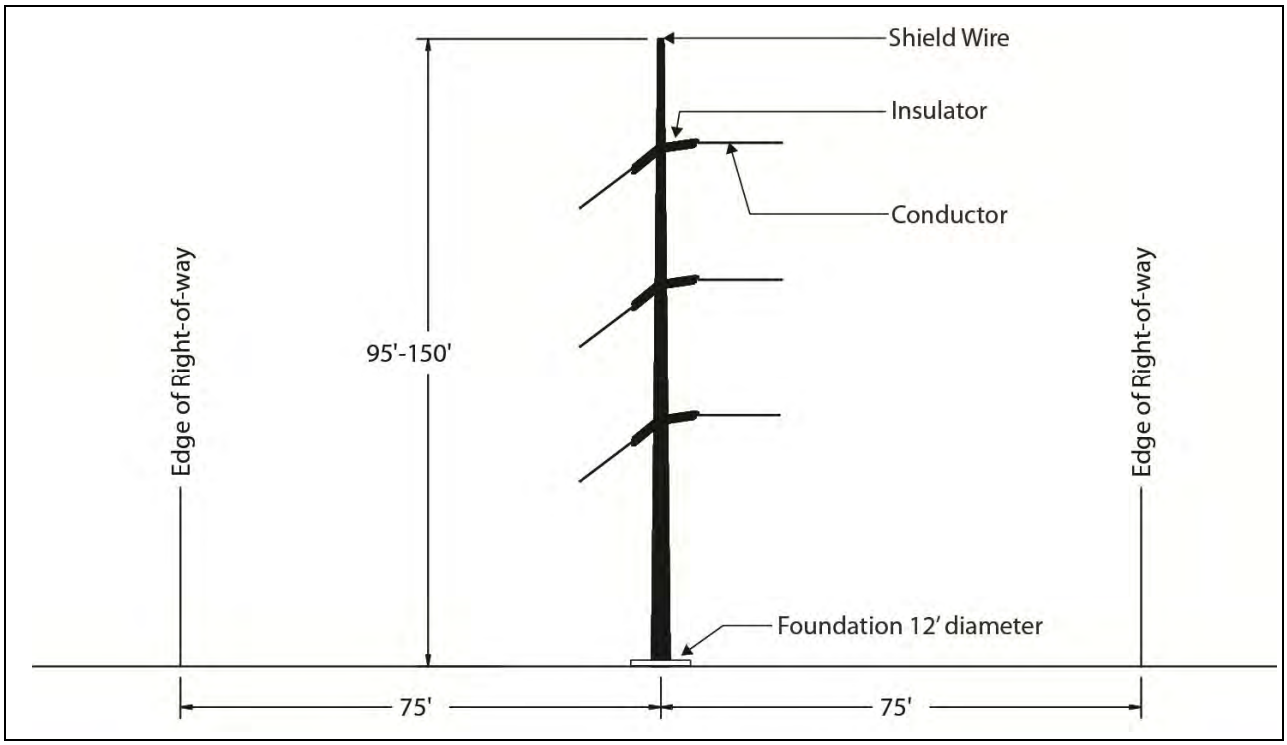

Figure C-7 Single-circuit Mono-pole Deadend Structure (for angles 5 to 90 degrees)

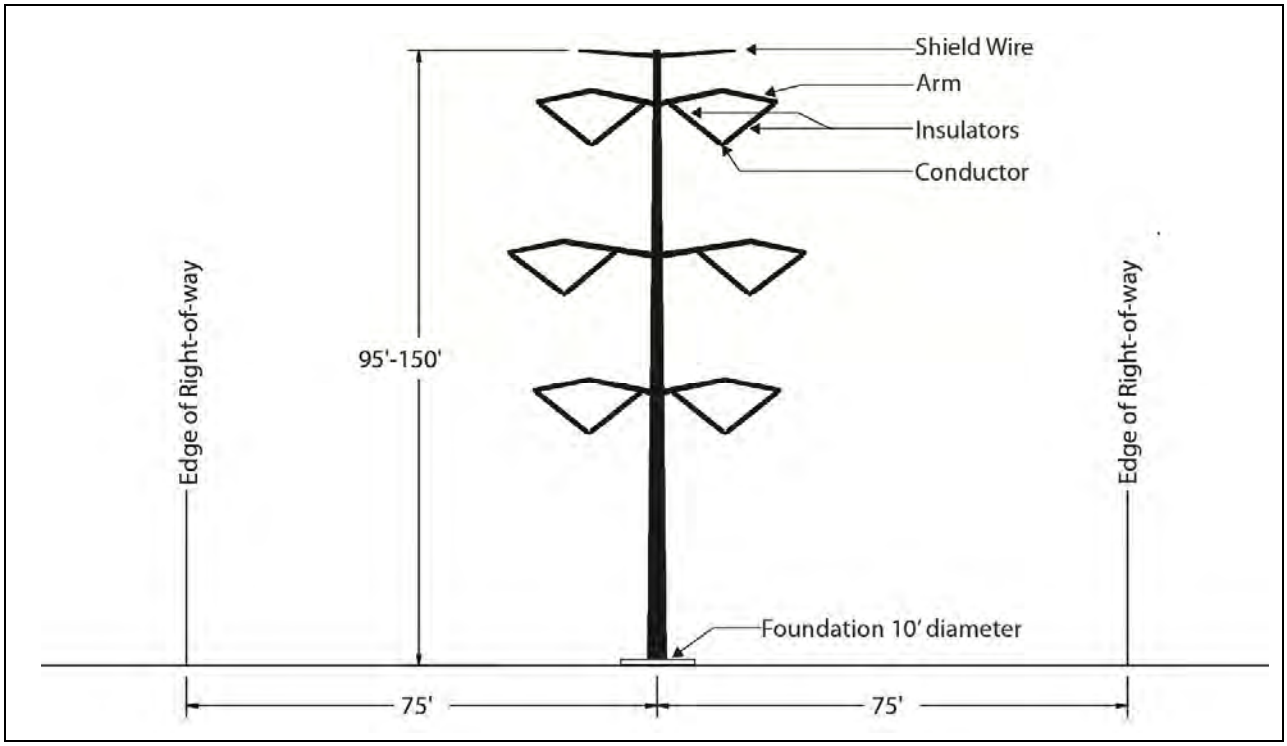

Figure C-8 Double-circuit Mono-pole Tangent Structure (for angles 0 to 5 degrees)

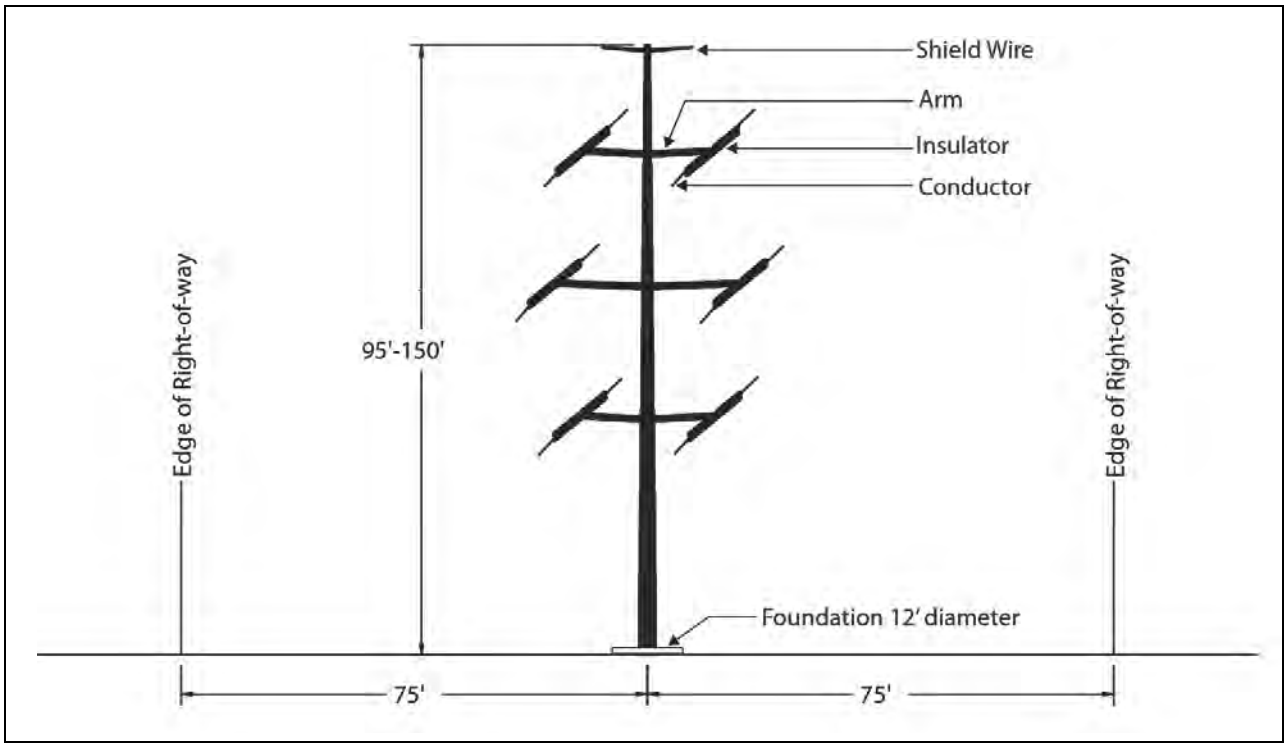

Figure C-9 Double-circuit Mono-pole Deadend Structure (for angles 5–90)

Appendix D – Biological Resources Supporting Data

APPENDIX D – BIOLOGICAL RESOURCES SUPPORTING DATA

Information presented in this appendix was compiled to assist in completion of biological resource inventories and impacts analysis included in Chapters 3 and 4. Lists of species likely to occur were compiled from data obtained from the Utah Natural Heritage Program (UNHP); Utah Division of Wildlife Resources (UDWR) habitat models; previous studies in the project area (i.e., Milford Wind Environmental Assessment); Fishlake and Dixie National Forests land and resource management plans; and Bureau of Land Management (BLM) Cedar City, Fillmore, and Richfield Field Offices resource management plans. Special status species lists were compiled from lists of threatened and endangered species from the U.S. Fish and Wildlife Service (FWS) (county level), BLM-sensitive species (state level), U.S. Forest Service (USFS) sensitive and management indicator species (MIS) (forest level), and State of Utah sensitive species (county level). Species accounts, habitat assessments, and likelihood of occurrence were written and determined through comprehensive review of scientific literature, heritage data, and collaboration with agency resource specialists. The species lists are presented in Tables D-1 through D-6.

D.1 Species Lists

TABLE D-1
MAMMAL SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Allen's Big-eared Bat	*Idionycteris phyllotis*	II	Lowland Riparian	Pinyon-Juniper
Badger	*Taxidea taxus*	Not applicable	Not applicable	Not applicable
Big free-tailed bat	*Nyctinomops macrotis*	II	Lowland Riparian	Cliff
Black-tailed jackrabbit	*Lepus californicus*	Not applicable	Not applicable	Not applicable
Brazilian free-tailed bat	*Tadarida brasiliensis*	Not applicable	Not applicable	Not applicable
Chipmunk	*Tamias (Neotamias)* sp.	Not applicable	Not applicable	Not applicable
Cottontail	*Sylvilagus* sp.	Not applicable	Not applicable	Not applicable
Coyote	*Canis latrans*	Not applicable	Not applicable	Not applicable
Dark kangaroo mouse	*Microdipodops megacephalus*	II	High Desert Scrub	Shrubsteppe
Deer mouse	*Peromyscus* sp.	Not applicable	Not applicable	Not applicable
Golden-mantled ground squirrel	*Spermophilus lateralis*	Not applicable	Not applicable	Not applicable
Hoary bat	*Lasiurus cinereus*	Not applicable	Not applicable	Not applicable
Kangaroo rat	*Dipodomys* sp.	Not applicable	Not applicable	Not applicable
Kit fox	*Vulpes macrotis*	II	High Desert Scrub	
Little brown myotis	*Myotis lucifugus*	Not applicable	Not applicable	Not applicable
Long-eared myotis	*Myotis evotis*	Not applicable	Not applicable	Not applicable
Mule deer	*Odocoileus hemionus*	III	Shrubsteppe	Mountain Shrub
Packrat	*Neotoma* sp.	Not applicable	Not applicable	Not applicable
Pallid bat	*Antrozous pallidus*	Not applicable	Not applicable	Not applicable
Piute ground squirrel	*Spermophilus mollis*	Not applicable	Not applicable	Not applicable
Pocket gopher	*Thomomys* sp.	Not applicable	Not applicable	Not applicable

TABLE D-1
MAMMAL SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Pronghorn	*Antilocapra americana*	Not applicable	Not applicable	Not applicable
Pygmy rabbit	*Brachylagus idahoensis*	II	Shrubsteppe	
Rocky Mountain elk	*Cervus canadensis*	Not applicable	Not applicable	Not applicable
Silver-haired bat	*Lasionycteris noctivagans*	Not applicable	Not applicable	Not applicable
Spotted bat	*Euderma maculatum*	II	Low Desert Scrub	Cliff
Townsend's Big-eared Bat	*Corynorhinus townsendii*	II	Pinyon-Juniper	Mountain Shrub
Utah prairie dog	*Cynomys parvidens*	I	Grassland	Agriculture
Western pipistrelle	*Pipistrellus hesperus*	Not applicable	Not applicable	Not applicable
Western red bat	*Lasiurus blossevillii*	II	Lowland Riparian	
Western small-footed myotis	*Myotis ciliolabrum*	Not applicable	Not applicable	Not applicable
White-tailed antelope squirrel	*Ammospermophilus leucurus*	Not applicable	Not applicable	Not applicable

TABLE D-2
AVIAN SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
American avocet	*Recurvirostra americana*	III	Wetland	Playa
American coot	*Fulica americana*	Not applicable	Not applicable	Not applicable
American pipit	*Anthus rubescens*	Not applicable	Not applicable	Not applicable
American robin	*Turdus migratorius*	Not applicable	Not applicable	Not applicable
American white pelican	*Pelecanus erythrorhynchos*	II	Water-Lentic	Wetland
Barn swallow	*Hirundo rustica*	Not applicable	Not applicable	Not applicable
Black-billed magpie	*Pica hudsonia*	Not applicable	Not applicable	Not applicable
Black-chinned sparrow	*Spizella atrogularis*	Not applicable	Not applicable	Not applicable
Black-crowned night-heron	*Nycticorax nycticorax*	Not applicable	Not applicable	Not applicable
Black-throated grey warbler	*Dendroica nigrescens*	Not applicable	Pinyon-Juniper	Mountain Shrub
Black-throated sparrow	*Amphispiza bilineata*	Not applicable	Not applicable	Not applicable
Blue grosbeak	*Passerine caerulea*	Not applicable	Not applicable	Not applicable
Brewer's blackbird	*Euphagus cyanocephalus*	Not applicable	Not applicable	Not applicable
Brewer's sparrow	*Spizella breweri*	III	Shrubsteppe	High Desert Scrub
Broad-tailed hummingbird	*Selasphorus platycercus*	III	Lowland Riparian	Mountain Riparian
Brown-headed cowbird	*Molothrus ater*	Not applicable	Not applicable	Not applicable
Bullock's oriole	*Icterus bullockii*	Not applicable	Not applicable	Not applicable
California Condor	*Gymnogyps californianus*	I	Cliff	
Canada goose	*Branta canadensis*	Not applicable	Not applicable	Not applicable
Chipping sparrow	*Spizella passerine*	Not applicable	Not applicable	Not applicable

TABLE D-2
AVIAN SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Cinnamon teal	*Anas cyanoptera*	Not applicable	Not applicable	Not applicable
Cliff swallow	*Petrochelidon pyrrhonota*	Not applicable	Not applicable	Not applicable
Common nighthawk	*Chordeiles minor*	Not applicable	Not applicable	Not applicable
Common raven	*Corvus corax*	Not applicable	Not applicable	Not applicable
Common yellowthroat	*Geothlypis trichas*	Not applicable	Not applicable	Not applicable
European starling	*Sturnus vulgaris*	Not applicable	Not applicable	Not applicable
Great blue heron	*Ardea herodias*	Not applicable	Not applicable	Not applicable
Greater sage-grouse	*Centrocercus urohasianus*	II	Shrubsteppe	
Green heron	*Butorides virescens*	Not applicable	Not applicable	Not applicable
Green-tailed towhee	*Pipilo chlorurus*	Not applicable	Not applicable	Not applicable
Green-winged teal	*Anas crecca*	Not applicable	Not applicable	Not applicable
Hairy woodpecker	*Picoides villosus*	Not applicable	Not applicable	Not applicable
Horned lark	*Eremphila alpestris*	Not applicable	Not applicable	Not applicable
House finch	*Carpodacus mexicanus*	Not applicable	Not applicable	Not applicable
Killdeer	*Charadrius vociferous*	Not applicable	Not applicable	Not applicable
Lark sparrow	*Chondestes grammacus*	Not applicable	Not applicable	Not applicable
Lewis's woodpecker	*Melanerpes lewis*	II	Ponderosa Pine	Lowland Riparian
Lincoln's sparrow	*Melospiza lincolnii*	Not applicable	Not applicable	Not applicable
Loggerhead strike	*Lanius ludovicianus*	Not applicable	Not applicable	Not applicable
Long-billed curlew	*Numenius americanus*	II	Grassland	Agriculture
MacGillivray's warbler	*Oporornis tolmiei*	Not applicable	Not applicable	Not applicable
Mallard	*Anas platyrhynchos*	Not applicable	Not applicable	Not applicable
Mountain bluebird	*Sialia mexicana*	Not applicable	Not applicable	Not applicable
Mourning dove	*Zenaida macroura*	Not applicable	Not applicable	Not applicable
Northern flicker	*Colaptes auratus*	Not applicable	Not applicable	Not applicable
Northern rough-winged swallow	*Stelgidopteryx serripennis*	Not applicable	Not applicable	Not applicable
Pied-billed grebe	*Podilymbus podiceps*	Not applicable	Not applicable	Not applicable
Red-winged blackbird	*Agelaius phoeniceus*	Not applicable	Not applicable	Not applicable
Rock wren	*Salpinctes obsoletus*	Not applicable	Not applicable	Not applicable
Ruddy duck	*Oxyura jamaicensis*	Not applicable	Not applicable	Not applicable
Sage sparrow	*Amphispiza belli*	III	Shrubsteppe	High Desert Scrub
Sage thrasher	*Oreoscoptes montanus*	III	Shrubsteppe	High Desert Scrub
Savannah sparrow	*Passerculus sandwichensis*	Not applicable	Not applicable	Not applicable
Say's phoebe	*Sayornis saya*	Not applicable	Not applicable	Not applicable
Song sparrow	*Melospiza melodia*	Not applicable	Not applicable	Not applicable
Sora	*Porzana carolina*	Not applicable	Not applicable	Not applicable
Southwestern willow flycatcher	*Empidonax traillii extimus*	I	Lowland Riparian	Mountain Riparian
Spotted sandpiper	*Actitis macularius*	Not applicable	Not applicable	Not applicable
Spotted towhee	*Pipilo maculatus*	Not applicable	Not applicable	Not applicable
Summer tanager	*Piranga rubra*	Not applicable	Not applicable	Not applicable
Three-toed woodpecker	*Picoides dorsalis*	II	Sub-Alpine Conifer	Lodgepole Pine
Townsend's solitaire	*Myadestes townsendi*	Not applicable	Not applicable	Not applicable
Tree swallow	*Tachycineta bicolor*	Not applicable	Not applicable	Not applicable

TABLE D-2
AVIAN SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Vesper sparrow	*Pooecetes gramineus*	Not applicable	Not applicable	Not applicable
Western bluebird	*Sialia mexicana*	Not applicable	Not applicable	Not applicable
Western kingbird	*Tyrannus verticalis*	Not applicable	Not applicable	Not applicable
Western meadowlark	*Sturnella neglecta*	Not applicable	Not applicable	Not applicable
Western scrub jay	*Aphelocoma californica*	Not applicable	Not applicable	Not applicable
White-crowned sparrow	*Zonotrichia leuophrys*	Not applicable	Not applicable	Not applicable
White-faced ibis	*Plegadis chihi*	Not applicable	Not applicable	Not applicable
White-throated swift	*Aeronauts saxatalis*	Not applicable	Not applicable	Not applicable
Wild turkey	*Meleagris gallopavo*	Not applicable	Not applicable	Not applicable
Willet	*Catoptrophorus semipalmatus*	Not applicable	Not applicable	Not applicable
Yellow warbler	*Dendroica petechia*	Not applicable	Not applicable	Not applicable
Yellow-breasted chat	*Icteria virens*	Not applicable	Not applicable	Not applicable
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	Not applicable	Not applicable	Not applicable
Yellow-rumped warbler	*Dendroica coronate*	Not applicable	Not applicable	Not applicable

TABLE D-3
RAPTOR SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
American kestrel	*Falco sparverius*	I	Lowland Riparian	Agriculture
Bald eagle	*Haliaeetus leucocephalus*	II	High Desert Scrub	Grassland
Burrowing owl	*Athene cunicularia*	Not applicable	Not applicable	Not applicable
Cooper's hawk	*Accipiter cooperii*	II	Pinyon-Juniper	Shrubsteppe
Ferruginous hawk	*Buteo regalis*	I	Lowland Riparian	Agriculture
Flammulated owl	*Otus flammeoulus*	Not applicable	Not applicable	Not applicable
Golden eagle	*Aquila chrysaetos*	Not applicable	Not applicable	Not applicable
Merlin	*Falco columbarius*	Not applicable	Not applicable	Not applicable
Northern goshawk	*Accipiter gentilis*	I	Mixed Conifer	Aspen
Northern harrier	*Circus cyaneus*	Not applicable	Not applicable	Not applicable
Osprey	*Pandion haliaetus*	Not applicable	Not applicable	Not applicable
Peregrine falcon	*Falco peregrinus*	III	Cliff	Lowland Riparian
Prairie falcon	*Falco mexicanus*	Not applicable	Not applicable	Not applicable
Red-tailed hawk	*Buteo jamaicensis*	Not applicable	Not applicable	Not applicable
Rough-legged hawk	*Buteo lagopus*	Not applicable	Not applicable	Not applicable
Sharp-shinned hawk	*Accipiter striatus*	Not applicable	Not applicable	Not applicable
Short-eared owl	*Asio flammeus*	II	Wetland	Grassland
Swainson's hawk	*Buteo swainsoni*	Not applicable	Not applicable	Not applicable
Turkey vulture	*Cathartes aura*	Not applicable	Not applicable	Not applicable
SOURCE: Bureau of Land Management 2008a				

TABLE D-4
REPTILE AND AMPHIBIAN SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Amphibians				
Arizona toad	*Bufo microscaphus*	II	Lowland Riparian	Wetland
Canyon treefrog	*Hyla arenicolor*	III	Lowland Riparian	Water - Lotic
Great Basin spadefoot	*Spea intermontana*	Not applicable	Not applicable	Not applicable
Great Plains toad	*Bufo cognatus*	III	High Desert Scrub	Grassland
Northern leopard frog	*Rana pipiens*	III	Wetland	Lowland Riparian
Red-spotted toad	*Bufo punctatus*	Not applicable	Not applicable	Not applicable
Tiger salamander	*Ambystoma tigrinum*	Not applicable	Not applicable	Not applicable
Western (boreal) toad	*Bufo boreas*	II	Wetland	Mountain Riparian
Woodhouse's toad	*Bufo woodhousii*	Not applicable	Not applicable	Not applicable
Reptiles				
Common garter snake	*Thamnophis sirtalis*	III	Wetland	Wet Meadow
Common sagebrush lizard	*Sceloporus graciosus*	III	Low Desert Scrub	Pinyon-Juniper
Common kingsnake	*Lampropeltis getula*	Not applicable	Not applicable	Not applicable
Common side-blotched lizard	*Uta stansburiana*	Not applicable	Not applicable	Not applicable
Desert horned lizard	*Phrynosoma platyrhinos*	Not applicable	Not applicable	Not applicable
Desert spiny lizard	*Sceloporus magister*	Not applicable	Not applicable	Not applicable
Desert striped whipsnake	*Masticophis taeniatus taeniatus*	Not applicable	Not applicable	Not applicable
Eastern racer	*Coluber constrictor*	Not applicable	Not applicable	Not applicable
Glossy snake	*Arizona elegans*	III	Grassland	Low Desert Scrub
Gophersnake	*Pituophis catenifer*	Not applicable	Not applicable	Not applicable
Great Basin collared lizard	*Crotaphytus bicinctores*	Not applicable	Not applicable	Not applicable
Great Basin rattlesnake	*Crotalus oreganus lutosus*	Not applicable	Not applicable	Not applicable
Greater short-horned lizard	*Phrynosoma hernandesi*	Not applicable	Not applicable	Not applicable
Groundsnake	*Sonora semiannulata*	III	Low Desert Scrub	
Long-nosed leopard lizard	*Gambelia wislizenii*	III	Low Desert Scrub	High Desert Scrub
Long-nosed snake	*Rhinocheilus lecontei*	III	High Desert Scrub	Shrubsteppe
Milksnake	*Lampropeltis triangulum*	III	High Desert Scrub	Shrubsteppe
Nightsnake	*Hypsiglena torquata*	III	Pinyon-Juniper	High Desert Scrub
Ornate tree lizard	*Urosaurus ornatus*	Not applicable	Not applicable	Not applicable
Sonoran Mountain kingsnake	*Lampropeltis pyromelana*	III	Pinyon-Juniper	Mountain Riparian
Striped whipsnake	*Masticophis taeniatus*	Not applicable	Not applicable	Not applicable
Western fence lizard	*Sceloporus occidentalis*	Not applicable	Not applicable	Not applicable

TABLE D-4
REPTILE AND AMPHIBIAN SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Western lyresnake	*Trimorphodon biscutatus*	III	Low Desert Scrub	Lowland Riparian
Western skink	*Eumeces skiltonianus*	III	Pinyon-Juniper	Mountain Shrub
Western whiptail	*Cnemidophorus tigris*	Not applicable	Not applicable	Not applicable

TABLE D-5
FISH SPECIES LIKELY TO OCCUR IN THE PROJECT AREA

Common Name	Scientific Name	Tier	Primary Habitat	Secondary Habitat
Bonneville cutthroat trout	*Oncorhynchus clarki utah*	I	Water - Lotic	Mountain Riparian
Brown trout	*Salmo trutta*	Not applicable	Water – Lotic	Mountain Riparian
Cutthroat trout	*Oncorhynchus clarki*	I	Water - Lotic	Mountain Riparian
Desert sucker	*Catostomus clarkii*	II	Water - Lotic	
Golden shiner	*Notemigonus crysoleucas*	Not applicable	Not applicable	Not applicable
Green sunfish	*Lepomis cyanellus*	Not applicable	Not applicable	Not applicable
Mountain sucker	*Catostomus platyrhynchus*	Not applicable	Water – Lotic	Mountain Riparian
Rainbow trout	*Oncorhynchus mykiss*	Not applicable	Water – Lotic	Mountain Riparian
Smallmouth bass	*Micropterus dolomieu*	Not applicable	Not applicable	Not applicable
Southern leatherside chub	*Gila copei*	II	Water - Lotic	Mountain Riparian
Speckled dace	*Rhinichthys osculus*	III	Water - Lotic	Lowland Riparian
Wipers	*Morone* spp.	Not applicable	Not applicable	Not applicable

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Plants				
Angell cinquefoil	*Potentilla angelliae*	USFS	No	Does not occur
Aquarius paintbrush	*Castilleja aquariensis*	USFS	No	Does not occur
Arapien stickleaf	*Mentzelia argillosa*	BLM	No	Does not occur
Arizona willow	*Salix arizonica*	USFS	No	Does not occur
Baird camissonia	*Camissonia bairdii*	BLM	No	Does not occur
Barneby woody aster	*Aster kingii var. barnebyana*	USFS	No	Does not occur
Barneby's breadroot	*Pediomelum aromaticum var. barnebyi*	BLM	No	Does not occur
Beaver Mountain groundsel	*Senecio castoreus*	USFS	No	Does not occur
Bicknell milkvetch	*Astragalus consobrinus*	USFS	No	Does not occur
Bicknell thelesperma	*Thelesperma subnuda var. alpina*	USFS	No	Does not occur
Cedar Breaks biscuitroot	*Cymopterus minimus*	USFS	No	Does not occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Cedar Breaks goldenbush	*Haplopappus zionis*	BLM	No	Does not occur
Creeping draba	*Draba sobolifera*	USFS	No	Does not occur
Dana milkvetch	*Astragalus henrimontanensis*	USFS	No	Does not occur
Dwarf bear-poppy	*Arctomecon humilis*	FWS E	No	Does not occur
Elsinore buckwheat	*Eriogonum batemanii var. ostlundii*	USFS	Yes	Known to occur
Escarpment milkvetch	*Astragalus striatiflorus*	BLM	No	Does not occur
Fish Lake naid	*Najas caespitosa*	USFS	No	Does not occur
Four-petal jamesia	*Jamesia tetrapetala*	BLM	No	Does not occur
Franklin's penstemon	*Penstemon franklinii*	BLM	Yes	May occur
Frisco buckwheat	*Eriogonum soredium*	FWS C, BLM	No	Does not occur
Frisco clover	*Trifolium friscanum*	FWS C, BLM	No	Does not occur
Gierisch mallow	*Sphaeralcea gierischii*	FWS C, BLM	No	Does not occur
Goodrich's rockcress	*Arabis goodrichii*	BLM	No	Does not occur
Gould camissonia	*Camissonia gouldii*	BLM	No	Does not occur
Greenwood's goldenbush	*Haplopappus lignumviridis*	BLM	Yes	May occur
Guard milkvetch	*Astragalus zionis vigulus*	USFS	No	Does not occur
Gumbo milkvetch	*Astragalus ampullarius*	BLM	No	Does not occur
Heliotrope milkvetch	*Astragalus montii*	FWS T	No	Does not occur
Holmgren milkvetch	*Astragalus holmgreniorum*	FWS E	No	Does not occur
House Range primrose	*Primula cusickiana var. domensis*	BLM	No	Does not occur
Ibex buckwheat	*Eriogonum nummulare var. ammophilum*	BLM	No	Does not occur
Jane's globemallow	*Sphaeralcea janeae*	BLM	No	Does not occur
Jones globemallow	*Sphaeralcea caespitosa var. caespitosa*	BLM	No	Does not occur
Jones goldenaster	*Heterotheca jonesii*	USFS	No	Does not occur
Kaye's wild buckwheat	*Eriogonum spathulatum var. kayeae*	BLM	No	Does not occur
Las Vegas buckwheat	*Eriogonum corymbosum var. nilesii*	FWS C	No	Does not occur
Last chance townsendia	*Townsendia aprica*	FWS T	No	Does not occur
Little penstemon	*Penstemon parvus*	USFS	No	Does not occur
Loa milkvetch	*Astragalus loanus*	BLM	No	Does not occur
Logan buckwheat	*Eriogonum brevicaule var. loganum*	BLM	No	Does not occur
Maguire campion	*Silene petersonii*	USFS	No	Does not occur
Maguire daisy	*Erigeron maguirei*	USFS	No	Does not occur
Mound cryptanth	*Cryptantha compacta*	BLM	No	Does not occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Mt. Belknap draba	*Draba ramulosa*	USFS	No	Does not occur
Mussentuchit gilia	*Gilia tenuis*	BLM	No	Does not occur
Navajo Lake milkvetch	*Astragalus limnocharis var. limnocharis*	USFS	No	Does not occur
Neeses' peppergrass	*Lepedium montanum var. neeseae*	USFS	No	Does not occur
Nevada willowherb	*Epilobium nevadense*	BLM, USFS	No	Does not occur
Ostler's ivesia	*Ivesia shockleyi var. ostleri*	BLM	No	Does not occur
Ostler's pepperplant	*Lepidium ostleri*	FWS C, BLM	No	Does not occur
Paradox moonwort	*Botrychium paradoxum*	USFS	No	Does not occur
Paria breadroot	*Pediomelum pariense*	USFS	No	Does not occur
Parry petalonyx	*Petalonyx parryii*	BLM	No	Does not occur
Pine Valley goldenweed	*Haplopappus crispus*	BLM, USFS	No	Does not occur
Pink egg milkvetch	*Astragalus oophorus var. lonchocalyx*	BLM	No	Does not occur
Pinnate spring-parsley	*Cymopterus beckii*	USFS	No	Does not occur
Pinyon penstemon	*Penstemon pinorum*	BLM, USFS	Yes	Known to occur
Podunk groundsel	*Senecio malmstenii*	USFS	No	Does not occur
Red Canyon beardtongue	*Penstemon bracteatus*	USFS	No	Does not occur
Reveal paintbrush	*Castilleja parvula var. revealii*	USFS	No	Does not occur
Rock-tansy	*Sphaeromeria capitata*	USFS	No	Does not occur
Ryberg's milkvetch	*Astragalus perianus*	MIS	No	Does not occur
Scarlet buckwheat	*Eriogonum phoenicium*	BLM	No	Does not occur
Sevier townsendia	*Townsendia jonesii var. lutea*	BLM, USFS	Yes	Likely to occur
Shivwitz milkvetch	*Astragalus ampullarioides*	FWS E	No	Does not occur
Siler pincushion cactus	*Pediocactus sileri*	FWS T	No	Does not occur
Sweet penstemon	*Penstemon angustifolius var. dulcis*	BLM	No	Does not occur
Table Cliff milkvetch	*Astragalus limnocharis var. tabulaeus*	USFS	No	Does not occur
Tushar paintbrush	*Castilleja parvula var. parvula*	USFS	No	Does not occur
Utah phacelia	*Phacelia utahensis*	BLM	Yes	Known to occur
Virgin thistle	*Cirsium virginensis*	BLM	No	Does not occur
Ward's beardtongue	*Penstemon wardii*	BLM, USFS	Yes	Known to occur
Welsh milkvetch	*Astragalus welshii*	BLM	No	Does not occur
White River swertia	*Swertia gypsicola*	BLM	No	Does not occur
Widtsoe buckwheat	*Eriogonum aretioides*	USFS	No	Does not occur
Wirestem buckwheat	*Eriogonum pharnaceoides var. cervinum*	BLM	No	Does not occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Wonderland Alice flower	*Gilia caespitosa*	USFS	No	Does not occur
Wright fishhook cactus	*Sclerocactus wrightiae*	FWS E	No	Does not occur
Yellow-white catseye	*Cryptantha ochroleuca*	USFS	No	Does not occur
Zion jamesia	*Jamesia americana var. zionis*	USFS	No	Does not occur
Invertebrates				
Bifid duct pyrg	*Pyrgulopsis peculiaris*	FWS P, UT	No	Does not occur
Brian Head mountainsnail	*Oreohelix parawanensis*	UT	No	Does not occur
California floater	*Anodonta californiensis*	UT	No	Does not occur
Carinate Glenwood pyrg	*Pyrgulopsis inopinata*	UT	No	Does not occur
Cloaked physa	*Physa megalochlamys*	UT	No	Does not occur
Coral Pink Sand Dunes tiger beetle	*Cicindela albissima*	FWS C, BLM	No	Does not occur
Desert springsnail	*Pyrgulopsis deserta*	UT	No	Does not occur
Hamlin Valley pyrg	*Pyrgulopsis hamlinensis*	FWS P, UT	No	Does not occur
Longitudinal gland pyrg	*Pyrgulopsis anguina*	FWS P, UT	No	Does not occur
Macroinvertebrates		MIS (FL)	Yes	Known to occur
Otter Creek pyrg	*Pyrgulopsis fusca*	UT	No	Does not occur
Smooth Glenwood pyrg	*Pyrgulopsis chamberlini*	UT	No	Does not occur
Sub-globose nake pyrg	*Pyrgulopsis saxatilis*	FWS P, UT	No	Does not occur
Wet-rock physa	*Physella zionis*	UT	No	Does not occur
Fish				
Bluehead sucker	*Catostomus discobolus*	BLM, UT, CAS	No	Does not occur
Bonneville cutthroat trout	*Oncorhynchus clarki utah*	BLM, USFS, UT, CAS, MIS	Yes	Known to occur
Bonytail	*Gila elegans*	FWS E	No	Does not occur
Brook trout	*Salvelinus fontinalis*	MIS	No	Does not occur
Brown trout	*Salmo trutta*	MIS	Yes	Known to occur
Colorado pikeminnow	*Ptychocheilus lucius*	FWS E	No	Does not occur
Colorado River cutthroat trout	*Oncorhynchus clarki pleuriticus*	BLM, USFS, UT, CAS, MIS	No	Does not occur
Cutthroat trout	*Oncorhynchus clarki*	MIS	Yes	Known to occur
Desert sucker	*Catostomus clarkii*	BLM, UT	Yes	Known to occur
Flannelmouth sucker	*Catostomus latipinnis*	BLM, UT, CAS	No	Does not occur
Humpback chub	*Gila cypha*	FWS E	No	Does not occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Lake trout	*Salvelinus namaycush*	MIS	No	Does not occur
Least chub	*Iotichthys phlegethontis*	FWS C, BLM, UT, CAS	No	Does not occur
Northern leatherside chub	*Lepidomeda copei*	BLM	No	Does not occur
Rainbow trout	*Oncorhynchus mykiss*	MIS	Yes	Known to occur
Razorback sucker	*Xyrauchen texanus*	FWS E	No	Does not occur
Southern leatherside chub	*Lepidomeda aliciae*	BLM, USFS, UT, CAS, MIS	Yes	Likely to occur
Virgin River chub	*Gila robusta seminuda*	FWS E, BLM, UT	No	Does not occur
Virgin spinedace	*Lepidomeda mollispinis*	BLM, UT, CAS, MIS	Yes	Known to occur
Woundfin	*Plagopterus argentissimus*	FWS E, BLM, UT	No	Does not occur
Yellowstone cutthroat trout	*Oncorhynchus clarkia bouvieri*	BLM	No	Does not occur
Amphibians/Reptiles				
Arizona toad	*Bufo microscaphus*	BLM, UT	Yes	Likely to occur
Columbia spotted frog	*Rana luteiventris*	BLM, UT, CAS	No	Does not occur
Common chuckwalla	*Sauromalus ater*	BLM, UT	No	Does not occur
Desert iguana	*Dipsosaurus dorsalis*	BLM, UT	No	Does not occur
Desert night lizard	*Xantusia vigilis*	BLM, UT	No	Does not occur
Desert tortoise	*Gopherus agassizii*	FWS T, UT	No	Does not occur
Gila monster	*Heloderma suspectum*	BLM, UT	No	Does not occur
Great plains toad	*Bufo cognatus*	BLM, UT	Yes	Does not occur
Mojave rattlesnake	*Crotalus scutulatus*	BLM, UT	No	Does not occur
Relict leopard frog	*Rana onca*	UT	No	Extirpated
Sidewinder	*Crotalus cerastes*	BLM, UT	No	Does not occur
Smooth greensnake	*Opheodrys vernalis*	BLM	No	Does not occur
Speckled rattlesnake	*Crotalus mitchellii*	BLM, UT	No	Does not occur
Western banded gecko	*Coleonyx variegatus*	BLM, UT	No	Does not occur
Western threadsnake	*Leptotyphlops humilis*	BLM, UT	No	Does not occur
Western toad	*Bufo boreas*	BLM, USFS, UT	Yes	Does not occur
Zebra-tailed lizard	*Callisaurus draconoides*	BLM, UT	No	Does not occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Birds				
American white pelican	*Pelecanus erythrorhynchos*	BLM, UT	Yes	Not known to breed in study corridors, but suitable habitat is present; foraging habitat and incidental migrants known to occur
Bald eagle	*Haliaeetus leucocephalus*	BLM, USFS, UT	Yes	No suitable breeding habitat present; known to forage and winter roost
Black swift	*Cypseloides niger*	BLM, UT	No	No breeding habitat; incidental migrants may occur
Bobolink	*Dolichonyx oryzivorus*	BLM, UT	No	No breeding habitat; incidental migrants may occur
Brewer's sparrow	*Spizella breweri*	MIS	Yes	Likely to breed and forage
Burrowing owl	*Athene cunicularia*	BLM, UT	Yes	Known to breed and forage
California condor	*Gymnogyps californianus*	FWS E[5], FWS X	Yes	No breeding habitat; foraging may occur
Ferruginous hawk	*Buteo regalis*	BLM, UT	Yes	Known to breed and forage
Flammulated owl	*Otus flammeolus*	USFS	No	No breeding or foraging habitat
Grasshopper sparrow	*Ammodramus savannarum*	BLM, UT	No	No breeding habitat; incidental migrants may occur
Greater sage-grouse	*Centrocercus urophasianus*	FWS C, BLM, USFS, UT	Yes	Known to breed and forage
Hairy woodpecker	*Picoides villosus*	MIS	Yes	Likely to breed and forage
Lewis's woodpecker	*Melanerpes lewis*	BLM, UT	Yes	No breeding habitat; foraging may occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Lincoln's sparrow	*Melospiza lincolnii*	MIS	Yes	No breeding habitat; foraging likely to occur
Long-billed curlew	*Numenius americanus*	BLM, UT	Yes	Known to breed and forage
MacGillivray's warbler	*Oporornis tolmiei*	MIS	Yes	No breeding habitat; foraging may occur
Mexican spotted owl	*Strix occidentalis lucida*	FWS T	No	No breeding or foraging habitat
Mountain bluebird	*Sialia currucoides*	MIS	Yes	Likely to breed and forage
Mountain plover	*Charadrius montanus*	BLM, UT	Yes	Suitable breeding and foraging habitat occurs, but species reported extirpated from Utah
Northern flicker	*Colaptes auratus*	MIS	Yes	Suitable breeding habitat present; known to forage
Northern goshawk	*Accipiter gentilis*	BLM, USFS, UT, CAS, MIS	Yes	No suitable breeding habitat; foraging may occur
Peregrine falcon	*Falco peregrinus anatum*	USFS	Yes	Likely to breed and forage
Sage thrasher	*Oreoscoptes montanus*	MIS	Yes	Likely to breed and forage
Sharp-tailed grouse	*Tympanuchus phasianellus*	BLM	No	Does not occur
Short-eared owl	*Asio flammeius*	BLM, UT	Yes	Likely to breed and forage
Snowy plover	*Charadrius alexandrinus*	BLM	No	No breeding or foraging habitat; incidental migrants may occur
Song sparrow	*Melospiza melodia*	MIS	Yes	Likely to breed and forage
Southwestern willow flycatcher	*Empidonax traillii extimus*	FWS E	Yes	Known to breed and forage
Three-toed woodpecker	*Picoides dorsalis*	BLM, USFS, UT	No	No breeding or foraging habitat
Vesper sparrow	*Pooecetes gramineus*	MIS	Yes	Likely to breed and forage
Western bluebird	*Sialia mexicana*	MIS	Yes	Likely to breed and forage

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Wild turkey	*Meleagris gallopavo*	MIS	Yes	Likely to breed and forage
Yellow warbler	*Dendroica petechia*	MIS	Yes	Known to breed and forage
Western yellow-billed cuckoo	*Coccyzus americanus*	FWS C, BLM, USFS, UT	No	Likely to breed and forage
Mammals				
Allen's big-eared bat	*Idionycteris phyllotis*	BLM, UT	Yes	No breeding or roosting habitat; foraging may occur
Big free-tailed bat	*Nyctinomops macrotis*	BLM, UT	Yes	No breeding or roosting habitat; foraging may occur
Bighorn sheep includes Rocky Mountain, California, and desert bighorn sheep	*O. canadensis canadensis, O.c. californiana, O.c. nelsoni*	USFS	No	Does not occur
Brown (grizzly) bear	*Ursus arctos*	UT	No	Does not occur; extirpated from Utah
Canada lynx	*Lynx canadensis*	UT	No	Does not occur
Dark kangaroo mouse	*Microdipodops megacephalus*	BLM, UT	Yes	Likely to breed and forage
Fringed myotis	*Myotis thysanodes*	BLM, UT	No	No breeding or roosting habitat; foraging may occur
Gray wolf	*Canis lupus*	UT	No	Does not occur
Gunnison prairie dog	*Cynomys gunnisoni*	BLM	No	Does not occur
Kit fox	*Vulpes macrotis*	BLM, UT	Yes	Known to breed and forage
Mule deer	*Odocoileus hemionus*	MIS	Yes	Known to breed and forage
Preble's shrew	*Sorex preblei*	BLM	No	Does not occur
Pygmy rabbit	*Brachylagus idahoensis*	BLM, USFS, UT	Yes	May breed and forage
Rocky Mountain elk	*Cervus canadensis*	MIS	Yes	Known to breed and forage
Silky pocket mouse	*Perognathus flavus*	BLM	No	Does not occur
Spotted bat	*Euderma maculatum*	BLM, USFS, UT	Yes	No breeding or roosting habitat; foraging may occur
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM, USFS, UT	Yes	No breeding or roosting habitat; foraging likely to occur

TABLE D-6
SPECIAL STATUS SPECIES LISTED IN COUNTIES, NATIONAL FORESTS, AND BLM FIELD OFFICES WITHIN THE PROJECT AREA[1]

Common Name	Scientific Name	Status[2]	Suitable Habitat Present in Study Corridors[3]	Likelihood of Occurrence in Study Corridors[4]
Utah prairie dog	*Cynomys parvidens*	FWS T, UT	Yes	Known to breed and forage
Western red bat	*Lasiurus blossevillii*	BLM, UT	Yes	No breeding or roosting habitat; foraging may occur
White-tailed prairie dog	*Cynomys leucurus*	BLM	No	Does not occur

NOTES:
[1]Compiled from species lists obtained from the U.S. Fish and Wildlife (FWS) (county level), Bureau of Land Management (BLM) (state level), U.S. Forest Service (USFS) (forest level), and State of Utah (county level).
[2]Status abbreviations are as follows:
BLM = Plant and animal species designated as sensitive by Utah BLM
CAS = Conservation Agreement Species
FWS C = Federal candidate
FWS E = Federal endangered
FWS P = Petitioned species under review
FWS T = Federal threatened
FWS X = Federal nonessential/experimental
MIS = Management indicator species for the Dixie and Fishlake National Forests Land and Resource Management Plans (USFS 1986a; 1986b)
USFS = Species designated as sensitive by USFS Intermountain Region
UT = Animal species designated as sensitive by the State of Utah
[3]Suitable habitat is classified as present if the study corridors are within the known species range and contains required habitat for breeding, foraging, or roosting (animals) or required geology and vegetative communities (plants).
[4]Probability of occurrence within the Project area based on species breeding and foraging habitat requirements, current known range and distribution, and documented occurrence. "May occur" indicates suitable habitat is present in the Project area, but current distribution and documented occurrences indicate occupancy of the Project area is unlikely. "Likely to occur" indicates suitable habitat is present in the Project area, and current distribution and documented occurrences indicate occupancy of the Project area is probable.
[5]Considered endangered west of I-15 and north I-70 (61 *Federal Register* 54043-54060).

D.2 Special Status Species Accounts

Special status species include plants and animal species listed as endangered, threatened, proposed, or candidates for listing pursuant to the Endangered Species Act (ESA); species designated as sensitive by the BLM, USFS, or State of Utah; and species designated as MIS by the USFS. A list of special status species that potentially occur within the study corridors was compiled from several sources including (1) county-level lists (Beaver, Iron, Millard, Sevier, and Washington counties) of federally threatened, endangered, proposed, and candidate species (FWS 2011a); (2) county-level lists (Beaver, Iron, Millard, Sevier, and Washington counties) of state sensitive species (UDWR 2011b); (3) the BLM state-wide list of sensitive plant and animal species (BLM 2010b; BLM 2010c; Pontarolo 2011); (4) the USFS Region 4 list of sensitive species (USFS 2011a); and (5) MIS lists for the Dixie and Fishlake National Forests (USFS 1986a; USFS 1986b). The special status species list includes a total of 187 plants and animals known to occur within Beaver, Iron, Millard, Sevier, and Washington counties where the Project area is located, as well as USFS Region 4, the Dixie and Fishlake National Forests, and BLM-administered lands in Utah (Table D-6). The following summarizes the known distribution, habitat requirements, and recent

and historical locations for those species which may occur, are likely to occur, or are known to occur in the Project area.

D.2.1 Plants

D.2.1.1 Elsinore Buckwheat (USFS Sensitive)

Elsinore buckwheat (*Eriogonum batemanii* var. *ostlundi*) is endemic to Piute and Sevier counties in Utah. It grows on igneous gravels in shadscale, mixed desert shrub, sagebrush, juniper, and ponderosa pine communities (Utah Native Plant Society [UNPS] 2009). It is distributed in the Sevier River Valley from near Piute Reservoir northward to Glenwood (UNHP 2009). Elsinore buckwheat is known to occur in the study corridors in the Sevier River Valley and in the vicinity of Sage Flat.

D.2.1.2 Franklin Penstemon (BLM Sensitive)

The Franklin penstemon (*Penstemon franklinii*) occurs in unique vegetative communities on a gravelly, silty-sandy loam in purple three-awn, needlegrass, matchweed, and black sagebrush communities at 1,650 to 1,800 meters (5,400 to 5,900 feet). It is endemic to the Cedar Valley of central Iron County where it occurs between the north end of Cedar Valley and Bald Hills (UNPS 2009). The study corridors cross suitable habitat within the known range of the species. The Franklin penstemon is likely to occur in the study corridors.

D.2.1.3 Greenwood Goldenbush (BLM Sensitive)

The Greenwood goldenbush (*Haplopappus lignumviridis*) grows in crevices in igneous rock outcrops and cliffs at approximately 1,890 meters (6,200 feet) (UNPS 2009). It is found in several canyons that are tributaries to the middle Sevier River Valley in Piute and Sevier counties (UDWR 1998a). The study corridors are located within the known range of the species though suitable habitat is not present. The Greenwood goldenbush may occur in the study area.

D.2.1.4 Pinyon Penstemon (BLM and USFS Sensitive)

The Pinyon penstemon (*Penstemon pinoru*) is endemic to the Pine Valley Mountains of Washington and Iron counties, Utah. It occurs typically on north slopes in the understory of pinyon-juniper on Claron limestone or associated gravel at elevations from 1,710 to 2,040 meters (5,600 to 6,700 feet). Suitable habitat includes pinyon-juniper, mountain mahogany, Mormon tea, oak, sagebrush, and, less commonly, greasewood communities (Franklin 2005; UNPS 2009). The Pinyon penstemon is known to occur in the study corridors in the Pine Valley Mountains in Iron and Washington counties.

D.2.1.5 Sevier Townsendia (BLM and USFS Sensitive)

The Sevier townsendia (*Townsendia jonesii* var. *lutea*) occurs on gravelly-clay soils of the Arapien Shale in volcanic rubble. Habitat includes salt desert, mixed desert shrub, and juniper-sagebrush communities of the middle Sevier River Valley at 1,675 to 1,920 meters (5,500 to 6,300 feet). Current known distribution includes Sevier County (UNPS 2009). The study corridors are located within the known range of the species and suitable habitat is present. The Sigurd townsendia is likely to occur within the study corridors.

D.2.1.6 Utah Phacelia (BLM Sensitive)

The Utah phacelia (*Phacelia utahensis*) is endemic to the Sevier River Valley. The species grows on gypsiferous soils in salt desert shrub and pinyon-juniper communities on clay hills and banks of the Arapien Shale Formation at elevations between 1,675 to 1,890 meters (5,500 to 6,200 feet) (Franklin 2005; UDWR 1998a). The species is generally common only following years of favorable rainfall (UDWR 1998a). The study corridors are within the range of the Utah phacelia, suitable habitat is present, and the species has been documented in the study corridors south of Richfield, Utah (UNHP 2009).

D.2.1.7 Ward's Beardtongue (BLM and USFS Sensitive)

The Ward's beardtongue (*Penstemon wardii*), also known as Ward's penstemon, is endemic to Millard and Sevier counties, Utah. The species grows between 1,675 to 2,070 meters (5,500 to 6,800 feet) on semibarren, white to gray, fine-textured substrates of the Arapien Shale Formation in ephedra, rabbitbrush, shadscale, mountain mahogany, sagebrush, and pinyon-juniper communities (UNPS 2009; Welsh et al. 2003). The Ward's beardtongue is known to occur in the study corridors.

D.2.2 Fish

D.2.2.1 Bonneville Cutthroat Trout (BLM, USFS, and State Sensitive; MIS)

The Bonneville cutthroat trout (*Oncorhynchus clarki utah*) occurs in lakes and streams of the Bonneville Basin and a small portion of the Virgin River Drainage. It is most commonly found in high-elevation river reaches of drainages as they enter the Basin (Bosworth 2003). Habitat for the species is distributed widely across Utah and varies from high elevation streams with coniferous and deciduous riparian trees to low elevation streams in sage-steppe grasslands containing herbaceous riparian zones (Rodriguez 2012). Bonneville cutthroat populations are known to occur in Pine, Birch, Grass Valley, North, Briggs, Sam Stowe, and South creeks and the Beaver River (UNHP 2009; USFS 2011a). Due to impacts from the Twitchell Fire in 2010, plans for reintroduction of Bonneville cutthroat trout in Shingle Creek and Fish Creek were in process at the time of this document. The study corridors are located within the known range of the species and contains suitable habitat. The Bonneville cutthroat trout is known to occur in the study corridors.

D.2.2.2 Brown Trout (MIS)

The brown trout (*Salmo trutta*) is an MIS on both the Fishlake and Dixie National Forests. The species is native to Europe and western Asia but has been introduced as a sport fish into cool lakes and streams throughout Utah. The study corridors are within the known range of the species and UDWR has stocked streams and rivers that cross the study corridors (UDWR 2010). The brown trout is known to occur in the study corridors.

D.2.2.3 Cutthroat Trout (MIS)

The cutthroat trout (*Oncorhynchus clarki*) represents a combined treatment of the four subspecies (Bonneville, Colorado River, Yellowstone, and Lahontan) found in Utah. The cutthroat trout is an MIS on both the Fishlake and Dixie National Forests. The study corridors are located within the known range of the species and contains suitable habitat. The cutthroat trout is known to occur in the study corridors.

D.2.2.4 Desert Sucker (BLM and State Sensitive)

The desert sucker (*Catostomus clarki*) is found in small to moderate-sized streams with developed pools and riffles and rapids of the Virgin River system (UDWR 1998b). Currently, the species is known to inhabit the Santa Clara River in Washington County. The study corridors are located within the known range of the desert sucker and contain suitable habitat for the species. The desert sucker is known to occur in the study corridors.

D.2.2.5 Rainbow Trout (MIS)

The rainbow trout (*Oncorhyncus mykiss*) is an MIS on both the Fishlake and Dixie National Forests. The species is native to the western United States and has been introduced widely to cool waters in Utah as a sport fish. The study corridors are within the known range of the species and UDWR has stocked streams and rivers that cross the study corridors (UDWR 2010). The rainbow trout is known to occur in the study corridors.

D.2.2.6 Southern Leatherside Chub (BLM, USFS, and State Sensitive; MIS)

The southern leatherside chub (*Lepidomeda aliciae*) is a small minnow native to streams and rivers of the southeastern portion of the Bonneville Basin (UDWR 1998b). The leatherside chub generally inhabits low-gradient pools with limited riparian vegetation (UDWR 2006). The current known distribution includes the Sevier River and lower Clear Creek (UNHP 2009; USFS 2011a). Mid and upper Clear Creek, lower Fish Creek, and Shingle Creek were likely historical habitat. The study corridors are located within the known range of the species and contains suitable habitat. The southern leatherside chub is likely to occur in the study corridors.

D.2.3 Amphibians and Reptiles

D.2.3.1 Arizona Toad (BLM and State Sensitive)

The Arizona toad (*Bufo microscaphus*) occurs in southern Utah in Washington County. It is usually associated with permanent or semi-permanent water bodies in canyons with oak-pine or juniper-dominated woodland, although it can be found along riparian areas in the low desert (Bosworth 2003). The study corridors are within the range of the species and suitable habitat is present. The Arizona toad has been recorded in the vicinity of the study corridors near the Red Butte Substation (UNHP 2009). The Arizona toad is likely to occur in the study corridors along perennial waters in Washington County.

D.2.3.2 Western Toad (BLM and State Sensitive)

The western toad (*Bufo boreas*) occurs in montane habitats at high elevations (1,570 to 3,220 meters or 5,000 to 10,000 feet) in central and northern Utah. The western toad is associated with permanent water bodies in riparian, mountain shrub, mixed conifer, and aspen-conifer forest habitats. The species breeds in small pools, beaver ponds, reservoirs, and side channels of creeks and rivers. Adults utilize upland habitats during nonbreeding periods (Bosworth 2003). The UNHP data (2009) includes observations on the Fishlake National Forest near Annabella Reservoir and in the Beaver River, but there are no records in the study corridors. The study corridors are within the range of the species but most suitable habitat occurs at higher elevations. The western toad may occur in the study corridors.

D.2.4 Birds

D.2.4.1 American White Pelican (BLM and State Sensitive)

The American white pelican (*Pelecanus erythrorhynchos*) is a migratory species that breeds in northern Utah and winters in Mexico and southern California. Gunnison Island in the northern arm of the Great Salt Lake is the only nesting site for the American white pelican in Utah, and represents one of the four largest breeding colonies in North America (Parrish et al. 2002). During spring and fall migrations, pelicans occur on lakes and reservoirs throughout Utah. The American white pelican is commonly observed on lakes and reservoirs adjacent to and within the study corridors, including New Castle Reservoir. Although suitable breeding habitat is present, the American white pelican is not known to breed within the study corridors. Incidental migrants are likely to fly through or over the study corridors as well as forage.

D.2.4.2 Bald Eagle (BLM, USFS, and State Sensitive)

The bald eagle (*Haliaeetus leucocephalus*) was de-listed on August 8, 2007 (72 *Federal Register* 37346), but the species continues to receive federal protection through the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. There are 11 active bald eagle nests in Utah, all of which are located in large, mature cottonwood trees. Utah also supports a winter population of more than 1,200 birds. Wintering eagles typically forage along lakes, wetlands, and desert valleys, and roost in large trees and wooded canyons (UDWR 2006).

There are no known bald eagle nests within the study corridors, but several bald eagle winter roosts occur along the Beaver, Santa Clara, and Sevier rivers; Summit, South, and Devil creeks; Minersville, Baker, and Rocky Ford reservoirs; Quichapa and Rush lakes; and Heppler's Ponds. Wintering eagles have been observed within the study corridors (UNHP 2009). No suitable nesting for the bald eagle occurs in the study corridors; however, foraging and roosting habitat does occur.

D.2.4.3 Black Swift (BLM and State Sensitive)

The black swift (*Cypseloides niger*) is a colonial nesting species that constructs nests adjacent to waterfalls above 1,800 meters (6,000 feet), and forages in montane riparian habitats (Parrish et al. 2002). The only known breeding sites are located in the Wasatch Mountains at Bridal Veil Falls, Aspen Grove, and Stewart Falls (Bosworth 2003). Breeding has yet to be verified elsewhere in the state, although several potential sites have been identified in south-central Utah, including Bullion Falls (Parrish et al. 2002) on the Fishlake National Forest. Data from UNHP indicate individuals have been seen migrating through the study corridors. Aside from transient individuals during seasonal migrations, it is unlikely the black swift breeds or forages within the study corridors.

D.2.4.4 Black-throated Grey Warbler (USFS Species of Concern)

The black-throated grey warbler (*Dendroica nigrescens*) is a migratory bird species that breeds in the western United States and winters in Central America. The species is a common summer resident throughout Utah. The black-throated grey warbler breeds and nests in oak, mountain mahogany, and pinyon-juniper woodlands and also is known to utilize lowland riparian habitats for foraging and during migration (Parrish et al. 2002). The study corridors contain suitable pinyon-juniper and mountain shrub

nesting habitats for the species. The black-throated grey warbler likely is to breed and forage in the study corridors.

D.2.4.5 Bobolink (BLM and State Sensitive)

The bobolink (*Dolichonyx oryzivorus*) occurs in small, isolated breeding populations across northern Utah (Parrish et al. 2002). The species inhabits mesic grasslands associated with riparian and wetland communities and sub-irrigated pastures (Bosworth 2003). The study corridors are outside of the known breeding range of this species and suitable breeding and foraging habitat is not present. Transient individuals may be present in the study corridors during seasonal migrations.

D.2.4.6 Brewer's Sparrow (MIS)

The Brewer's sparrow (*Spizella breweri*) is an MIS on the Fishlake National Forest. It is considered a shrub steppe obligate, strongly associated with sagebrush in areas with scattered shrubs and short grass. It nests low in sagebrush, other shrub, or cactus (Rodriguez 2006). As the study corridors are located within the known range of the species and breeding and foraging habitat is present, the Brewer's sparrow is likely to occur in the study corridors.

D.2.4.7 Burrowing Owl (BLM and State Sensitive)

The burrowing owl (*Athene cunicularia*) is widely distributed throughout Utah. It nests in sparsely vegetated grassland, sagebrush, and desert shrub communities, as well as agricultural fields throughout the state (UDWR 2006). The burrowing owl is a neotropical migrant that breeds throughout the western United States and migrates to southern California and Central America during the winter. The owl utilizes natural burrows constructed by prairie dogs (*Cynomys* spp.), ground squirrels (*Spermophilus* spp.), and badgers (*Taxidea taxus*), as well as culverts and various manmade structures. The burrowing owl is known to nest and forage in the study corridors, especially in Millard, Beaver, and Iron counties (Bosworth 2003).

D.2.4.8 California Condor (Federal Endangered and Federal Experimental)

Regulatory Status

The California condor (*Gymnogyps californianus*) was listed by the FWS as an endangered species on March 11, 1967 (32 *Federal Register* 4001), under the ESA of 1966. A special provision of the ESA, the 10(j) rule, allows for the designation of nonessential populations of listed species (Arizona Game and Fish Department [AGFD] 2008a), and re-introduction efforts for the condor were developed under this rule. Listing covers only those populations within the United States and excludes the nonessential experimental populations in specific portions of Arizona, Nevada, and Utah (61 *Federal Register* 54043). Critical habitat for the condor was established in 1977 (42 *Federal Register* 47840) but is not located in the Project area. In Utah, California condors are considered endangered west of Interstate 15 (I-15) and north of Interstate 70 (I-70). Any condors that leave the experimental population area will be considered as endangered (61 *Federal Register* 54043). A recovery plan for the California condor was published in 1996. The recovery objective of the plan is to downlist the condor to threatened. Outlined in the plan, the minimum criterion for reclassification includes the maintenance of at least two noncaptive populations

spatially disjunct and noninteracting, and one captive population which must (1) number 150 individuals, (2) contain at least 15 breeding pairs, and (3) have a positive rate of population growth (FWS 1996).

Taxonomy and Life History

The California condor is a member of the New World vulture, family *Cathartidae* (American Ornithologists' Union [AOU] 1998). California condors feed exclusively on large carrion. A reduction in their range coincided with the megafaunal extinctions in the late Pleistocene. During those times, they probably used carcasses of large mammals such as mastodon, ground sloth, and giant camel. Until the mid-1800s, condors fed on bison, deer, pronghorn, beached marine mammals, and salmon. More recently, the condor's diet has consisted mostly of deer, cattle, and smaller mammals (AGFD 2008a; Ehrlich et al. 1988; Snyder and Rea 1998).

The California condor has a wingspan of 9.5 feet, and adult birds typically weigh about 19 pounds but can attain 25 pounds. They may live to 60 years in the wild (AGFD 2008a; Snyder and Rea 1998; Snyder and Schmitt 2002; Terres 1980). Condors reach reproductive age at 5 to 7 years and form long-term pair bonds. A recognizable nest is not constructed, but debris adjacent to the nest site may be gathered and consolidated where the egg will be laid (Snyder and Rea 1998). Nest sites may be on the floor of a sheltering cave entrance or on a cliff shelf. Condors normally produce a single egg every other year. Both adults share incubation and feeding responsibilities. Incubation is approximately 8 weeks and young will not fledge for 5 to 6 months. Juveniles are highly dependent on adults for the first several months and typically remain in the nest area during their first year, often into the early breeding season of the following year (hence the alternate year breeding cycle) (AGFD 2008a; Ehrlich et al. 1988; Snyder and Rea 1998).

Distribution and Habitat Requirements

Historically, the California condor ranged in the 1800s from British Columbia to Baja California (AOU 1998). The fossil record indicates that in prehistoric times these nonmigratory birds also were present across the southern United States to Florida, and north along the east coast to New York. By the 1970s, condors were resident only in southern California, with breeding sites limited to the Los Padres National Forest (AOU 1998; AGFD 2008a, 2008b; Terres 1980).

Condors were placed on the endangered species list because of declining populations. A captive breeding program was initiated by the FWS in 1980 (AGFD 2008a). Despite protection, populations continued to decline, and by 1982, only 22 wild condors remained (AGFD 2008a; Peregrine Fund 2008). A decision was made to rely on captive breeding programs for recovery of the condor, and the last wild condor was brought into captivity in 1987. In 1992, releases to the wild began in central and southern California, to be followed by releases in the Vermilion Cliffs area of Arizona in 1996 and in Baja California in 2002. There are currently 81 wild condors in California, 63 in Arizona, and 7 in Baja California (AGFD 2008a). The Vermillion Cliffs population is managed by the BLM (AGFD 2008a). The current range of this population is centered on the Colorado River Basin in northern Arizona and southern Utah.

Condors occupy remote rugged areas at low-to-moderate elevations that support large mammals (e.g., deer), which they consume as carrion. These birds require cliff sites or caves for nesting and cliffs, tall conifers, or snags for roosting. Condors prefer nest sites inaccessible to terrestrial predators (Snyder and Rea 1998). Because they are such large birds, they typically select roosting sites near cliffs where updrafts provide adequate lift for them to take flight (AOU 1998; AGFD 2008a, 2008b; Snyder and Rea 1998; FWS 1996).

Primary Threats to Survival

Because condors have a low reproductive rate, condor populations can be influenced even by sporadic mortality (FWS 1996). Shooting and egg collecting contributed to the decline of condors in the 1800s and 1900s. Other causes of decline in the condor population include pesticides such as DDT that cause eggshell thinning; lead poisoning as the result of ingesting lead fragments from unrecovered or field dressed deer; secondary poisoning from ingesting carcasses of poisoned coyotes; collision and electrocution hazards associated with electric powerlines; and conversion of ranch lands (where condors feed on dead livestock) to housing (AGFD 2008a; Snyder and Rea 1998; Terres 1980; FWS 1996). Since 1995, there has been a total of seven documented transmission line-related condor deaths in California and Arizona (Ventana Wildlife Society 2007).

Many of these threats continue to pose obstacles to the recovery of the California condor. Lead poisoning, electrocution, shooting, and starvation have all been documented as causes of mortality for reintroduced condors (Ventana Wildlife Society 2007).

Occurrence in the Project Area

The current range of the introduced population is centered at the Vermillion Cliffs and Grand Canyon in northern Arizona. The Project area is located within the known range of the species in Utah but does not contain suitable nesting habitat. The Project area contains suitable foraging habitat and transient individuals could be found in the study corridors.

D.2.4.9 Ferruginous Hawk (BLM and State Sensitive)

The ferruginous hawk (*Buteo regalis*) is widely distributed throughout Utah, being most prevalent in the southern Bonneville Basin of southwest Utah. It nests in trees and large shrubs in grassland, desert shrub, sagebrush, and pinyon-juniper habitats, and preys on small mammals including rabbits, hares, and pocket gophers (Bosworth 2003; Parrish et al. 2002). Data from UNHP indicate ferruginous hawks are located throughout valleys and foothills in the Project area, particularly absent from high-elevation regions and the sparsely vegetated desert flats (Bosworth 2003). The ferruginous hawk is known to nest and forage throughout the study corridors.

D.2.4.10 Greater Sage-grouse (Federal Candidate; BLM, USFS, and State Sensitive)

Regulatory Status

The greater sage-grouse (*Centrocercus urophasianus*) became a candidate species for listing as threatened or endangered on March 4, 2010 (75 *Federal Register* 13909). Prior to this rule, the FWS had listed the Washington state population of sage-grouse as a candidate for federal listing in 2001 (66 *Federal Register* 22984). In both rules, the FWS stated that formal listing for the species is warranted, but is precluded by other higher priority listing actions (FWS 2010b; 2001).

In addition to its candidate status under the ESA of 1973, the greater sage-grouse is BLM, USFS, and UDWR sensitive. The UDWR published a Greater Sage-Grouse Management Plan in 2009 (UDWR 2009).

Taxonomy and Life History

The greater sage-grouse is a member of the pheasant family (Phasianidae) and is the largest North American grouse species. This species formerly included *C. minimus*, which is now recognized as a distinct species, the Gunnison sage-grouse (75 *Federal Register* 13909). Division of *C. urophasianus* into two distinct subspecies along varying geographic lines has been debated (Schroeder et al. 1999) and is considered invalid by many experts (Connelly et al. 2004). The division into two subspecies is not recognized by the FWS (68 *Federal Register* 6500).

Adult male greater sage-grouse are larger than adult females. Males range in size from 4 to 7 pounds and measure 27 to 32 inches, while females weigh from 2 to 4 pounds and measure 20 to 25 inches. Both sexes have narrow, pointed tails; a variegated pattern of grayish brown, buff, and black on the upper parts of the body; and a diffuse black abdominal pattern. Males have blackish brown throats, a dark V-shaped pattern on the neck, and white breast feathers. When strutting during spring mating displays, males inflate two gular sacs of olive green skin and erect hair-like black feathers (filoplumes) on the back of the neck. Females lack the V-shaped pattern, their throats are buff, and their lower throats and breasts are barred with blackish brown (Schroeder et al. 1999).

Sage-grouse breeding occurs between late February and early June and centers on a lek or strutting ground. Leks are usually located in open areas surrounded by low sagebrush. Male and female grouse attend leks where males perform ritualized courtship displays in the early morning hours. Mating is thought to occur on the lek and hens nest 1 to 2 weeks after the courtship display (UDWR 2009). Nesting usually occurs under sagebrush within 1 to 2 miles of the lek (Connelly et al. 2004; Knerr 2007; Robinson 2007). Sage-grouse generally have lower reproductive rates and higher survival rates than other species of upland game birds (Connelly and Braun 1997). Average clutch size for first nests varies from 6.0 to 9.5 throughout the species range (Schroeder 1997; Sveum et al. 1998). Sage-grouse chicks are dependent on insect prey base after hatching (Johnson and Boyce 1990), but their diet shifts almost entirely to sagebrush as local vegetation desiccates in the late summer (Schroeder et al. 1999).

Distribution and Habitat Requirements

The greater sage-grouse is a sagebrush-obligate species that depends on sagebrush habitats in all seasons (Connelly et al. 2004). Sage-grouse typically use several seasonal habitats including breeding and nesting habitat in the spring and early summer, brood-rearing habitat in the summer and fall, and winter habitat. Large, interconnected expanses of sagebrush with healthy, native understories are an essential habitat component in all seasonal habitats, and some populations of grouse migrate seasonally to meet these requirements (Connelly et al. 2004). There is little information available regarding minimum sagebrush patch sizes required to support populations of sage-grouse.

Historical distribution of the greater sage-grouse includes 13 U.S. states (Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Colorado, Utah, South Dakota, North Dakota, Nebraska, and Arizona) and three Canadian provinces (British Columbia, Alberta, and Saskatchewan) (Schroeder et al. 2004; Schroeder et al. 1999; Young et al. 2000). Current distribution represents approximately 56 percent of historical range across 11 U.S. states (Washington, Oregon, California, Nevada, Idaho, Montana, Wyoming, Colorado, Utah, South Dakota, and North Dakota) and two Canadian providences (Alberta and Saskatchewan) (Schroeder et al. 2004). Within the state of Utah, greater sage-grouse are found in 26 counties with the largest populations occurring in western Box Elder County, the Blue and Diamond mountains in Uintah County in northeastern Utah, Rich County, and on Parker Mountain in south central Utah (UDWR 2009). Changes in distribution are the result of sagebrush alteration and degradation (Schroeder et al. 2004).

Primary Threats to Survival

Sage-grouse numbers have declined rangewide. Population declines have coincided with the decrease in habitat quality. The reasons for habitat loss vary from site to site, but include wildfire, urban expansion, development, agricultural conversion, herbicide treatments, rangeland seeding, noxious weeds and invasive species expansion, conifer encroachment, drought, and improper livestock grazing management (Connelly et al. 2004). The UDWR allows and regulates public hunting of the species under its upland game program.

Occurrence in the Project Area

Sagebrush habitats occur at various sites along the study corridors, and the UDWR has delineated some crucial brooding and winter habitat for greater sage-grouse between Sigurd and Red Butte (UDWR 2011a). The primary sage-grouse habitat in the Project area includes the Bald Hills, Minersville, and Milford areas (UDWR geographic information system data). Sagebrush communities in these areas have been degraded by wildfire and the spread of invasive grasses and reduction in native grasses and forbs. During surveys of suitable habitat in the study corridors in March 2010, one known lek was confirmed and one potential new lek was identified.

D.2.4.11 Hairy Woodpecker (MIS)

The hairy woodpecker (*Picoides villosus*) is an MIS on the Fishlake National Forest. It is a fairly common resident of mixed-conifer and riparian deciduous habitats up to 9,500 feet in elevation (Rodriguez 2006). The study corridors are located within the range of the species and contain suitable breeding and foraging habitat. The hairy woodpecker is likely to occur within the study corridors.

D.2.4.12 Lewis's Woodpecker (BLM and State Sensitive)

The Lewis's woodpecker (*Melanerpes lewis)* inhabits open ponderosa pine and cottonwood riparian forests in southern Utah (Parrish et al. 2002). The species requires mature or burned stands with large dead or decaying trees that provide nesting cavities. Although there are species observations from the cities of Parowan and Monroe (UNHP 2009), the Lewis's woodpecker has not been recorded in the study corridors. There is no suitable breeding habitat for the Lewis's woodpecker in the study corridors. Suitable foraging habitat occurs in the study corridors on the Fishlake and Dixie National Forests and incidental migrants may be encountered. The Lewis's woodpecker may be encountered in the study corridors.

D.2.4.13 Lincoln's Sparrow (MIS)

Lincoln's sparrow (*Melospiza lincolnii*) is an MIS on the Fishlake National Forest. It is found in wet montane meadows and riparian habitats (Rodriguez 2006). The study corridors occur within the range of the species but lack suitable breeding habitat. Suitable foraging habitat for the species is found within the study corridors and transient and incidental migrant Lincoln's sparrows are likely to occur in the Project area.

D.2.4.14 Long-billed Curlew (BLM and State Sensitive)

The long-billed curlew (*Numenius americanus*) is a relatively common migratory species that inhabits arid grasslands, grassy shorelines, and agricultural areas in northern and central Utah. The species is less common in southern Utah. Confirmed breeding has occurred near the Milford Wind Farm and the town of Minersville (UNHP 2009). The study corridors are located within the range of the species and contain suitable breeding and foraging habitat. The long-billed curlew is known to occur in the study corridors.

D.2.4.15 MacGillivray's Warbler (MIS)

MacGillivray's warbler (*Oporornis tolmiei*) is an MIS on the Fishlake National Forest. It is found in willow and other dense shrubs in riparian areas or in moist woodlands that provide cover in all seasons (Rodriguez 2006). The study corridors are located within the range of the species, but do not contain suitable breeding habitat. Suitable foraging habitat is present within the study corridors and incidental migrants also may occur.

D.2.4.16 Mexican Spotted Owl (Federally Threatened)

Regulatory Status

The Mexican spotted owl (*Strix occidentalis lucida*) was federally listed as a threatened species on March 16, 1993 (58 *Federal Register* 14248). Critical Habitat was designated originally on March 16, 1993 (58 *Federal Register* 14248), and subsequently revoked on March 25, 1998 (63 *Federal Register* 14378). Critical Habitat was re-established on February 1, 2001 (66 *Federal Register* 8530), and a comment period on Critical Habitat was re-opened on November 18, 2003 (68 *Federal Register* 65020). The current defined Critical Habitat was established on August 31, 2004 (69 *Federal Register* 53181). This apparent irresolution in designation of Critical Habitat is the result of conflict between environmental and economic interests in late seral stage coniferous forests inhabited by the bulk of northern spotted owls in the Pacific Northwest. This conflict has resulted in several species management plans and several FWS status reviews for the species (Gutierrez et al. 1995).

A Recovery Plan for the Mexican spotted owl was published in 1995. The recovery objective of the plan is to delist the species, which can occur when the population in the three most populated Recovery Units are stable or increasing, habitat monitoring protocols are designed and implemented, and a long-term management plan is in place to ensure appropriate management (FWS 1995).

Taxonomy and Life History

The Mexican spotted owl is one of three recognized subspecies of the spotted owl in North America and is the only subspecies that occurs in the Project area. The other subspecies, the California spotted owl (*S. o. occidentalis)* and the northern spotted owl (*S. o. caurina*), are found along the west coast from south-central California north to southwestern British Columbia (Gutierrez et al. 1995).

Spotted owls usually are found in steep canyons with mature or old growth forest, but they also may be found in canyons with steep cliffs and relatively little forest habitat. They usually occur in habitats characterized by a multi-layered canopy with a perennial water source nearby. They have been reported at elevations ranging from 3,700 feet to the subalpine transition (Ganey 1998; Gutierrez et al. 1995; Johnsgard 1988).

Spotted owls are nocturnal ambush hunters that feed mainly on small rodents with wood rats (*Neotoma* spp.) often the dominant dietary component. Invertebrates make up a small portion of their prey, and they may supplement their diet with birds, bats, or lagomorphs (rabbits and hares) (Ehrlich et al. 1988; Ganey 1998; Gutierrez et al. 1995). In Arizona, Mexican spotted owls feed on wood rats, white-footed mice (*Peromyscus leucopus*), voles (*Microtus* spp.), rabbits, and pocket gophers (*Thomomys* spp.) (Ganey 1998).

Spotted owls may construct nests in tree cavities (usually in live trees) or on constructed platforms on tree limbs. In Utah, they nest almost exclusively in caves (Gorrell et al. 2005). They may use abandoned raptor or corvid platform nests (Ehrlich et al. 1988; Terres 1980). They produce from two to four eggs, with the typical number being two (Ehrlich et al. 1988; Gutierrez et al. 1995; Terres 1980).

Distribution and Habitat Requirements

The Mexican spotted owl is a permanent resident in the interior mountain ranges of western North America, from southern Utah and central Colorado south through the mountains of Arizona, New Mexico, and extreme west Texas. Its range in Mexico includes mountainous regions from Sonora, Chihuahua, Coahuila, and Nuevo Leon south to Jalisco, Michoacán, and Guanajuato (AOU 1998).

In Utah, the Mexican spotted owl normally occupies canyon habitats associated with riparian areas. An unaltered core area of approximately 600 acres centered on the nest site is the currently recommended disturbance buffer (Gutierrez et al. 1995). Habitat typically has a structured canopy, a perennial water source, and a rodent-dominated prey base of adequate size (Gutierrez et al. 1995).

Primary Threats to Survival

The primary threats to spotted owls in Utah are recreation, oil and gas development, livestock grazing, and catastrophic wildfire (Ehrlich et al. 1988; Gutierrez et al. 1995). Secondary human-caused habitat impacts include losses associated with developments for urban or suburban expansion and development for agriculture, reservoirs, mining, and fuel wood-harvesting (Gutierrez et al. 1995).

Occurrence in the Project Area

There are no known occurrences of Mexican spotted owl in the Project area. The Project area is within the known range of the species but the study corridors lack suitable breeding and foraging habitat. Transient or dispersing juvenile Mexican spotted owls may occur in the study corridors, but resident pairs and individuals are highly unlikely.

D.2.4.17 Mountain Bluebird (MIS)

The mountain bluebird (*Sialia currucoides*) is an MIS on the Fishlake National Forest. It nests in cavities and prefers open terrains with an occasional tree, rock, fencepost, transmission line, or other perches from 2,100 to 3,350 meters (7,000 to 11,000 feet) elevation (Rodriguez 2006). The study corridors are within the known range of the species and contain suitable breeding and foraging habitat. The mountain bluebird is likely to occur in the study corridors.

D.2.4.18 Mountain Plover (BLM and State Sensitive)

The mountain plover (*Charadrius montanus*) was formerly a candidate to be federally listed as threatened. The National Park Service withdrew the listing on September 9, 2003, because newly acquired information indicated the threats to the species originally included in the proposal were not as significant as earlier believed (68 *Federal Register* 53803). The mountain plover is associated with shortgrass prairie landscapes where the topography is fairly flat and the vegetation is sparse, composed primarily of blue grama (*Bouteloua gracilis*) and buffalo grass (*Buchloe dactyloides*) (Parrish et al. 2002). Mountain plovers often breed near areas of excessive disturbance (Knopf and Miller 1994) and prairie dog colonies (Knowles et al. 1982). Breeding in Utah (Duchesne and Uintah counties) has not been documented since 2002 and the Utah population may have been extirpated (Bosworth 2003). The study corridors are within the known range of the species and contain suitable breeding and foraging habitat. Presence of this species in the study corridors likely is limited to incidental migrants.

D.2.4.19 Northern Flicker (MIS)

The northern flicker (*Colaptes auratus*) is an MIS on the Dixie National Forest. It is a cavity nester found in open areas, forest edges, clear-cut areas, burnt areas, agricultural lands, and residential areas (Rodriguez 2012). The study corridors are located within the known range of the species and contain suitable breeding and foraging habitat. The northern flicker is known to occur in the Project area.

D.2.4.20 Northern Goshawk (BLM, USFS, and State Sensitive; MIS)

The northern goshawk (*Accipiter gentilis*) is a relatively uncommon species in Utah. It generally inhabits mature ponderosa pine, mixed conifer, and aspen communities at elevations between 1,820 to 3,040 meters (6,000 to 10,000 feet). The study corridors are located within the known range of the species in Utah and contain foraging habitat; however, suitable nesting habitat does not occur. The northern goshawk may occur in the study corridors.

D.2.4.21 Peregrine Falcon (USFS Sensitive)

The peregrine falcon (*Falco peregrinus anatum*) currently breeds on the Colorado Plateau and along the Wasatch Front in Utah. Nests are located typically on cliff ledges, but individuals also are known to nest on city buildings. Peregrine falcons forage for avian prey in a variety of open habitats including marshes, desert shrub, sagebrush, and grasslands (Bosworth 2003). The study corridors are located within the known range of the species. Peregrine falcons are likely to occur in the study corridors.

D.2.4.22 Sage Thrasher (MIS)

The sage thrasher (*Oreoscoptes montanus*) is an MIS on the Fishlake National Forest. It is a sagebrush obligate associated with semiarid sagebrush plains or shrubby/open woodland growth on foothills (Rodriguez 2006). The study corridors are located within the known range of the species and contain suitable nesting and foraging habitat. The sage thrasher is likely to occur within the study corridors.

D.2.4.23 Short-eared Owl (BLM and State Sensitive)

The short-eared owl (*Asio flammeius*) breeds across the northern two-thirds of Utah and occurs throughout the state during nonbreeding periods (Bosworth 2003). The species nests on the ground in a variety of open habitats including arid grasslands, marshes, and agricultural fields and winters in desert scrub and sagebrush habitats (Bosworth 2003). There are two records of the short-eared owl in the vicinity of the study corridors, but no breeding has been documented (UNHP 2009). Suitable short-eared owl breeding and foraging habitat is present and the species is likely to occur in the study corridors.

D.2.4.24 Song Sparrow (MIS)

The song sparrow (*Melospiza melodia*) is an MIS on the Fishlake National Forest. It is one of the most widespread, diverse, and geographically variable of all North American birds. It nests on the ground or in shrub, thicket, emergent vegetation, and small trees within 4 feet of the ground (Rodriguez 2006). The study corridors are located within the known range of the species and contain suitable breeding and foraging habitat. The song sparrow is likely to occur in the study corridors.

D.2.4.25 Southwestern Willow Flycatcher (Federally Endangered)

Regulatory Status

The Southwestern willow flycatcher (*Empidonax traillii extimus*) was listed as an endangered species on February 27, 1995, primarily because of loss and modification of riparian habitats (60 *Federal Register* 10693). Critical Habitat was later designated on July 22, 1997 (62 *Federal Register* 39129). A court decision in 2001 resulted in a subsequent final rule on Critical Habitat on October 19, 2005 (70 *Federal Register* 60885). The critical habitat includes a portion of the Virgin River in Washington County, Utah. A 5-year review of the species completed by the FWS in 2005 found that classification as endangered was warranted (73 *Federal Register* 14995).

A Recovery Plan for the Southwestern willow flycatcher was published in 2003. The recovery objective of the plan was to reclassify the species to threatened, leading to the ultimate delisting. Reclassification status includes increasing the total population to 1,950 geographically distributed territories, which must be maintained for 5 years before delisting can occur (FWS 2002).

Taxonomy and Life History

The Southwestern willow flycatcher was described originally by Audubon as Traill's flycatcher (*Muscicapa traillii*) from specimens obtained in wooded areas along the Arkansas River (Sedgwick 2000). Phillips (1948) described *E. t. extimus*, the Southwestern willow flycatcher, from specimens collected on the San Pedro River in southeastern Arizona. Depending on the author, there are four or five recognized subspecies of the willow flycatcher: *E. t. traillii*, *E. t. adastus*, *E. t. brewsteri*, *E. t. extimus*, and *E. t. campestris* as the outlier (Sedgwick 2000).

Southwestern willow flycatchers normally select nest sites in thickets of shrubs and trees between 4 and 7 meters (4 to 23 feet) in height, with dense foliage between ground level and 4 meters (13 feet) (FWS 2002; Ehrlich et al. 1988). The nest is an open, compact cup of plant bark, fiber, and grass, and is lined with a thin layer of fine grass and cottony and silky plant materials. There are frequently feathers in the rim, and the nest may have plant material dangling from the bottom (Harrison 1979). Nest trees are often

rooted in or near water. Plant species diversity varies in nest territories. The Southwestern willow flycatcher will nest in native riparian species where available, but also will nest in monocultures of salt cedar (*Tamarix* sp.) or Russian olive (*Elaeagnus angustifolia*) (U.S. Geological Survey 2008). Nest sites are commonly reported in Geyer willow (*Salix geyeriana*), Goodding willow (*S. gooddingii*), box elder (*Acer negundo*), and live oak (*Quercus agrifolia*) (Sogge et al. 1997). Southwestern willow flycatchers usually spend only three to four months on their breeding grounds, spending the rest of the year in migration or at wintering grounds (FWS 2002). Females lay a clutch of three to four eggs (FWS 2002). Nestlings fledge after 12 to 15 days (Ehrlich et al. 1988; FWS 2002).

Like most other flycatchers, the Southwestern willow flycatcher forages primarily by flying from a perch to capture flying insects (Ehrlich et al. 1988). It will use gleaning techniques when foraging for spiders, millipedes, and other flightless arthropods, and also when feeding on berries (Sedgwick 2000, Terres 1980). Food preferences of the Southwestern willow flycatcher are reported by Bent (1942), in documentation associated with the Alder flycatcher. These were considered a single species at the time the data were collected, and the sample set included both species. In the sampled diets, animal material made up 96 percent and vegetable material 4 percent of the food. The vegetable part of the diet included elderberries (*Sambucus* spp.), blackberries or raspberries (*Rubus* spp.), dogwood berries (*Cornus* spp.), juniper berries (*Juniperus* sp.), and unidentified fruits and seeds.

Distribution and Habitat Requirements

All subspecies of the willow flycatcher winter in Central America, from southwestern Mexico (Nayarit and Oaxaca) south to Panama and possibly northwestern Columbia (AOU 1998). Migration routes are relatively unknown (FWS 2002) and are believed to pass through the southern and southwestern parts of the United States, with the northern subspecies passing through the breeding areas of the Southwestern willow flycatcher (AOU 1998, Sogge et al. 1997). The normal spring migration period is from early May through early June, and the fall migration may extend from late July through September (Phillips et al. 1964). Historic breeding records exist for southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico (FWS 2002).

In the western United States, Southwestern willow flycatchers are often found on willow-covered islands, brush along watercourses, beaver meadows, and mountain parks, always in close association with riparian vegetation and lentic waters (FWS 2002). They may be found as high as 2,400 meters (7,875 feet), and they also follow willow- or cottonwood-lined streams out into desert regions (Terres 1980). Southwestern willow flycatcher territories and nest sites usually are located near open water, cienegas, marshy seeps, or saturated soils (Sogge et al. 1997). In the semiarid and arid parts of the Southwest, hydrologic conditions can vary radically both within a season and between years. Many sites have surface water or saturated soil only during the early part of the breeding season. Breeding habitat on the edge of a reservoir may have standing water during a wet year, or it may be farther from surface water during dry conditions (Sogge et al. 1997).

Four specific habitat types have been described as breeding areas for the Southwestern willow flycatcher (Sogge et al. 1997). The first of these types is monotypic high-elevation willow. This habitat consists of dense stands of willows 3 to 7 meters (10 to 23 feet) in height, with no distinct overstory. This community is often associated with sedges, rushes, or other herbaceous wetland plants. A second habitat type is monotypic exotic dense stands of salt cedar or Russian olive up to 10 meters (33 feet) in height. These species form a dense, closed canopy with no distinct understory layer (Sogge et al. 1997).

Native broadleaf-dominated communities form a third habitat type. This habitat may consist of a single species, such as Goodding willow, but often contains other broadleaf tree and shrub species, including

cottonwood (*Populus* spp.), other willows, box elder ash (*Fraxinus* spp.), alder (*Alnus* spp.), and buttonbush (*Cephalanthus occidentalis*). The vegetation in this habitat type ranges in height from 3 to 15 meters (10 to 49 feet). There are trees of various size classes, and there is often a distinct overstory. The fourth and final habitat type is a mixture of native and exotic species, including those listed above. Within any particular area, the native and exotic species may be dispersed as patches dominated by natives or exotics, or they may be more evenly distributed throughout the area (Sogge et al. 1997).

Regardless of the species composition, all of these habitats share common structural characteristics. Occupied habitats always have dense vegetation in the patch interior, and dense patches are often interspersed with small clearings, open water, or areas of sparse shrubs. Habitat patches can vary in size and shape, with some occupied areas being relatively dense, linear, contiguous stands, and others being large, irregularly shaped mosaics of dense vegetation intermingled with open areas. Patch sizes can range from as little as 0.8 hectares (2.0 acres) to several hundred hectares (several hundred to a thousand acres). Southwestern willow flycatchers have not been found nesting in narrow riparian habitats less than 10 meters (33 feet) wide (Sogge et al. 1997).

Migration and wintering habitat may differ from breeding habitat. During migration, riparian habitat along major southwestern drainages is commonly used, but a close association with water may not always exist. These areas might be considered stopover areas and may be very important resources for the Southwestern willow flycatcher (FWS 2002).

Primary Threats to Survival

Two primary factors have been identified as serious threats to the continued existence of the Southwestern willow flycatcher (FWS 2002). These threats are the loss and degradation of riparian habitat and brood parasitism by brown-headed cowbirds (*Molothrus ater*). The primary causes for riparian alteration and degradation include urban and agricultural development, water diversion and impoundment, channelization, livestock grazing, off-road vehicles and other recreational use, and hydrological changes resulting from these uses (FWS 2002; Jones and Cahlan 1975).

The FWS (2002) believes the invasion of salt cedar is a factor in the loss and modification of habitat for the Southwestern willow flycatcher. Many other human activities, including livestock grazing, water diversion, channelization, and vegetation removal in riparian areas tend to favor the spread of salt cedar. The spread of salt cedar coincides with the decline of the Southwestern willow flycatcher, although the flycatchers have been documented to breed in dense salt cedar stands (FWS 2002).

Brown-headed cowbirds also are a threat to Southwestern willow flycatchers because of their reproductive strategy of brood parasitism. The spread of cowbirds into the range of the Southwestern willow flycatcher began in the late 1800s as settlers converted large tracts of land for agricultural and grazing use. The Southwestern willow flycatcher is a common host to cowbirds (Ehrlich et al. 1992; Sogge et al. 1997; FWS 2002). The flycatchers appear to be nearly incapable of rearing their own young if a cowbird chick is in the nest, and parasitism almost always leads to a complete failure of the nest (Sogge et al. 1997).

Occurrence in the Project Area

There is no designated critical habitat within or near the Project area. However, the Project area in Washington and southern Iron counties is within the breeding range of the Southwestern willow flycatcher (Sedgwick 2000). Four occurrence records exist in the vicinity of the Project area, but no

breeding has been documented prior to 2010 resource surveys. The last observation of the species near the study corridors was 1982 (UNHP 2009). The BLM has identified suitable nesting and foraging habitat in the vicinity of Pinto and Little Pinto Creeks (Pontarolo 2010). During 2010, EPG surveys located the Southwestern willow flycatcher in 4 of 5 survey periods in areas of dense willow riparian vegetation behind Newcastle Reservoir. The Southwestern willow flycatcher is known to breed and forage in the study corridors.

D.2.4.26 Three-toed Woodpecker (BLM, USFS, and State Sensitive)

The three-toed woodpecker (*Picoides dorsalis*) is a relatively uncommon species that inhabits high-elevation, montane coniferous forests in the south-central part of the state. Spruce-fir forests represent the primary breeding habitats for the three-toed woodpecker, and the species depends on recent burns and spruce bark beetle infestations to create foraging habitat (Parrish et al. 2002). The study corridors are located within the range of the species but do not contain suitable breeding habitat. Suitable foraging habitat is located within the study corridors and three-toed woodpeckers may occur in the study corridors.

D.2.4.27 Vesper Sparrow (MIS)

The vesper sparrow (*Pooecetes gramineus*) is an MIS on the Fishlake National Forest. It can be found in grassland, prairie, savanna, old fields, arid scrub, sagebrush, and woodland clearings (Rodriguez 2006). The study corridors are located within the known range of the species and contain suitable breeding and foraging habitat. The vesper sparrow is likely to occur in the study corridors.

D.2.4.28 Western Bluebird (MIS)

The western bluebird (*Sialia mexicana*) is an MIS on the Fishlake National Forest. It is found in open woodlands and pastures where cavities in old trees provide nesting sites. It is most abundant in open ponderosa pine forests of the Transition Zone, but also may be found in oak woodlands, pinyon-juniper, mixed-conifer, and subalpine forests (Rodriguez 2006). The study corridors are located within the known range of the species and contain suitable breeding and foraging habitat. The western bluebird is likely to occur in the study corridors.

D.2.4.29 Wild Turkey (MIS)

The wild turkey (*Meleagris gallopavo*) is an MIS on the Dixie National Forest. It is found in forested areas during the winter and mowed hay fields, grazed pastures, glades, or open woods during summer/fall (Rodriguez 2012). The study corridors are located within the known range of the species and contain suitable breeding and foraging habitat. The wild turkey is likely to occur in the study corridors.

D.2.4.30 Yellow Warbler (MIS)

The yellow warbler (*Dendroica petechia*) is an MIS on the Fishlake National Forest. It is found in moist thickets and riparian areas, especially along streams and swampy areas (Rodriguez 2006). The study corridors are located within the known range of the species, and contain suitable breeding and foraging habitat. The yellow warbler is known to occur in the study corridors.

D.2.4.31 Yellow-billed Cuckoo (Federal Candidate; BLM, USFS, and State Sensitive)

Regulatory Status

The western United States Distinct Population Segment of the yellow-billed cuckoo (*Coccyzus americanus*) became a Candidate species for listing as threatened or endangered under the ESA Act of 1973, as amended, on October 30, 2001 (66 *Federal Register* 54807).

Taxonomy and Life History

The yellow-billed cuckoo is one of six species of the family *Cuculidae* that breed in the United States (National Geographic Society 2002). The yellow-billed cuckoo was first described by Linnaeus in 1758 as *Cuculus americanus*, with the western yellow-billed cuckoo being described in 1887 as *Coccyzus americanus occidentalis* by Ridgeway. However, since the late 1800s, debate has centered on whether the species should be split into eastern (*C. a. americanus*) and western (*C. a. occidentalis*) subspecies (FWS 2001). Those in favor of recognizing subspecies cited differences in morphology between eastern and western birds. Review and study of yellow-billed cuckoo taxonomy occurred in response to a petition in 1986 to list the yellow-billed cuckoo as endangered in California, Washington, Oregon, Idaho, and Nevada. In their response to a second petition, the FWS determined there was not enough evidence to consider the western population as a distinct subspecies, but the population did warrant listing as a United States Distinct Population Segment. The range of the western population of yellow-billed cuckoo was determined to be the area west of the crest of the Rocky Mountains (FWS 2001).

Western population of yellow-billed cuckoos breed in dense riparian woodlands, primarily of cottonwood (*Populus fremontii*), willow (*Salix* spp.), and mesquite (*Prosopis* spp.), along riparian corridors in otherwise arid areas (Hughes 1999). Dense undergrowth may be an important factor in selection of nest sites (Ehrlich et al. 1988). Western yellow-billed cuckoos appear to require relatively large tracts of riparian woodland. Several studies have reported western population of yellow-billed cuckoos nesting in tracts greater than 25 acres in size. They may be restricted to areas close to water because of humidity requirements for hatching eggs and rearing chicks (Laymon 1998).

Most western populations of yellow-billed cuckoos arrive on their breeding grounds in June (Laymon 1998). They construct an unkempt stick nest on a horizontal limb, often in shrubby vegetation (Ehrlich et al. 1988; Terres 1980). Nest heights range from 1.3 meters (4.3 feet) to, rarely, 30 meters (98 feet), and average below 6 meters (20 feet) (Laymon 1998).

Yellow-billed cuckoos lay 1 to 5 large eggs, which hatch after 9 to 11 days of incubation (Ehrlich et al. 1988). Nestlings fledge at 5 to 8 days, giving this species the shortest combined incubation/nestling period known for any bird. (Corman and Wise-Gervais 2005; Hughes 1999). They are occasionally brood parasites of other species (Hughes 1999). This behavior may be stimulated by high egg production resulting from abundant food supplies (Ehrlich et al. 1988).

Yellow-billed cuckoos forage primarily by gleaning insects from vegetation, but they also may capture flying insects (Ehrlich et al. 1988; Hughes 1999; Laymon 1998). They specialize in relatively large prey, including caterpillars, katydids, cicadas, grasshoppers, and tree frogs (Laymon 1998; Terres 1980). Their breeding season may be timed to coincide with outbreaks of insect species, particularly tent caterpillars (Ehrlich et al. 1988; Hughes 1999; FWS 2001). They also consume some wild berries and take small lizards and frogs, and occasionally bird eggs and young, as prey (Hughes 1999; Terres 1980).

Distribution and Habitat Requirements

The western population of yellow-billed cuckoo was formerly widespread and locally common in California and Arizona; locally common in New Mexico, Oregon, and Washington; and locally uncommon along drainages in western Colorado, western Wyoming, Idaho, Nevada, and Utah (66 *Federal Register* 38613-38614).

The yellow-billed cuckoo breeds from interior California, southern Idaho, the Dakotas, and southern New Brunswick south to Baja California, southern Arizona, Chihuahua, the Gulf Coast, and the Greater Antilles. The breeding range formerly extended north to western Washington state (AOU 1998).

The western population of yellow-billed cuckoo prefers large stands of mature, dense willows typically associated with riparian corridors for nesting, but also selects a multi-storied canopy and dense shrubby vegetation that provides adequate invertebrate prey and cover for foraging juveniles (Corman and Wise-Gervais 2005). Water is required near the nesting site (Corman and Wise-Gervais 2005; Floyd et al. 2007). Dense vegetation also may be important in maintaining humidity in the nesting area (Corman and Wise-Gervais 2005).

Primary Threats to Survival

The primary threat to western populations of yellow-billed cuckoos is the loss of high quality riparian habitat suitable for nesting (Corman and Wise-Gervais 2005; Floyd et al. 2007). Riparian habitat throughout the western United States has been modified or destroyed by dams, stream channelization, livestock grazing, groundwater pumping, invasive exotic plants (especially saltcedar), and conversion to agriculture and other uses (FWS 2001).

There is widespread evidence that the population of yellow-billed cuckoos in the western United States has declined over the past century, and that their breeding range has contracted. The species may be extirpated from British Columbia, Washington, and Oregon (Hughes 1999).

Currently, the western population of yellow-billed cuckoo is very rare in scattered drainages in western Colorado, Idaho, Nevada, and Utah (NatureServe 2010).

Occurrence in the Project Area

The Project area is within the known range of the species and may contain suitable breeding and foraging habitat. There are no documented occurrences of the cuckoo in the Project area. Project surveys for the species were not performed for this Project.

D.2.5 Mammals

D.2.5.1 Allen’s Big-eared Bat (BLM and State Sensitive)

Allen’s big-eared bat (*Idionycteris phyllotis*) occurs in a wide range of habitats from lowland riparian woodlands and desert shrub to mountain brush and mixed forest at an elevation range of 760 to 2,395 meters (2,500 to 7,860 feet). It typically roosts in dead snags, but also has been observed using mines and caves. Little is known about the winter range of the species, but it appears to move to lower elevations (Oliver 2000). The study corridors are within the known range of the species, but there are no known

occurrences. Suitable breeding habitat is lacking although individuals may forage in the study corridors. The Allen's big-eared bat may occur in the study corridors.

D.2.5.2 Big Free-tailed Bat (BLM and State Sensitive)

The big free-tailed bat (*Nyctinomops macrotis*) is associated with canyon lands and very rocky country. In Utah, it has been found in lowland riparian, desert shrub, and montane forests (Oliver 2000). The species primarily roosts on cliff faces, but occasionally has been found in buildings and caves (Bradley et al. 2006). The study corridors are within the known range of the species, but there are no known occurrences. Suitable breeding habitat is lacking although individuals may forage in the study corridors. The big free-tailed bat may occur in the study corridors.

D.2.5.3 Dark Kangaroo Mouse (BLM and State Sensitive)

The dark kangaroo mouse (*Microdipodops megacephalus*) is restricted to sand dunes, desert shrub, and sagebrush communities with fine, gravelly soils in the West Desert (Bosworth 2003). There are several records of the species in the vicinity of the study corridors near the Black mountains in the Escalante Desert (UNHP 2009). The dark kangaroo mouse likely breeds and forages in the study corridors.

D.2.5.4 Fringed Myotis (BLM and State Sensitive)

The fringed myotis (*Myotis thysanodes*) is a widely distributed, but relatively rare species that is known to occur in central and northeastern Utah (Oliver 2000). The species forages in a variety of habitats, including desert shrub, sagebrush, pinyon–juniper, ponderosa pine, and montane forest and roosts in abandoned buildings, mines, and caves (Oliver 2000). The study corridors are within the known range of the species, but there are no known occurrences. Suitable breeding and roosting habitat is lacking. Foraging fringed myotis may occur in the study corridors.

D.2.5.5 Kit Fox (BLM and State Sensitive)

The kit fox (*Vulpes macrotis*) inhabits arid desert shrub and sagebrush communities in east-central and western Utah (Bosworth 2003). The kit fox has been observed infrequently in the study area over the past 30 years (UNHP 2009). Several dens were located during surveys for the Milford Wind Farm and heritage records exist throughout the Escalante Desert. The study corridors are located within the range of the species in Utah and contain suitable breeding and foraging habitat for the kit fox. The species is known to occur in the study corridors.

D.2.5.6 Mule Deer (MIS)

Mule deer (*Odocoileus hemionus*) is an MIS on both the Fishlake and Dixie National Forests. The species occupies foothill and montane habitats throughout the Project area. The study corridors contain several important seasonal habitats, including crucial winter range, crucial summer range, and crucial year-long range (UDWR 2011b). Crucial winter range is widely distributed throughout the study corridors with the exception of the Escalante Desert and lower elevations between the Black mountains and Antelope Range. Crucial summer range occurs in higher elevations along the I-70 corridor through the Tushar Mountains and in the Bull Valley mountains between Central and Enterprise, Utah. Crucial winter and

summer ranges also have been designated as fawning habitat. Crucial year-long range occurs in the vicinity of the Red Butte Substation. Mule deer are known to breed and forage in the study corridors.

D.2.5.7 Pygmy Rabbit (BLM, USFS, and State Sensitive)

The pygmy rabbit (*Brachylagus idahoensis*) is a Great Basin endemic that is generally restricted to mature sagebrush habitats with deep friable soils. In September 2010 the FWS completed a 12-month finding on a petition to list the species under ESA and determined that it does not warrant protection (75 *Federal Register* 60516). The species is distributed patchily across northern and western Utah (Bosworth 2003), and the study corridors are within the known range of the species. There are several documented occurrences of the pygmy rabbit in the vicinity of the study corridors near Enterprise, Utah (UNHP 2009). Suitable breeding and foraging habitat for the species occurs within the study corridors. The pygmy rabbit may occur in the study corridors.

D.2.5.8 Rocky Mountain Elk (MIS)

The Rocky Mountain elk (*Cervus canadensis*) is an MIS on both the Fishlake and Dixie National Forests. The species is common in mountain meadows and forests during the summer and in foothills and valley grasslands during the winter. The study corridors contain designated crucial elk habitats including crucial winter range, crucial summer range, and crucial year-long range (UDWR 2011b). Crucial elk summer range and calving habitat occur along the I-70 corridor through the Tushar Mountains. Crucial elk winter range is located along the western foothills of the Tushar Mountains generally between Cove Fort and Beaver. Crucial elk year-long range is located west of the I-15 corridor, generally between Cove Fort and Milford. The species is known to breed and forage in the study corridors.

D.2.5.9 Spotted Bat (BLM, USFS, and State Sensitive)

The spotted bat (*Euderma maculatum*) is widely distributed across Utah, but is primarily associated with deep, rocky canyons in eastern and southern portions of the state (Oliver 2000). The species roosts in crevices on cliff walls and forages in open grassland, desert shrub, sagebrush, and mountain meadow communities. The study corridors are within the known range of the species, but there are no known occurrences and suitable breeding and roosting habitat is lacking. Foraging spotted bats may occur in the study corridors.

D.2.5.10 Townsend’s Big-eared Bat (BLM, USFS, and State Sensitive)

The Townsend’s big-eared bat (*Corynorhinus townsendi*) is a relatively common species that roosts in caves and abandoned mines and forages in sagebrush, pinyon-juniper, mountain shrub, and mixed conifer communities throughout Utah (Oliver 2000). The Townsend’s big-eared bat is one of the few bat species known to winter in Utah. Hibernacula are located in the vicinity of the study corridors near Enterprise, Utah. Suitable breeding and roosting habitat is lacking but foraging Townsend’s big-eared bats are likely to occur in the Project area.

D.2.5.11 Utah Prairie Dog (Federally Threatened; State Sensitive)

Regulatory Status

Originally listed as endangered under ESA in 1968, the Utah prairie dog (*Cynomys parvidens)* was delisted in 1970. It was relisted as endangered on June 4, 1973, due to a substantial decline in population from 1970 to 1972 (Pizzimenti and Collier 1975). In 1979, the UDWR petitioned the FWS to remove the Utah prairie dog from the endangered species list. The FWS published a final rule on May 29, 1984 (49 *Federal Register* 22330), to reclassify the Utah prairie dog as threatened with a special rule to allow regulated taking. A recovery plan for the Utah prairie dog was made available on September 9, 1991 (FWS 1991)**.** In 2003, the FWS received a petition to reclassify the Utah prairie dog as endangered. In February 2004, the FWS received a Notice of Intent to Sue for failure to issue a 90-day finding for the petition. Eventually the petitioning party and the FWS reached a settlement agreement to make a 90-day finding on the petition by February 17, 2007. Published in the *Federal Register* on February 21, 2007, the FWS issued a notice of the 90-day petition, finding that the petition failed to provide substantial scientific or commercial information to warrant the reclassification of the species to endangered status (72 *Federal Register* 7843). With this determination, the FWS also initiated a 5-year review of the species to determine whether or not the Utah prairie dog should be removed from the list or otherwise reclassified. In September 2010 the FWS released a revised draft recovery plan for the species (75 *Federal Register* 57055).

In addition to its protected status under the ESA of 1973, the Utah prairie dog is included on the UDWR Sensitive Species List (UDWR 2011b).

Taxonomy and Life History

Originally described by J.A. Allen (1905), the Utah prairie dog is one of five living species of the genus *Cynomys*, all native to North America with nonoverlapping geographic ranges (Hoogland 2003). The genus is divided into two subgenera, members of which have either a black-tipped tail, subgenus *Cynomys*, or a white-tipped tail, subgenus *Leucocrossuromys* (Clark et al. 1971). The *Cynomys* group consists of the Mexican prairie dog (*C. mexicanus*) and black-tailed prairie dog (*C. ludovicianus*), while Gunnison's (*C. gunnisoni*), Utah (*C. parvidens*), and white-tailed prairie dog (*C. leucurus*) compose the *Leucocrossuromys* group.

Grasses are the preferred food of the Utah prairie dog in all seasons, in addition to forb flowers and seeds (especially alfalfa) (Pizzimenti and Collier 1975; FWS 1991). When cicadas are available, they are a preferred animal food item. The majority of weight gain and colony expansion occur when alfalfa or other cool season forage is available, a situation which occurs most frequently in those colonies located at low elevations in agricultural areas (FWS 1991).

As are other prairie dog species, the Utah prairie dog is a colonial, diurnal species. Females are capable of reproducing once a year, with average litter sizes of between three and six young (Pizzimenti and Collier 1975). Pups are born in April and May but don't emerge from their burrows until six weeks after birth (Messmer et al. 1998). Females are in estrus and sexually receptive for a single day during the breeding season, which occurs generally from mid-March through early April (72 *Federal Register* 7843). Being true hibernators, most Utah prairie dog surface activity ceases during harsh winters (72 *Federal Register* 7843).

Distribution and Habitat Requirements

Utah prairie dogs are the westernmost member of the *Cynomys* genus and have the most restricted range of all prairie dog species in the United States, being limited to the southwestern quarter of Utah (FWS 1991). Prior to implementation of control programs, the species' distribution at one time extended across the desert nearly to the Nevada-Utah state line (Pizzimenti and Collier 1975). As of 1991, the Utah prairie dog's principle population concentrations existed in only three areas, the Awapa Plateau, Paunsaugunt region along the East Fork and main stem of the Sevier River, and the West Desert region of eastern Iron County. A few other isolated colonies exist in mountain and desert valleys in western Iron and Beaver counties (Pizzimenti and Collier 1975; Seal 1987).

Historically the Utah prairie dog appears to have inhabited approximately 700 sections in 10 distinct areas in southern Utah (Pizzimenti and Collier 1975). From the 1920s to the 1970s, the Utah prairie dog experienced an estimated 87 percent decline in the number of occupied sections. Although there exist reports of Utah prairie dog as far north as Nephi, Utah, no specimens are on record to substantiate this. Because local residents commonly refer to Uinta ground squirrels (*Spermophilus armatus*) and Townsend's ground squirrel (*S. townsendii*) as prairie dogs, it is likely those reports of *Cynomys* occurrence were based on mistaken species identification. The northernmost verified record is 70 miles to the south of Nephi, from Salina Canyon in Sevier County (Pizzimenti and Collier 1975).

Presumably, northward expansion of the Utah prairie dog is limited by competition with Uinta ground squirrel and/or the presence of dense vegetation. Expansion to the east and south of the present range is limited by physical barriers and a lack of suitable habitat. There is past evidence of occupation through the Escalante Valley as far west as Modena near the Nevada state line (Pizzimenti and Collier 1975).

A denizen of high grass prairie, the Utah prairie dog is found at elevations between 1,500 and 3,000 meters (4,921 and 9,842 feet) (Hoogland 2006). Much of the species water requirement is met through plant ingestion resulting in a positive correlation between the amount of available moisture in vegetation and Utah prairie dog densities. They prefer swale formations where moist herbage is available even during times of drought (FWS 1991).

Soil characteristics are also important in that Utah prairie dogs require well-drained soils for their burrows, and they must be able to burrow deep enough (1 meter) to be protected from predators and insulated from environmental and temperature extremes (FWS 1991).

Colony population densities vary considerably, from less than 2.5 per hectare to more than 74 per hectare (6.25 per acre to more than 185 per acre). Habitat condition is the most likely influence on colony density, as evidenced by the higher densities found in areas with lush, yet not too tall, vegetation (Pizzimenti and Collier 1975).

Primary Threats to Survival

Significant factors in the decline of the Utah prairie dog include deliberate poisoning, disease, and loss of habitat. The federal government sponsored prairie dog poisoning campaigns as early as 1880 to address damage to agriculture and ranching operations. The first report on prairie dog control measures within the historical range of the Utah prairie dog were made in a 1920 Annual Report of the FWS. Prairie dog population reductions have directly corresponded to intensive poisoning programs around 1933, 1950, and 1960. Although the species' population densities have recovered following each of these campaigns, some colonies have been eliminated completely (FWS 1991).

Habitat loss and degradation remains a significant range-wide threat to the Utah prairie dog. The majority of colonies are located on private lands. In 1977, 73 percent of all Utah prairie dog colonies and 81 percent of the animals were located on private lands, much of which was slated for farming or housing development (FWS 1991).

Disease is considered by some to be an important factor in population level declines in this species (Fisher et al. 1969). The FWS recognizes that in specific colonies, and throughout the range of Utah prairie dogs, transmission of the Sylvatic plague bacterium (*Yersinia pestis*) via fleabites has been, and will continue to be, a threat to this species (72 *Federal Register* 7843). In recent years, research into the control of fleas in Utah prairie dog colonies with burrow infusions of Pyraperm has demonstrated that such efforts protect against plague (Hoogland et al. 2004).

Occurrence in the Project Area

Distribution records of the Utah prairie dog since 1983 show occurrences in Beaver, Iron, Millard, Sevier, and Washington counties (Bosworth 2003). The study corridors pass through the West Desert recovery unit defined in the 1991 and draft 2010 recovery plans. Protocol surveys for the Project completed in July and August 2010, identified one active colony surrounded by unoccupied habitat in the study corridors.

D.2.5.12 Western Red Bat (BLM and State Sensitive)

The western red bat (*Lasiurus blossevillii*) is extremely rare in Utah. The western red bat roosts in trees and foliage in low-elevation, riparian cottonwood forests (Oliver 2000). There are no records of the species within or adjacent to the study corridors. Suitable breeding and roosting habitat is lacking, though the species may forage in the study corridors.

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Appendix E – USFS Biological Specialist Report

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT

USFS BIOLOGICAL SPECIALIST REPORT

Prepared for:
Dixie National Forest
Fishlake National Forest

Prepared by:
Environmental Planning Group, Inc.
Salt Lake City, Utah

September 2012

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List of Acronyms and Abbreviations

BCI	Biotic Condition Index
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
EIS	Environmental Impact statement
EPG	Environmental Planning Group
FWS	U.S. Fish and Wildlife Service
HUC	Hydrologic unit code
kV	Kilovolt
LRMP	Land and Resource Management Plan
MIS	Management Indicator Species
OMRD	Open Motorized Road Density
Project	Sigurd to Red Butte No. 2 – 345kV Transmission Project
UDWR	Utah Division of Wildlife Resources
USDA	United States Department of Agriculture
USFS	U.S. Forest Service

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1.0 USFS Management Requirements for Sensitive and Management Indicator Species

U.S. Forest Service (USFS) regulations require site-specific analysis of the effects of actions considered by the USFS on species identified as sensitive by the Regional Forester and species identified as Management Indicator Species (MIS) in individual Forest Land and Resource Management Plans (LRMPs), as amended. This analysis was conducted for the Sigurd to Red Butte No. 2 – 345-kilovolt (kV) Transmission Project (Project) and meets USFS regulations, policies, and objectives for sensitive species and MIS management. Additionally, requirements for consideration of migratory birds in USFS planning and project documents in accordance with the USFS 2007 state-wide strategy are addressed.

1.1 Sensitive Species (Forest Service Manual 2670)

The USFS Manual 2670 – Threatened, Endangered and Sensitive Plants and Animals, establishes the following management direction and objectives for USFS sensitive species:

- Maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands.
- Review programs and activities as part of the National Environmental Policy Act of 1969 process, through a biological evaluation, to determine their potential effect on sensitive species.
- Analyze, if impacts cannot be avoided, the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.

1.2 Management Indicator Species (Forest Service Manual 2620)

Species selected as MIS are used to monitor a particular habitat type. This is accomplished by assessing the habitat conditions and population changes of the MIS that occupy each habitat as required in the National Forest Management Act of 1976 implementing regulations at the time the LRMPs were developed, found at 36 Code of Federal Regulations (CFR) 219.19 (published at 36 CFR parts 200 to 299, July 1, 2000 edition). The USFS uses MIS presence/absence to analyze impacts on habitat types within an environmental impact statement (EIS).

1.3 Migratory Birds

On August 1, 2007, the National Forests in Utah formalized an updated statewide strategy for addressing migratory birds in USFS planning and Project documents (USFS 2007). For this analysis, species selected were chosen based on the process identified in the statewide strategy; bird species were derived from a compilation of species included in the Utah Partners in Flight Conservation Strategy (Parrish et al. 2002), the Utah Comprehensive Wildlife

Conservation Strategy (Gorrell et al. 2005), and the Fish and Wildlife Service Birds of Conservation Concern bird lists (U.S. Fish and Wildlife Service [FWS] 2008). Birds included in these publications include those at higher risk due to habitat loss or degradation, with highest-risk species given priority status in the Utah Partners in Flight Conservation Strategy listing (Parrish et al. 2002).

The black-throated gray warbler, burrowing owl, and ferruginous hawk were selected as representative species to analyze the effects of transmission line impacts on potentially suitable habitats. Additional migratory bird species were not selected because effects on all other habitat types were analyzed for other species in this analysis. In February 2012, the FWS was informed of the selection of these migratory bird species for this document (USFS 2012).

2.0 Affected Environment

MIS and sensitive species lists were obtained from the applicable LRMPs, as amended (USFS 1986a; 1986b), and USFS Region four sensitive species lists (USFS 2011). Natural history, status, and trend information were obtained from *Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of the Fishlake National Forest* (Rodriguez 2006) and *Life History and Analysis of Endangered, Threatened, Candidate, Sensitive, and Management Indicator Species of the Dixie National Forest* (Rodriguez 2012), unless another citation is otherwise specified. Existing conditions on the Forests described in these documents provided the basis for the analyses of potential effects of the Project on these species and their habitats presented in this Appendix.

Table 1 identifies federally listed (threatened and endangered) and candidate, MIS, USFS sensitive, and migratory bird species that may be present in the Project area (refer to Map 1-2) and will be analyzed in this document. Table 2 identifies species that do not occur or for which suitable habitat does not occur in the Project area; therefore, no impacts would occur on these species and further analysis is not required.

TABLE 1
SPECIAL STATUS SPECIES BROUGHT FORWARD FOR ANALYSIS OF IMPACTS[1]

Common Name	Scientific Name	Status[2]	Likelihood of Occurrence in Study Corridor[3]
Plants			
Elsinore buckwheat	*Eriogonum batemanii var. ostlundii*	USFS	Known to occur
Pinyon penstemon	*Penstemon pinorum*	USFS	Known to occur
Sevier townsendia	*Townsendia jonesii var. lutea*	USFS	Known to occur
Ward's beardtongue	*Penstemon wardii*	USFS	Known to occur
Macroinvertebrates and Fish			
Macroinvertebrates		MIS (FL)	Known to occur
Bonneville cutthroat trout	*Oncorhynchus clarkii utah*	USFS, MIS (DX, FL)	Known to occur
Brown trout	*Salmo trutta*	MIS (DX, FL)	Known to occur
Cutthroat trout	*Oncorhynchus clarki*	MIS (DX, FL)	Known to occur
Rainbow trout	*Oncorhynchus mykiss*	MIS (DX, FL)	Known to occur
Southern leatherside chub	*Lepidomeda aliciae*	USFS, MIS (DX)	Likely to occur
Virgin spinedace	*Lepidomeda mollispinis*	MIS (DX)	Known to occur

TABLE 1
SPECIAL STATUS SPECIES BROUGHT FORWARD FOR ANALYSIS OF IMPACTS[1]

Common Name	Scientific Name	Status[2]	Likelihood of Occurrence in Study Corridor[3]
Birds			
Bald eagle	*Haliaeetus leucocephalus*	USFS	No known nests; known to forage and winter roost
Burrowing owl	*Athene cunicularia hypugea*	MB	May breed and forage
Brewer's sparrow	*Spizella breweri*	MIS (FL)	Likely to breed and forage
Black-throated grey warbler	*Dendroica nigrescens*	MB	Likely to breed and forage
California condor	*Gymnogyps californianus*	FWS E[4], FWS X	No known nesting or roosting; foraging may occur
Ferruginous hawk	*Buteo regalis*	MB	Likely to breed and forage
Greater sage-grouse	*Centrocercus urophasianus*	FWS C, USFS	Not likely to occur; no known occupied habitat; potential sagebrush habitat present
Hairy woodpecker	*Picoides villosus*	MIS (FL)	Likely to breed and forage
Lincoln's sparrow	*Melospiza lincolnii*	MIS (FL)	Likely to breed and forage
MacGillivray's warbler	*Oporornis tolmiei*	MIS (FL)	Likely to breed and forage
Mountain bluebird	*Sialia currucoides*	MIS (FL)	Likely to breed and forage
Northern flicker	*Colaptes auratus*	MIS (DX)	Likely to breed and forage
Northern goshawk	*Accipiter gentilis*	USFS, MIS (DX, FL)	No nesting habitat; foraging may occur
Peregrine falcon	*Falco peregrinus anatum*	USFS	Known to breed and forage
Sage thrasher	*Oreoscoptes montanus*	MIS (FL)	Likely to breed and forage
Song sparrow	*Melospiza melodia*	MIS (FL)	Likely to breed and forage
Vesper sparrow	*Pooecetes gramineus*	MIS (FL)	Likely to breed and forage
Western bluebird	*Sialia mexicana*	MIS (FL)	Likely to breed and forage
Wild turkey	*Meleagris gallopavo*	MIS (DX)	Likely to breed and forage
Yellow warbler	*Dendroica petechia*	MIS (FL)	Known to breed and forage
Mammals			
Mule deer	*Odocoileus hemionus*	MIS (DX, FL)	Known to breed and forage
Pygmy rabbit	*Brachylagus idahoensis*	USFS	May breed and forage
Rocky Mountain elk	*Cervus canadensis*	MIS (DX, FL)	Known to breed and forage
Spotted bat	*Euderma maculatum*	USFS	Likely to breed and forage
Townsend's big-eared bat	*Corynorhinus townsendii*	USFS	Likely to breed and forage

NOTES:
[1]Compiled from species lists obtained from the U.S. Fish and Wildlife Service (FWS) (county level), Intermountain Regional Forester's Sensitive Species list (U.S. Forest Service [USFS] 2011), the Dixie and Fishlake National Forest Land and Resource Management Plans (USFS 1986a; 1986b), and Migratory Bird lists cited in 1.3.
[2]Status abbreviations are as follows:
DX= Dixie National Forest
FL= Fishlake National Forest
FWS C = Federal candidate
FWS E = Federal endangered
FWS X = Federal nonessential/experimental
MB = Migratory birds selected for analysis as described in 1.3.
MIS = Species designated as management indicator species in Dixie or Fishlake National Forests Land and Resource Management Plans (USFS 1986a; 1986b)
USFS = Species designated as sensitive by the USFS Intermountain Region
[3]Probability of occurrence in the study corridor based on species breeding and foraging habitat requirements, current known range and distribution, and documented occurrence. May occur indicates suitable habitat is present in the study corridor, but current distribution and documented occurrences indicate occupancy of the study corridor is unlikely. Likely to occur indicates suitable habitat is present in the study corridor, and current distribution and documented occurrences indicate occupancy of the study corridor is probable.
[4]Considered endangered west of Interstate 15 and north of Interstate 70 (61 *Federal Register* 54043-54060).

TABLE 2 SPECIAL STATUS SPECIES NOT CONSIDERED IN THIS ANALYSIS[1]			
Common Name	**Scientific Name**	**Status[2]**	**Rationale for Elimination from Analysis**
Plants			
Angell cinquefoil	*Potentilla angelliae*	USFS	Suitable habitat does not occur
Aquarius paintbrush	*Castilleja aquariensis*	USFS	Suitable habitat does not occur
Arizona willow	*Salix arizonica*	USFS	Suitable habitat does not occur
Barneby woody aster	*Aster kingii var. barnebyana*	USFS	Suitable habitat does not occur
Beaver Mountain groundsel	*Senecio castoreus*	USFS	Suitable habitat does not occur
Bicknell milkvetch	*Astragalus consobrinus*	USFS	Suitable habitat does not occur
Bicknell thelesperma	*Thelesperma subnuda var. alpina*	USFS	Suitable habitat does not occur
Cedar Breaks biscuitroot	*Cymopterus minimus*	USFS	Suitable habitat does not occur
Creeping draba	*Draba sobolifera*	USFS	Suitable habitat does not occur
Dana milkvetch	*Astragalus henrimontanensis*	USFS	Suitable habitat does not occur
Dwarf bear-poppy	*Arctomecon humilis*	FWS E	Suitable habitat does not occur
Fish Lake naiad	*Najas caespitosa*	USFS	Suitable habitat does not occur
Guard milkvetch	*Astragalus zionis vigulus*	USFS	Suitable habitat does not occur
Heliotrope milkvetch	*Astragalus montii*	FWS T	Suitable habitat does not occur
Holmgren milkvetch	*Astragalus holmgreniorum*	FWS E	Suitable habitat does not occur
Jones goldenaster	*Heterotheca jonesii*	USFS	Suitable habitat does not occur
Last chance townsendia	*Townsendia aprica*	FWS T	Suitable habitat does not occur
Little penstemon	*Penstemon parvus*	USFS	Suitable habitat does not occur
Maguire campion	*Silene petersonii*	USFS	Suitable habitat does not occur
Maguire daisy	*Erigeron maguirei*	USFS	Suitable habitat does not occur
Mt. Belknap draba	*Draba ramulosa*	USFS	Suitable habitat does not occur
Navajo Lake milkvetch	*Astragalus limnocharis var. limnocharis*	USFS	Suitable habitat does not occur
Neeses' peppergrass	*Lepedium montanum var. neeseae*	USFS	Suitable habitat does not occur
Nevada willowherb	*Epilobium nevadense*	USFS	Suitable habitat does not occur
Paradox moonwort	*Botrychium paradoxum*	USFS	Suitable habitat does not occur
Paria breadroot	*Pediomelum pariense*	USFS	Suitable habitat does not occur
Pine Valley goldenweed	*Haplopappus crispus*	USFS	Suitable habitat does not occur
Pinnate spring-parsley	*Cymopterus beckii*	USFS	Suitable habitat does not occur
Podunk groundsel	*Senecio malmstenii*	USFS	Suitable habitat does not occur
Red Canyon beardtongue	*Penstemon bracteatus*	USFS	Suitable habitat does not occur
Reveal paintbrush	*Castilleja parvula var. revealii*	USFS	Suitable habitat does not occur
Rock-tansy	*Sphaeromeria capitata*	USFS	Suitable habitat does not occur
Ryberg's milkvetch	*Astragalus perianus*	MIS	Suitable habitat does not occur
San Rafael Cactus	*Pediocactus sileri*	FWS E	Suitable habitat does not occur
Shivwitz milkvetch	*Astragalus ampullarioides*	FWS E	Suitable habitat does not occur
Siler pincushion cactus	*Pediocactus sileri*	FWS T	Suitable habitat does not occur
Table Cliff milkvetch	*Astragalus limnocharis var. tabulaeus*	USFS	Suitable habitat does not occur
Tushar paintbrush	*Castilleja parvula var. parvula*	USFS	Suitable habitat does not occur
Widtsoe buckwheat	*Eriogonum aretioides*	USFS	Suitable habitat does not occur
Wonderland Alice flower	*Gilia caespitosa*	USFS	Suitable habitat does not occur
Wright fishhook cactus	*Sclerocactus wrightiae*	FWS E	Suitable habitat does not occur
Yellow-white catseye	*Cryptantha ochroleuca*	USFS	Suitable habitat does not occur
Zion jamesia	*Jamesia americana var. zionis*	USFS	Suitable habitat does not occur

TABLE 2 SPECIAL STATUS SPECIES NOT CONSIDERED IN THIS ANALYSIS[1]			
Common Name	**Scientific Name**	**Status[2]**	**Rationale for Elimination from Analysis**
Fish			
Bonytail	*Gila elegans*	FWS E	Do not occur. No effects are expected within occupied or designated critical habitat for any listed fish species. Impacts would be restricted to watersheds affected by the Project. No Project-related water withdrawals are planned in the Colorado River Basin.
Brook trout	*Salvelinus fontinalis*	MIS (DX, FL)	
Colorado pikeminnow	*Ptychocheilus lucius*	FWS E	
Colorado River cutthroat trout	*Oncorhynchus clarki pleuriticus*	USFS, MIS (DX, FL)	
Humpback chub	*Gila cypha*	FWS E	
Lake trout	*Salvelinus namaycush*	MIS (FL)	
Razorback sucker	*Xyrauchen texanus*	FWS E	
Virgin River chub	*Gila robusta seminuda*	FWS E	
Woundfin	*Plagopterus argentissimus*	FWS E	
Birds			
Mexican spotted owl	*Strix occidentalis lucida*	FWS T	Suitable canyon nesting and forested foraging habitat do not exist within the study corridor.
Three-toed woodpecker	*Picoides dorsalis*	USFS	Potential high-elevation nesting and foraging habitat does not exist within the study corridor
Southwestern willow flycatcher	*Empidonax traillii extimus*	FWS E	No suitable breeding or foraging habitat (EPG 2011b)
Flammulated owl	*Otus flammeolus*	USFS	Suitable mature forest habitat does not exist within the study corridor.
Western yellow-billed cuckoo	*Coccyzus americanus*	FWS C, USFS	Suitable riparian habitats of cottonwood and willow galleries do not exist within the study corridor.
Mammals			
Bighorn sheep includes Rocky Mountain, California, and desert bighorn sheep	*O. canadensis canadensis, O.c. californiana, O.c. nelsoni*	USFS	Suitable rugged terrain does exist within the study corridor; however, there are no known occurrences. No introductions are planned.
Utah prairie dog	*Cynomys parvidens*	FWS T	Suitable habitat of grasslands and shrub-steppe does not exist within the study corridor. No known occurrences
Amphibians			
Western toad	*Bufo boreas*	USFS	No suitable habitat above 8,000 feet in elevation exists within the study corridor (Thomson et al. 2004).

NOTES:
[1]Compiled from species lists obtained from the U.S. Fish and Wildlife Service (FWS) (county level), Intermountain Regional Forester's Sensitive Species list (U.S. Forest Service [USFS] 2011), and the Dixie and Fishlake National Forest Land and Resource Management Plans (USFS 1986a; 1986b).
[2]Status abbreviations are as follows:
FWS C = Federal candidate
FWS E = Federal endangered
FWS T = Federal threatened
MIS = Species designated as management indicator species in Dixie or Fishlake National Forests LRMPs, as amended (USFS 1986a; 1986b).
USFS = Species designated as sensitive by the USFS Intermountain Region

2.1 Existing Condition of Affected Habitats

2.1.1 Alternatives N1 through N6 (Fishlake National Forest)

All northern alternative routes use the same links as they cross the Fishlake National Forest; therefore, impacts would be the same for all terrestrial habitats crossed by these alternatives. Habitats within the 2-mile-wide study corridor along the Project centerline have been heavily modified by anthropogenic and natural events. The corridor for all northern alternative routes parallels existing linear facilities including a 230kV transmission line and Interstate 70 for the majority of the route. In addition to these linear facilities, habitats on the Forest adjacent to the Sevier River Valley have been affected by nearby agricultural and residential development. Livestock grazing and frequent off-highway-vehicle and recreational use occur on USFS-administered lands in this area. Further west along Interstate 70, habitats within the corridor on the Fishlake National Forest have been affected by frequent off-highway-vehicle use, developments of campgrounds, parks, and other recreational sites, livestock grazing, and range improvement activities including pinyon juniper removal, and geothermal energy development activities. The 2010 Twitchell Canyon Fire occurred adjacent to and in areas crossed by the northern alternative routes.

These events have fragmented, modified, and reduced the quality of habitats present within the study corridor for the northern alternative routes. Native vegetation has been cleared and non-native invasive plants have become established in many areas of disturbance. The development of parks and campground facilities along with trail and road construction has resulted in increased levels of human activity, and significant barriers to terrestrial wildlife movement (e.g., Interstate 70) have been constructed.

The functionality of terrestrial habitats affected by the Twitchell Canyon Fire and areas where range treatments have altered or removed native vegetation provide reduced habitat value to many wildlife species in some locations. The Twitchell Canyon Fire also has reduced vegetative cover and significantly increased the potential for sedimentation in some streams that support sensitive and MIS fish. However, sections of Shingle Creek to upper Clear Creek, with connectivity to surrounding waterways, still maintain some high-quality habitat for aquatic species. Approved MIS and sensitive fish species recovery projects have been initiated and reintroductions are likely to occur within the next 2 years (Hadley et al. 2011a).

2.1.2 Alternatives S3 and S6 Ox Valley Routes (Dixie National Forest)

Alternatives S3 and S6 share the same corridor as they cross the Dixie National Forest. Habitats within this corridor have been modified to a limited extent by anthropogenic activities, but remain predominately unaltered and provide unimpaired habitat for wildlife.

Habitats crossed by these routes on the Dixie National Forest south of the community of Enterprise have been affected by livestock grazing and range improvement activities, including pinyon juniper removal. In the vicinity of Ox Valley, habitats have been affected by agricultural development. West of the existing Red Butte Substation, habitats have been affected by other linear developments including the Intermountain Power Plant transmission line and the UNEV and Kern River pipelines.

2.1.3 Alternatives S1 and S5 Pinto Creek Routes (Dixie National Forest)

Alternatives S1 and S5 cross the Dixie National Forest in the same corridor. Habitats (including aspen habitats) within this corridor have been affected to a limited extent by anthropogenic activities, but remain predominately unaltered and provide unimpaired habitat for wildlife.

Habitats within this corridor on the Dixie National Forest north of the community of Pinto have been affected by livestock grazing and agricultural development along Pinto Creek. Habitats in the vicinity of Pinto have been affected by range improvement activities including pinyon juniper removal by agricultural and residential development.

Habitats within the corridor between Pinto and Pine Valley have been affected by livestock grazing and range improvement activities, including pinyon juniper removal. South of Pine Valley, habitats within and adjacent to the study corridor have been affected by livestock grazing and range improvements including pinyon juniper removal, residential development, and road development.

2.1.4 Alternatives S2, S4, S7, and S7-A (Dixie National Forest)

Alternatives S2, S4, S7, and S7-A share similar corridors where they cross the Dixie National Forest. Habitats within these corridors have been heavily modified and fragmented as a result of anthropogenic activities. Alternatives S2, S4, S7, and S7-A parallel existing linear facilities, including the Intermountain Power Project and Sigurd to Red Butte No. 1 transmission lines and the UNEV and Kern River pipelines. Native vegetation has been removed in the rights-of-way for these linear facilities and non-native, invasive plants have been introduced. State Highway 18 and high densities of local roads, as well as residential and agricultural development on lands adjacent to the corridor segments shared by these alternatives, have affected habitat quality within the southern portion of these routes. These habitats also have been affected by livestock grazing and range improvement activities including pinyon juniper removal.

2.2 Existing Condition of Affected Species

2.2.1 Sensitive Plant Species

2.2.1.1 Elsinore Buckwheat (*Eriogonum batemanii* var. *Ostlundii*)

Elsinore buckwheat is a long-lived perennial known to occur in Sevier and Piute counties, primarily on steep slopes composed of loose gravels and rocks derived from volcanic materials, in shadscale, mixed desert shrub, sagebrush, juniper, and ponderosa pine communities (Clark 2005). Populations of Elsinore buckwheat have been located on USFS, Bureau of Land Management (BLM), state, and private lands.

Surveys for Elsinore buckwheat were conducted on the Fishlake National Forest and BLM-administered lands in Utah during 2005, including revisits to 31 previously known sites. Approximately 12,898 plants were located including plants found on at least eight sites on the Fishlake National Forest (Clark 2005).

Clark documented disturbance at many sites supporting Elsinore Buckwheat, including all-terrain-vehicle play areas, trails, roads or road shoulders, powerlines, garbage piles, livestock grazing, and exotic weed encroachment. Conclusions regarding population trends based on the 2005 survey results were not possible because past surveys did not include estimates of population size for each previously document population (Clark 2005). Clark noted that given the number of plants counted in 2005 and in consideration of the thousands of acres of additional unsurveyed habitat that exists, there are most likely thousands of unrecorded plants (Clark 2005).

Preliminary surveys for Elsinore buckwheat conducted in 2011 on the Fishlake National Forest within 175 feet of the reference centerline for the northern alternative routes detected approximately 16,200 individual plants (Environmental Planning Group [EPG] 2011a). Some of these plants are nearby or coincident to some degree with populations mapped by Clark in 2005. However, large, previously unknown populations of Elsinore buckwheat were located during the 2011 surveys. Results of these surveys are consistent with Clark's (2005) observation that unrecorded populations of Elsinore buckwheat are likely to exist.

2.2.1.2 Pinyon Penstemon (*Penstemon pinorum*)

Pinyon penstemon is known to occur in Iron and Washington counties of southwest Utah and is ranked "critically imperiled" but stable in Utah (NatureServe 2012). All populations that have been found in the Pine Valley Ranger District on the Dixie National Forest were found at elevations between 5,620 and 6,700 feet on gravelly soils and volcanic rubble of foothills north of the Pine Valley Mountains. The species is primarily associated with the presence of pinyon pine and with mountain shrub, juniper, and open areas.

Comprehensive range-wide surveys for pinyon penstemon have not been conducted and population estimates are not available. Though locally abundant, populations of pinyon penstemon are known from a total area of less than 485 hectares. One of the three known populations has sustained habitat loss and degradation resulting from firewood removal and mining exploration.

Preliminary surveys for pinyon penstemon conducted in 2011 on the Dixie National Forest within 175 feet of the reference centerline did not detect the plant; however, potentially suitable habitat was identified on USFS-administered lands along Alternative S4 (EPG 2011a). Surveys for sensitive plants, including the pinyon penstemon would be performed along the selected route prior to Project construction to identify specific locations where measures would be applied to reduce impacts on this sensitive plant species.

2.2.1.3 Sevier Townsendia (*Townsendia jonesii* var. *lutea*)

Populations of Sevier townsendia are known from areas of Arapien Shale and clays in volcanic rubble in Juab, Sevier, Sanpete, and Piute counties of Utah. Typical Sevier townsendia habitat includes salt desert shrub and juniper communities located in the middle Sevier River Valley.

Comprehensive range-wide surveys have not been conducted for Sevier townsendia and population estimates are not available. There are known occurrences of Sevier townsendia on the Fillmore and Richfield Ranger Districts of the Fishlake National Forest, but these occurrences account for few individual plants. The species is ranked by the NatureServe

database as “imperiled” in Utah (NatureServe 2012). Primary threats to Sevier townsendia include off-road-vehicle use, the mining of Arapien Shale for gypsum, as well as oil and gas exploration activities in the Sevier River Valley (NatureServe 2012).

Preliminary surveys within 175 feet of the alternative routes conducted in 2011 on the Fishlake National Forest did not detect any Sevier townsendia individuals or suitable habitat. However, known populations of Sevier townsendia exist in the 2-mile-wide study corridor for the northern alternative routes on the Fishlake National Forest and the species could be located during pre-construction surveys. The species does not occur on the Dixie National Forest.

2.2.1.4 Ward’s Beardtongue (*Penstemon wardii*)

Ward’s beardtongue is found in Millard, Sanpete, and Sevier counties. The plant grows on substrates derived from the Green River, Flagstaff limestone, Sevier River volcanic, and Arapien Shale formations (Groebner 2005) in ephedra, rabbitbush, shadscale, mountain mahogany, sagebrush, and pinyon-juniper communities. Populations of Ward’s beardtongue have been located on USFS, BLM, state, and private lands (Groebner 2005).

Surveys for Ward’s beardtongue were conducted on the Fishlake National Forest in 1989 and 2005 (Groebner 2005). Surveys in 2005 included revisits to 29 previously known sites on the Forest (Groebner 2005). Live plants were found at 23 of the 29 sites in 2005. Surveyors documented an increase in the number of individual plants at 10 sites, a decrease in the number of individual plants at 13 sites, and 6 sites did not have previous information on the number of plants present (Groebner 2005). A total of approximately 2,300 plants were located in 2005 and investigators concluded that populations of Ward’s beardtongue were stable or declining due to drought, encroachment of exotic weeds, cheatgrass (*Bromus tectorum*), crested wheatgrass (*Agropyron cristatum*), and/or potential for erosion (Groebner 2005).

Preliminary surveys for Ward’s beardtongue along the alternative routes in 2011 on the Fishlake National Forest detected approximately 850 Ward’s beardtongue plants within 175 feet of the reference centerline of the northern alternative routes. These plants are nearby or coincident with populations mapped by Groebner in 2005, though 2011 surveys identified more individual plants than surveys in 2005. Results of 2011 surveys could indicate that the number of individual Ward’s beardtongue plants and quantity of occupied habitat has increased since 2005, existing mapping of populations is not comprehensive, or both.

2.2.2 Wildlife

2.2.2.1 Elk (*Cervus canadensis*)

Utah Division of Wildlife Resources (UDWR) has designated seasonal and crucial elk habitat throughout the state; however, crucial habitat is not mapped within the study corridor. On the Fishlake National Forest, the Project crosses approximately 17.3 miles of UDWR seasonal habitat. An additional 10 miles (Alternatives N1 to N3) or 11 miles (Alternatives N4 to N6) are crossed as the Project continues onto BLM land. A limited number of elk are managed on the portion of the Dixie National Forest crossed by the Project. Seasonal elk habitat has not been mapped by the UDWR in this area, but elk typically are found east of Highway 18. Suitable elk habitat within the study corridor on the Dixie National Forest includes aspen, big sagebrush,

desert shrub, grassland, invasive, mountain shrub, pinyon-juniper, riparian, and shrub-steppe habitats.

2.2.2.2 Mule Deer (*Odocoileus hemionus*)

The Project crosses crucial mule deer habitat on the Dixie National Forest, and UDWR seasonal habitat on both the Dixie and Fishlake National Forests (Table 3). Mule deer occur throughout the study corridor.

TABLE 3
SUMMARY OF ESTIMATED LINEAR DISTANCE OF MULE DEER HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (miles)	Dixie National Forest Alternative Routes (miles)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Crucial habitat[1]	15.0	9.2	5.3	7.8	8.4	7.3	6.8
Winter substantial habitat[1]	0.0	8.0	3.1	4.6	4.3	3.2	3.2
Summer substantial habitat[1]	8.2	3.2	0.9	1.5	1.9	2.0	2.0
Year-long substantial habitat	0.0	0.3	0.7	6.1	0.7	0.7	0.7
Winter substantial Project-wide	0.0	13.2 or 19.4	7.4	9.6 or 18.8	7.9	7.4	7.4

NOTE: [1]Determined by Utah Division of Wildlife Resources wildlife biologists; habitat data last updated in August 2007.

2.2.2.3 Northern Goshawk (*Accipiter gentilis*)

Suitable forested habitat for nesting does not exist; however, goshawks may forage throughout the study corridor. The nearest known nests are 4.5 miles from any alternative route.

2.2.2.4 Wild Turkey (*Meleagris gallopavo*)

Potentially suitable turkey habitat is very limited within the study corridor and includes grassland, aspen, and mountain shrub habitats.

2.2.2.5 Sage Nesters: Brewer's Sparrow (*Spizella breweri*), Vesper Sparrow (*Pooecetes gramineus*), Sage Thrasher (*Oreoscoptes montanus*)

Potentially suitable habitats for sage-nesting birds include grassland and big sagebrush, which occur throughout the study corridor.

2.2.2.6 Cavity Nesters: Northern Flicker (*Colaptes auratus*), Hairy Woodpecker (*Picoides villosus*), Western Bluebird (*Sialia mexicana)*, Mountain Bluebird (*Sialia currucoides*)

Potentially suitable nesting and foraging habitats for cavity nesting birds occur throughout the study corridor and include grassland, mountain shrub, pinyon-juniper, aspen, and riparian habitats.

2.2.2.7 Riparian Nesters: Lincoln's Sparrow (*Melospiza lincolnii)*, Song Sparrow (*Melospiza melodia)*, Yellow Warbler (*Dendroica petechia)*, MacGillivray's Warbler (*Oporornis tolmiei)*

Potentially suitable riparian habitats are very limited within the project area, but occur throughout the study corridor.

2.2.2.8 Pygmy Rabbit (*Brachylagus idahoensis*)

Potentially suitable habitat in the study corridor consists of big sagebrush. While this habitat type is found throughout the study corridor, pygmy rabbits have not been located in the study corridor (EPG 2012b)

2.2.2.9 Spotted Bat (*Euderma maculatum*) and Townsend's Big-eared Bat (*Corynorhinus townsendii*)

Potentially suitable breeding and roosting crevice and cliff habitat occurs throughout the study corridor on the Fishlake National Forest, but is limited within the corridor on the Dixie National Forest. Crevice and cliff habitat would not be affected by project activities. Foraging may occur in any of the vegetation communities in the project area.

2.2.2.10 Bald Eagle (*Haliaeetus leucocephalus*)

No known nest sites have been identified within the study corridor. Potential winter roost sites and suitable foraging habitat exists thought the study corridor.

2.2.2.11 California Condor (*Gymnogyps californianus*)

Known nesting and roosting sites do not occur within the study corridor. Potentially suitable foraging habitat within the study corridor primarily consists of agriculture, barren, grassland, and invasive habitats where carrion is available. The California condor is not likely to occur in the northern alternative routes in the Fishlake National Forest. Condors have been observed on the Dixie National Forest.

2.2.2.12 Greater Sage-grouse (*Centrocercus urophasianus*)

No known leks occur within the study corridor on the Fishlake and Dixie National Forests; although historic observations have been made there are no current records of sage-grouse in the 2-mile-wide corridor along the Project centerline on USFS-administered lands. No UDWR-designated sage-grouse occupied, crucial brood-rearing, or crucial winter habitat occurs on USFS-administered lands within 4 miles of the Project centerline. Sagebrush that may provide suitable sage-grouse habitat occurs throughout the study corridor on USFS-administered lands.

2.2.2.13 Peregrine Falcon (*Falco peregrinus anatum*)

Suitable cliff nesting habitat occurs in small patches interspersed throughout the study corridor on the Fishlake National Forest. Raptor nests surveys conducted in 2012 located one peregrine falcon nest within 1 mile of the 2-mile-wide study corridor near Castle Rock campground in Fremont Indian State Park (EPG 2012a). Suitable foraging habitat within the study corridor consists of grassland and riparian habitats, and is limited.

2.2.2.14 Burrowing Owl (*Athene cunicularia hypugea*)

No known occurrences are recorded for either Fishlake or Dixie National Forests, but the burrowing owl is known to breed and forage on private and BLM-administered lands throughout the 2-mile-wide study corridor, especially in Millard, Beaver, and Iron counties. Potentially suitable habitat within the study corridor consists of grassland, sagebrush, and desert shrub habitats.

2.2.2.15 Black-throated Gray Warbler (*Dendroica nigrescens*)

This warbler is likely to breed and forage in pinyon-juniper and mountain shrub habitat within the study corridor.

2.2.2.16 Ferruginous Hawk (*Buteo regalis*)

This hawk is likely to breed and forage in grassland, desert shrub, sagebrush, and pinyon-juniper habitats throughout the study corridor.

2.2.3 Fish and Aquatic Invertebrates

2.2.3.1 Bonneville Cutthroat Trout (*Oncorhynchus clarkii Utah*)

On the Fishlake National Forest, reintroduction of the Bonneville cutthroat trout has been approved for the Clear Creek drainages (i.e., Shingle, Fish, and Mill creeks). The potential Bonneville cutthroat trout habitats have been degraded by sedimentation resulting from runoff from the 2010 Twitchell Canyon Fire.

Bonneville cutthroat trout do not occur within the hydrologic unit code[1] (HUCs) areas impacted by any of the southern alternative routes that cross the Dixie National Forest.

2.2.3.2 Brown Trout (*Salmo trutta*)

On the Fishlake National Forest, brown trout are resident in the Clear Creek drainage in Sevier County. Brown trout are known to in the Santa Clara River on the Dixie National Forest. Most brown trout populations on the Dixie National Forest are resident and self-sustaining.

2.2.3.3 Cutthroat Trout (*Oncorhynchus clarkii*)

On the Fishlake National Forest, cutthroat trout are resident in the Clear Creek drainage in Sevier County. Cutthroat trout do not occur within the HUCs impacted by any of the southern alternative routes that cross the Dixie National Forest.

2.2.3.4 Rainbow Trout (*Oncorhynchus mykiss*)

On the Fishlake National Forest, rainbow trout are resident in the Clear Creek drainage in Sevier County. Rainbow trout are known to occur in Pinto Creek on the Dixie National Forest.

2.2.3.5 Southern Leatherside Chub (*Lepidomeda aliciae*)

Southern leatherside chub occur in lower Clear Creek up to a diversion below the Fishlake National Forest. Planned reintroductions of southern leatherside chub, in the mainstream of Clear Creek, are likely to occur within the next 2 years (USFS 2010). The southern leatherside chub habitats have been degraded by sedimentation resulting from runoff from the Twitchell Canyon Fire runoff. Southern leatherside chub does not occur on the Pine Valley Ranger District of the Dixie National Forest.

2.2.3.6 Virgin Spinedace (*Lepidomeda mollispinis*)

Virgin spinedace occur in Moody Wash on the Dixie National Forest.

2.2.3.7 Macroinvertebrates

Caddis fly, mayflies, odonates, chironomids, and other aquatic invertebrates are known to occur in the aquatic habitats in the study corridor.

[1] Hydrologic Unit Code (HUC) areas are regions delineated by drainage areas starting at the mouth of water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow, or watershed areas. They are crossed by the alternative routes within National Forest boundaries (U.S. Geological Survey 2012).

3.0 Environmental Consequences

3.1 Methodology

3.1.1 Project Area

The project consists of the transmission-line right-of-way (reference centerline of a 2-mile-wide study corridor), modeled access roads, and associated sites including structure work sites, wire-splicing sites, wire-pulling sites, wire-tensioning sites, multi-use construction yards, staging sites, helicopter refueling sites, guard structures, shooflies, structure base sites, and communication regeneration stations.

Detailed engineering and construction plans that are required to determine the location and quantity of habitat disturbance for each alternative route would be completed only for the selected alternative route; this information is not available for this analysis. Methods outlined in Section 2.3.5.2 (Construction Activities in the Access Levels subsections) were used to estimate and quantify area of habitats potentially affected by each alternative route using the reference centerline of the 2-mile-wide study corridor as the basis for analysis. The categorical access level combined with slope data were used to estimate the potential area of ground disturbance that could result from using existing access roads, upgrading existing roads, or constructing new access roads on USFS-administered lands. The estimated area of disturbance associated with access roads was added to the estimated disturbance from construction of transmission line towers and work areas for typical 345kV transmission lines. Potential habitat disturbance presented in this analysis only represents disturbance that could occur on USFS-administered lands. Disturbance occurring on non-USFS-administered lands are outside of the scope of this analysis and are not reported. For purposes of this analysis, estimates of habitat disturbance for each alternative route assumed that land-cover types crossed by the transmission line are the same as the communities crossed by the roads that would be used to access that potential alternative route. This assumption would not hold true for all access roads resulting from the variability in distance, topography, and vegetation pattern that would be traversed by the access roads throughout the Project area.

Habitat types used in this analysis are described as land-cover types in Section 3.2.4.3 of the EIS (Regional Setting). Southwest Regional Gap Analysis Project data were used to determine the area of each habitat type crossed by each of the alternative routes; however, this type of analysis is known to underestimate the extent of riparian and aquatic habitats along narrow rivers and streams. Therefore, the riparian and aquatic acres of disturbance were quantified using the National Hydrographic dataset (USDA NRCS et al. 2011). Streams and rivers were buffered by 100 feet to capture the potential riparian habitat along those waters, likely creating an overestimation of riparian habitat disturbance acres in Table 4. Aquatic habitat disturbance is also overestimated in Table 4 as all perennial and intermittent streams crossed by the alternative routes were buffered by 20 feet despite the lack of water flow in many of these stream crossings. Impacts on riparian and aquatic habitats would be avoided, minimized, and mitigated, as described in Section 3.2.4.4 of the EIS (Study Methodology).

TABLE 4
SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING BY LAND-COVER TYPE

Ground Disturbance	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Aspen							
Temporary disturbance[1, 4]	0.0	0.8	0.0	1.6	0.0	0.0	0.0
Permanent disturbance[2, 4]	0.0	0.5	0.0	1.5	0.0	0.0	0.0
Total disturbance	0.0	1.3	0.0	3.1	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	0.0	1.9	0.0	3.8	0.0	0.0	0.0
Barren/Sparsely Vegetated							
Temporary disturbance[1, 4]	5.6	0.0	0.0	1.5	0.0	0.0	0.0
Permanent disturbance[2, 4]	4.0	0.0	0.0	1.5	0.0	0.0	0.0
Total disturbance	9.5	0.0	0.0	3.1	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Big Sagebrush							
Temporary disturbance[1, 4]	76.3	80.0	68.8	70.5	58.3	75	70.0
Permanent disturbance[2, 4]	23.3	22.4	18.3	29.7	15.3	21.6	22.2
Total disturbance	99.6	102.4	87.1	100.2	73.6	96.7	92.6
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Desert Shrub							
Temporary disturbance[1, 4]	18.3	0.0	0.0	2.3	0.0	0.0	0.0
Permanent disturbance[2, 4]	6.4	0.0	0.0	0.5	0.0	0.0	0.0
Total disturbance	24.7	0.0	0.0	2.8	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Disturbed							
Temporary disturbance[1, 4]	13.6	0.0	0.0	0.0	0.0	0.0	0.0
Permanent disturbance[2, 4]	6.5	0.0	0.0	0.0	0.0	0.0	0.0
Total disturbance	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grassland							
Temporary disturbance[1, 4]	4.8	0.0	0.0	0.0	0.0	0.0	0.0
Permanent disturbance[2, 4]	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Total disturbance	6.5	0.0	0.0	0.0	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Invasive							
Temporary disturbance[1, 4]	16.0	0.0	0.0	0.0	0.0	0.0	0.0
Permanent disturbance[2, 4]	3.5	0.0	0.0	0.0	0.0	0.0	0.0
Total disturbance	19.5	0.0	0.0	0.0	0.0	0.0	0.0
Transmission line right-of-way vegetation clearing[3, 4]	36.3	0.0	0.0	0.0	0.0	0.0	0.0
Mountain Shrub							
Temporary disturbance[1, 4]	2.4	4.0	5.6	12.9	4.0	4.0	4.0
Permanent disturbance[2, 4]	0.5	1.9	3.3	10.6	2.7	2.7	2.7
Total disturbance	3.0	5.9	9.0	23.5	6.7	6.7	6.7
Transmission line right-of-way vegetation clearing[3, 4]	0.0	9.5	13.4	30.5	9.5	9.5	9.5

TABLE 4
SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING BY LAND-COVER TYPE

Ground Disturbance	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Pinyon-juniper							
Temporary disturbance[1, 4]	140.3	109.2	35.6	86.8	147.7	60.7	56.9
Permanent disturbance[2, 4]	57.8	66.2	10.5	55.5	15.1	21.2	18.4
Total disturbance	198.1	175.4	46.2	142.3	162.8	81.8	75.3
Transmission line right-of-way vegetation clearing[3, 4]	316.9	248.2	73.5	208.1	212.9	130.8	125.0
Riparian[5]							
Temporary disturbance[1, 4]	36.3	27.2	14.1	21.2	22	16.2	15
Permanent disturbance[2, 4]	15.4	10.6	4.1	10.8	2.6	4	4.7
Total disturbance	51.7	37.8	18.2	32.1	24.6	20.2	19.7
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	5.7	3.8	3.8	3.8	1.9
Shrub-steppe							
Temporary disturbance[1, 4]	6.3	0.8	1.8	3.1	1.6	3.2	3.2
Permanent disturbance[2, 4]	1.5	0.1	0.5	2.5	1.2	2.2	2.2
Total disturbance	7.7	0.9	2.3	5.6	2.9	5.4	5.4
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aquatic[6]							
Temporary disturbance[1, 4]	4.6	2.6	1.8	2.6	3.6	2.6	2
Permanent disturbance[2, 4]	2	1.2	0.6	1.5	0.5	0.7	0.7
Total disturbance	6.6	3.8	2.3	4.2	4.1	3.3	2.6
Transmission line right-of-way vegetation clearing[3, 4]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Totals							
Total disturbance area	446.9	327.5	165.1	316.9	274.7	214.1	202.3

NOTES:

[1]Temporary disturbance: Estimated area of disturbance associated with structure work areas, wire-splicing sites, wire-pulling sites, wire-tensioning sites, multi-use construction yards, staging areas, helicopter refueling sites, guard structures, shooflies, and temporary access roads (refer to Table 2-1 in Chapter 2 of the EIS).

[2]Permanent disturbance: Estimated area of disturbance associated with H-frame and lattice structure base areas, communication regeneration stations and associated fiber optic and powerlines, and permanent access roads (refer to Table 2-2 in Chapter 2 of the EIS).

[3]Right-of-way vegetation clearing: Estimated area of vegetation clearing within the transmission line right-of-way only. Calculations only include vegetation types with the potential to grow 12 feet tall (aspen, mountain shrub, pinyon-juniper, and riparian) and overlap with other disturbance in the Project right-of-way. Vegetation clearing was not calculated for access roads since access road design currently is not available for the alternative routes. Vegetation clearing is required to accurately identify locations of temporary and permanent access roads. Temporary and permanent disturbance calculations include estimated disturbance for all access roads.

[4]5 percent added to the total acreage for estimating purposes.

[5]Riparian habitat was quantified by buffering streams and rivers were by 100 feet in order to capture the potential riparian habitat along those waters, likely resulting in an overestimation of riparian habitat disturbance acres as well as the total disturbance acres on the Dixie and Fishlake National Forests.

[6]Aquatic habitat was quantified by buffering all perennial and intermittent streams crossed by the alternative routes by 20 feet despite the lack of water flow in many of these stream crossings, likely resulting in an over estimation of aquatic habitat disturbance acres as well as the total disturbance acres on the Dixie and Fishlake National Forests.

Acres in table are rounded to the nearest tenth of an acre and, therefore, columns may not sum exactly.

3.1.2 Cumulative Effects Analysis Area

The geographic scope of cumulative effects analysis areas for biological resources addressed in this Appendix are detailed in Table 5. The temporal scope of the analysis includes 2 years for direct and indirect impacts associated with Project construction. The Proponent's proposed action does not include plans to decommission the Project; therefore, the temporal scope of analysis for impacts associated with operation and maintenance of the Project is based on the assumption that the effects of operating and maintaining the transmission line after construction will be permanent.

TABLE 5
CUMULATIVE EFFECTS ANALYSIS AREAS AND RATIONALE FOR SPECIAL STATUS SPECIES

Common Name	Rationale	Cumulative Effects Analysis Area (distance on either side of centerline)
Plants		
Elsinore buckwheat	All are suitable habitat for affected populations.	Extent of known plant populations or suitable habitat within 6th Level hydrologic unit code (HUC) watersheds crossed by the alternative routes
Pinyon penstemon		
Sevier townsendia		
Ward's beardtongue		
Macroinvertebrates and Fish		
Macroinvertebrates	Watershed boundaries would capture potential downstream effects on aquatic species.	6th Level HUC[1]
Bonneville cutthroat trout		
Brown trout		
Cutthroat trout		
Rainbow trout		
Southern leatherside chub		
Virgin spinedace		
Birds		
Bald eagle	Cumulative effects analysis area is based on recommendations for a 0.5 mile buffer in the National Management Guidelines (FWS 2007).	1 mile
Burrowing owl	Home range may be up to 240 hectares (593 acres). A point buffered to 240 hectares has a diameter of 5,735 feet (Lantz et.al. 2004).	5,735 feet
Brewer's sparrow	Occupied territory is about 0.5 hectares (1.2 acres) (Reynolds 1981). A point buffered to 0.5 hectares has a diameter of 262 feet.	262 feet
Black-throated grey warbler	Territory size data for black-throated gray warbler are not available (Guzy and Lowther 1997; Parrish et al. 2002). Given the similar natural history traits and the shared genus with the yellow warbler (*Dendroica*), a 3,200 cumulative effects analysis area buffer distance from the Project area was assumed.	3,200 feet
California condor	Condors are sensitive to human disturbance near their nest sites and are known to abandon sites that experience excessive human activity; restriction of human activities within 1.5 miles of nest sites is recommended (FWS 1996). Although there are no nest sites within 1.5 miles of any alternative route, it is reasonable to assume foraging condors could be aware of disturbance within this distance.	3 miles
Ferruginous hawk	Ferruginous hawks may occupy a home range with a diameter of 2.6 miles (Jasikoff 1982).	2.6 miles

TABLE 5 CUMULATIVE EFFECTS ANALYSIS AREAS AND RATIONALE FOR SPECIAL STATUS SPECIES		
Common Name	**Rationale**	**Cumulative Effects Analysis Area (distance on either side of centerline)**
Hairy woodpecker	Hairy woodpeckers occupy a territory up to 15 hectares (37 acres) (Sousa 1987). A point buffered to 15 hectares has a diameter of 1,434 feet.	1,434 feet
Lincoln's sparrow	Lincoln's sparrows may occupy territories with diameters around 100 meters (328 feet) in low-density populations (Ammon 1995). This gives a cumulative effects analysis area buffer distance of 328 feet on either side of the reference centerline.	328 feet
MacGillivray's warbler	MacGillivray's warblers occupy an average 0.8 hectares (1.98 acres) per territory in Utah (Pitocchelli 1995). This gives a cumulative effects analysis area buffer distance of 331 feet beyond the project boundary.	331 feet
Mountain bluebird	Mountain bluebirds may occupy a territory greater than 5 hectares; however, 5 hectares (12 acres) is the best estimate available (Power and Lombardo 1996). A point buffered to 5 hectares has a diameter of 828 feet.	828 feet
Northern flicker	Northern flickers have a maximum home range of 109 hectares (269 acres) (Elchuk and Wiebe 2003). A point buffered to 109 hectares has a diameter of 3,865 feet.	3,865 feet
Northern goshawk	Northern goshawks typically forage 3 miles or less from their nest, based on Forest Service Regional survey protocol (Browning 1993)	6 miles
Peregrine falcon	The peregrine falcon recovery plan (FWS 1984) includes a 1-mile buffer.	2 miles
Sage thrasher	Sage thrashers occupy a territory up to 1.7 hectares (4.2 acres) (Reynolds et al. 1999). A point buffered to 1.7 hectares has a diameter of 483 feet.	483 feet
Song sparrow	Song sparrows occupy territories that may be up to 6,500 square meters (1.6 acres) (Arcese et al. 2002). A point buffered by 6,500 square meters has a diameter of 299 feet.	299 feet
Vesper sparrow	Vesper sparrows occupy a territory up to 8.2 hectares (20.2 acres)(Jones and Cornely 2002). A point buffered to 8.19 hectares has a diameter of 1059 feet.	1,059 feet
Western bluebird	Western bluebirds occupy a territory of an average 12,756 square meters (less than half of an acre) (Guinan et al. 2008). A point buffered to 12,756 square meters (less than half of an acre) has a diameter of 418 feet.	418 feet
Wild turkey	Wild turkeys are managed under UDWR management/hunt units. The cumulative effects analysis area includes portions of the Pine Valley, Beaver, Monroe, Southwest Desert, and Fillmores (Oak Creek and Pahvant) wildlife management/hunt units. Local wild turkey populations are contained within the 6th Level HUC watersheds crossed by the alternative routes. These 6th Level HUC watersheds include areas essential to the survival of the local wild turkey populations potentially impacted by Project activities.	UDWR-mapped habitats within 6th Level HUCs crossed by the alternative routes
Yellow warbler	Yellow warblers may travel 1,600 feet from the nest to forage (Lowther et al. 1999). This gives a cumulative effects analysis area buffer distance of 3,200 feet beyond the project boundary.	3,200 feet

TABLE 5 CUMULATIVE EFFECTS ANALYSIS AREAS AND RATIONALE FOR SPECIAL STATUS SPECIES		
Common Name	**Rationale**	**Cumulative Effects Analysis Area (distance on either side of centerline)**
Mammals		
Mule deer	Mule deer are managed under UDWR management/hunt units. The cumulative effects analysis area includes portions of the Pine Valley, Beaver, Monroe, Southwest Desert, and Fillmores (Oak Creek and Pahvant) wildlife management/hunt units. Local mule deer populations are contained within the 6th Level HUC watersheds crossed by the alternative routes. These 6th Level HUC watersheds include areas essential to the survival of the local mule deer populations potentially impacted by Project activities.	UDWR-mapped habitats within 6th Level HUCs crossed by the alternative routes
Rocky Mountain elk	Elk are managed under UDWR management/hunt units. The cumulative effects analysis area includes portions of the Pine Valley, Beaver, Monroe, Southwest Desert, and Fillmores (Oak Creek and Pahvant) wildlife management/hunt units. Local elk populations are contained within the 6th Level HUC watersheds crossed by the alternative routes. These 6th Level HUC watersheds include areas essential to the survival of the local elk populations potentially impacted by Project activities. Elk habitat has not been defined by UDWR within the Pine Valley wildlife management unit, which is crossed by the southern alternative routes, although UDWR manages a limited number of elk in the area (Rodriguez 2012). The cumulative effects analysis area for the southern alternative routes includes suitable habitat types within impacted watersheds that overlap USFS-administered lands as this likely covers the extent of the population's range.	UDWR-mapped habitats within 6th Level HUCs crossed by the Project and potentially suitable habitat cover types within HUCs crossed by the alternative routes on the Dixie National Forest
Pygmy rabbit	Pygmy rabbits may disperse up to 1.8 miles (Estes-Zumpf and Rachlow 2009).	1.8 miles
Spotted bat	Spotted bats appear to maintain exclusive foraging areas 3 to 6 miles from their day roost sites (Wackenhut and McGraw 1998). Because Townsend's bats also forage in riparian areas, a 6-mile buffer beyond the project boundary was included in the cumulative effects analysis area for these bats.	6 miles
Townsend's big-eared bat		
NOTE: [1]HUC areas are regions delineated by drainage areas starting at the mouth of water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow, or watershed areas. They are crossed by the alternative routes within National Forest boundaries (U.S. Geological Survey 2012).		

3.1.3 Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

Lands administered by Dixie and Fishlake National Forests are managed for multiple resource uses. Past and present actions in the cumulative effects analysis area include timber harvest, livestock grazing, and recreational use (e.g., off-road-vehicle use, biking, hiking, camping, and hunting). Oil and gas exploration and development, mining, production of minerals, transmission lines, pipelines, and communication site development also take place on National Forests and

other surrounding public lands. These aforementioned land uses have previously, currently, and would continue to contribute to habitat modification of the landscape. Despite these incremental modifications of natural habitats, habitat functionality is maintained on the majority of lands administered by the Dixie and Fishlake National Forests.

3.2 Alternatives

3.2.1 No Action Alternative

No construction, operation, or maintenance activities would occur under the No Action Alternative. Current management and use of the study corridor would continue into the reasonably foreseeable future. Impacts on biological resources associated with the implementation of the Project would not occur.

3.2.2 Northern Alternative Routes

All northern alternative routes use the same links and propose identical actions as they cross USFS-administered lands on the Fishlake National Forest. Therefore, impacts on biological resources on USFS-administered lands would be identical for all northern alternative routes (Table 4). None of the northern alternative routes would affect the Dixie National Forest.

3.2.3 Southern Alternative Routes

All eight southern alternative routes would cross USFS-administered lands on the Dixie National Forest. For disturbance calculations and discussions, Alternatives S1 and S5 are presented as one alternative, as are Alternatives S3 and S6. Therefore, the tables and discussion are based on six alternative routes rather than eight. All southern alternative routes would involve similar construction activities and have similar needs for right-of-way and ancillary facilities. Differences in impacts on biological resources on USFS-administered lands between alternative routes are driven by the quantity of Forest lands crossed and the types and quantity of biological resources present on the different alternative routes. None of the southern alternative routes would affect the Fishlake National Forest.

4.0 Effects of Project Activities on Alternative Routes

This section summarizes potential direct, indirect, and cumulative effects of project activities that could occur in any one of the alternative routes on MIS, sensitive species, and other species of concern on the Dixie and Fishlake National Forests. Chapter 3 of the EIS (Affected Environment and Environmental Effects) describes impacts of construction, operation, and maintenance of the Project alternative routes on biological resources including those addressed in this report. Section 3.2.4.4 of the EIS (Study Methodology) outlines the methodology of impact assessment and mitigation planning for vegetation communities, wildlife, and special status species considered in the EIS.

4.1 Direct, Indirect, and Cumulative Effects

4.1.1 Direct Effects

4.1.1.1 Vegetation

Vegetation would be cleared prior to construction of access roads, tower sites, and work areas; tall growing vegetation (greater than 12 feet in height) would be removed from within the right-of-way, throughout the life of the Project, to allow for safe operation of the transmission line. Other impacts could include crushing of vegetation during construction, operation, and maintenance as a result of movement of public and construction vehicles off of areas cleared and maintained for vehicle access and construction activities. These Project activities would result in individual plant mortalities, habitat alteration, and habitat loss in cases where avoidance mitigation measures cannot be implemented. If special status plant-occupied habitat cannot be avoided, loss of individuals and suitable habitat would occur only in the ground disturbance portion of the potential right-of-way where roads and tower work areas would be located.

4.1.1.2 Wildlife

Behavioral disturbance and displacement of wildlife from areas within and adjacent to the right-of-way due to construction noise and the presence of humans and construction equipment could occur during construction. Mortality of wildlife could occur during construction and maintenance if wildlife is crushed by or collide with moving construction equipment. Birds and bats may be killed by collisions with the transmission line and other Project features during operation of the transmission line. Additionally, construction of access roads and the transmission line could alter and fragment existing habitats, affecting their ability to satisfy the forage and shelter needs of wildlife.

Aquatic species may experience loss of aquatic habitat and removal of vegetation that is important for habitat function as a result of construction of access roads or transmission structures in aquatic habitats in cases where they cannot be avoided.

4.1.1.3 Raptors and Other Migratory Birds

Raptors and migratory birds could experience modification of foraging and nesting habitat due to construction of access roads and tower structures. Vegetation clearing and maintenance could also modify or remove foraging and nesting habitat. Mortality of birds could occur due to collisions with the transmission line or towers. Birds may abandon nests during breeding seasons as a result of increased stress from human presence and construction activities; however, such impacts would be mitigated through seasonal restrictions and active nest buffers (refer to Tables 2-5 and 2-6 in Chapter 2 of the EIS). Construction of tall structures that could be used by raptors for perching or nesting in habitats where perches are otherwise limited could increase raptor hunting and nesting success.

4.1.1.4 Big Game

Effects on big game (i.e., mule deer and elk) could include temporary displacement of big game animals from crucial seasonal habitats into less suitable habitats, behavioral disruption, and additional stress due to construction noise and activity; however, such impacts would be mitigated through seasonal restrictions (refer to Tables 2-5 and 2-6 in Chapter 2 of the EIS). Impacts associated with operation and maintenance could include temporary behavioral disturbance and displacement from crucial seasonal habitats to less suitable habitats during routine inspections and maintenance activities. Big game animals could also experience modification of forage resources as a result of right-of-way vegetation maintenance and Project construction.

4.1.2 Indirect Effects

4.1.2.1 Vegetation

Project-related construction and maintenance activities, in addition to construction of access roads that could be used by the public for motorized access to previously inaccessible areas, could affect vegetation communities in the study corridor by introducing or spreading weeds and non-native plant species. These activities also potentially could alter the frequency of wildland fire in the study corridor due to increased risk of fire ignition due to vehicle use, human presence, and spread of non-native plant species. Construction and maintenance activities, along with an overall increase in the number and usage of roads may increase the amount of dust generated around vegetation communities; potentially altering the local plant viability, productivity, and natural pollination processes. Design features of the proposed action (as described in Table 2-6 of the EIS) would help reduce the risk of spreading noxious weeds and the risk of fire ignition due to vehicle use and human presence. These design features include development of a Noxious Weed Management Plan (Design Feature 14) and development of a Fire Protection Plan (Design Feature 5) in coordination with the agencies.

4.1.2.2 Wildlife

Construction of the transmission line, access roads, and other Project facilities could fragment wildlife habitat, increase the potential for spread of noxious weeds, and could increase the frequency of human caused wildfires. Habitats affected by wildfires often take several years to recover and provide for the forage and shelter needs of wildlife. Construction of new access roads and associated increases in human visitation could cause disturbance of wildlife due to increased human presence in areas rarely visited by humans in their existing condition. Public access on newly constructed roads would be restricted to the extent feasible. Prey taken by raptors could experience increased predation due to use of transmission structures by raptors as perches in habitats with otherwise limited perching opportunities. These impacts may cause degradation and abandonment of wildlife habitat and alteration of predator-prey relationships, which potentially could affect carrying capacity of habitats in the study corridor.

Indirect effects on aquatic habitats and fisheries could include temporary increases in turbidity and sedimentation associated with ground disturbance near aquatic habitats during construction.

4.1.2.3 Raptors and Other Migratory Birds

Construction, operation, and maintenance of the transmission line could cause similar indirect impacts on raptors and migratory birds as those described in Section 4.1.2.2 (Wildlife) of this analysis. Additionally, raptors and other migratory birds could be affected by increases in hunting and poaching pressure due to increased motorized access in habitats that are rarely visited by humans in their existing condition. Public access on newly constructed roads would be restricted to the extent feasible.

4.1.2.4 Big Game

Construction, operation, and maintenance of the transmission line could cause similar indirect impacts on big game as those described in Section 4.1.2.2. Other impacts on big game species that could occur include increased legal hunting and poaching pressure resulting from increased public access into big game habitats. Public access on newly constructed roads would be restricted to the extent feasible.

4.1.3 Cumulative Effects

The Project would contribute to existing and future effects of development on biological resources through incremental fragmentation, loss, and decreases in quality of native vegetation communities and habitats available for wildlife. Cumulative effects on biological resources also could occur due to interactions of unrelated actions within the study corridor. Alternative routes that would locate the transmission line adjacent to existing developments that have contributed to the existing loss, fragmentation, and reduction in quality of habitats in the study corridor could have less detrimental effects on biological resources than alternative routes that would locate transmission line in previously undisturbed habitats. Alternative routes that would locate the transmission line adjacent to similar types of development (i.e., other transmission lines) likely would have less cumulative effects than alternative routes that would locate the transmission line adjacent to underground utilities (i.e., pipelines). Alternative routes that avoid highly sensitive biological resources (i.e., threatened, endangered, candidate species, and their associated habitats) would avoid the incremental modification of habitats on which these species depend.

4.1.4 Management Indicator Species

4.1.4.1 Open Motorized Road Density

Open Motorized Road Density (OMRD) is used to measure effects on habitat effectiveness[2], as it ties to the Dixie Forest Plan guideline on road density (USFS 1986a, page IV-50). Existing OMRD was calculated using the 2011 Dixie National Forest Roads data, the 2010 Fishlake National Forest data, and the ESRI street map 2010 roads data. The calculation was determined within the boundaries of 6th Level HUC areas, crossed by the alternative routes within the Dixie and Fishlake National Forests. Additionally, the potential increase in OMRD for

[2]The degree to which a patch of habitat is able to support an animal or group of animals and how this ability is affected by human disturbance (Gaines et al. 2005).

each alternative route was calculated within the affected HUC areas using an estimation of miles of access roads required for each alternative route, which was obtained using the methods described in Section 2.3.5.2 of the EIS. Results of this analysis are presented Table 6.

TABLE 6
SUMMARY OF ESTIMATED OPEN MOTORIZED ROAD DENSITY FOR MANAGEMENT INDICATOR SPECIES

Description	Fishlake National Forest Alternative Routes (miles)	Dixie National Forest Alternative Routes (miles)							
	N1 to N6[1]	S1	S2	S3	S4	S5	S6	S7	S7-A
Current miles open road	392.8	224.7	180.5	276.0	180.5	224.7	276.0	180.5	180.5
Total square miles habitat in Hydrologic Unit Code (HUC) area	278.60	137.3	110.0	176.5	110.0	137.3	176.5	110.0	110.0
Current road density (miles per square mile)	1.41	1.64	1.64	1.56	1.64	1.64	1.56	1.64	1.64
Potential miles of open road	424.6	237.6	193.1	305.4	190.1	251.8	305.4	212.3	193.4
Potential road density (miles per square mile)	1.5	1.7	1.8	1.7	1.7	1.8	1.7	1.9	1.8

NOTE: [1]Sum of the current open road miles, plus each possible alternative open road miles, all divided by the HUC square-mile area, within the boundaries of the Fishlake and Dixie National Forests. Implementation of any alternative route would result in a slight increase in open motorized road density. None of the alternative routes would result in an open motorized road density greater than the recommended 2 miles per square mile for the Dixie or Fishlake National Forests. Habitat effectiveness for mule deer would remain essentially unchanged on USFS-administered lands crossed by the Project.

Conclusion in Relationship to Land and Resource Management Plans

None of the alternative routes would lead to road densities greater than the Dixie National Forest LRMP guideline of 2.0 miles per square mile.

4.1.4.2 Rocky Mountain Elk (*Cervus canadensis*), Dixie and Fishlake National Forests (MIS)

Effects

Total affected acres of potentially suitable elk habitat are presented in Table 7. UDWR seasonal habitat was evaluated on the portions of Fishlake National Forest and BLM lands crossed by the Project. UDWR seasonal elk habitat does not exist for the affected portion of the Dixie National Forest; however UDWR manages a limited number of elk in the area (Rodriguez 2012). None of the northern or southern alternative routes cross UDWR crucial elk habitat. Suitable habitats consisting of aspen, big sagebrush, desert shrub, grassland, invasive, mountain shrub, pinyon-juniper, riparian, and shrub-steppe were evaluated for the elk on the southern portion of the Project.

TABLE 7
SUMMARY OF EFFECTS ON ROCKY MOUNTAIN ELK HABITAT

Habitat Type		Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
		N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7 to A
Project habitat disturbance on Forest	Substantial winter[1]	70	–	–	–	–	–	–
	Substantial summer[1]	122	–	–	–	–	–	–
Potentially suitable habitat disturbance on Forest		–	328	165	317	275	214	202
Project disturbance within the cumulative effects analysis area (BLM and USFS-administered lands)[1, 2, 3]	Substantial winter[1]	110 or 181	–	–	–	–	–	–
	Substantial summer[1]	122	–	–	–	–	–	–
	Substantial year long[1]	24 or 137	–	–	–	–	–	–
	Potentially suitable habitat disturbance[2]	–	439 or 537	364	464 or 578	383	378	371
Available habitat within the cumulative effects analysis area (BLM and USFS-administered lands)[1, 2, 3]	Substantial winter[1]	36,739 or 64,154		–	–	–	–	–
	Substantial summer[1]	111,049 or 117,592	–	–	–	–	–	–
	Substantial year long[1]	17,349 or 48,947	–	–	–	–	–	–
	Potentially suitable habitat [2]	–	150,657 or 175,084	119,737	159,616 or 270,757	119,737	119,737	119,737

NOTES:
[1]Determined by Utah Division of Wildlife Resources wildlife biologists and last updated August 2007
[2]The cumulative effects analysis area for elk includes substantial habitats within 6th level HUCs crossed by the Project centerline. Currently, elk habitat has not been defined within the Pine Valley wildlife management unit, which is crossed by the southern alternative routes, although UDWR manages a limited number of elk in the area (Rodriguez 2012). The cumulative effects analysis area for the southern alternative routes includes suitable habitat types within impacted watersheds (6th Level hydrologic unit codes) that overlap USFS-administered lands as this likely covers the extent of the population's range.
Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.
[3]While crossing UDWR seasonal habitats, Alternatives N1 to N3 share a corridor, and Alternatives N4 to N6 share another corridor. Acreages are cited as Alternatives N1 to N3 and Alternatives N4 to N6.

Northern Alternative Routes

The entire extent of northern alternative routes (including impacts on lands not administered by USFS) would affect 110 or 181 acres (Alternatives N1 to N3 or N4 to N6, respectively) substantial winter elk habitat. All northern alternative routes would affect approximately 122 acres of substantial summer elk habitat. The entire extent of northern alternative routes would affect 24 or 137 acres of (Alternatives N1 to N3 or Alternatives N4 to N6, respectively) of substantial year-long elk habitat in the cumulative effects analysis area. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 156 acres of substantial summer elk habitat and 107 acres of substantial winter elk habitat would incur right-of-way clearing (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to early-seral types, which are preferred for foraging.

Disturbance to elk could occur as a result of the proposed activities, but is unlikely as the animals may avoid areas where Project activities were occurring and there is abundant available habitat within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes likely would be minimal, as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 324 acres (99 percent) are potentially suitable elk habitat. The extent of Alternatives S1 and S5 would affect 439 or 537 acres, respectively, of potentially suitable elk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 328 acres would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to early seral types, which are preferred for foraging.

Disturbance to elk could occur as a result of the proposed activities, but is unlikely as elk densities are relatively low in this area. Animals may avoid areas where Project activities would occur and surrounding abundant available habitat occurs within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance from livestock use and development.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 163 acres (99 percent) are potentially suitable elk habitat. The extent of Alternative S2 would affect 364 acres of potentially suitable elk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 165 acres would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to early-seral types, which are preferred for foraging.

Disturbance to elk could occur as a result of the proposed activities, but is unlikely as the corridor parallels an existing highway and elk densities are relatively low in this area. Animals

may avoid areas where Project activities were occurring and there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 310 acres (98 percent) are potentially suitable elk habitat. The extent of Alternatives S3 and S6 would affect 464 or 578 acres, respectively, of potentially suitable elk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 317 acres would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to early-seral types, which are preferred for foraging.

Disturbance to elk could occur as a result of the proposed activities but is unlikely as elk are not typically found in this portion of the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the low frequency of elk use in the area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 271 acres (99 percent) are potentially suitable elk habitat. The extent of Alternative S4 would affect 383 acres of potentially suitable elk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 275 acres would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to early-seral types, which are preferred for foraging.

The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 211 acres (98 percent) are potentially suitable elk habitat. The extent of Alternative S7 would affect 378 acres of potentially suitable elk habitat in the cumulative effects analysis area. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 214 acres would incur right-of-way clearing, decreasing potential habitat effectiveness for elk on the Forest (Table 4).

The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 200 acres (99 percent) are potentially suitable elk habitat. The extent of Alternative S7-A would affect 371 acres of potentially suitable elk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 7). Approximately 202 acres would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for elk unless vegetation was converted to

early-seral types, which are preferred for foraging. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Implementation of any alternative route would result in a slight increase in OMRD (Table 6). None of the alternative routes would result in an OMRD greater than the Dixie National Forest LRMP recommended 2 miles per square mile for the Dixie or Fishlake National Forests. Habitat effectiveness resulting from the OMRD would remain relatively unchanged for Rocky Mountain elk on USFS-administered lands affected by the Project.

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely affect the species or the upward population trend of Rocky Mountain elk on the Fishlake or Dixie National Forests.

4.1.4.3 Mule Deer (*Odocoileus hemionus*), Dixie and Fishlake National Forests, (MIS)

Effects

Total acres of UDWR crucial and seasonal mule deer habitat affected are presented below in Table 8.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on the Fishlake National Forest, 178 acres (40 percent) or 193 acres (43 percent) (N1 to N3 and N4 to N6 respectively) is crucial winter habitat and 97 acres (22 percent) or 105 acres (23 percent) is summer substantial habitat that would be disturbed. The extent of northern alternative routes (including impacts on lands not administered by USFS) would affect between 404 or 653 acres of crucial winter habitat, and 106 or 12 acres of summer substantial habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial summer habitat and 151 acres of crucial habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging.

TABLE 8
SUMMARY OF EFFECTS ON MULE DEER HABITAT

Habitat Type		Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
		N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Project habitat disturbance on Forest[1]	Crucial winter	178 or 193	5	22	0	39	22	22
	Crucial summer	0	113 or 115	47	101	79	76	76
	Substantial winter	0	103 or 104	42	61	61	43	43
	Substantial summer	97 or 105	42	11	21	27	29	29
	Substantial year long	0	3	10	80	10	10	10
Total ground disturbance on Forest		447	328	165	317	275	214	202
Project disturbance within the cumulative effects analysis area[1, 2, 3]	Crucial winter	404 or 653	112 or 39	142	25 or 120	157	147	147
	Crucial summer	0	120	74	108	79	76	76
	Substantial winter	0	170 or 246	98	127 or 244	113	102	102
	Substantial summer	106 or 112	45	25	20	27	29	29
	Substantial year long	0	3	11	80	11	11	11
Available habitat within the cumulative effects analysis area[1, 2, 3]	Crucial winter	173,247 or 267,606	17,511 or 17,771	10,534	19,583 or 24,658	10,534	10,534	10,534
	Crucial summer	0	42,825	36,597	69,364	36,597	36,597	36,597
	Substantial winter	0	70,301 or 75,782	45,388	54,553 or 107,868	45,388	45,388	45,388
	Substantial summer	167,763 or 183,046	23,882	15,891	28,490	15,891	15,891	15,891
	Substantial year long	0	10,731	8,167	12,914	8,167	8,167	8,167

NOTES:
[1]Determined by Utah Division of Wildlife Resources wildlife biologists and last updated August 2007
[2]The cumulative effects analysis area for mule deer includes crucial and substantial habitats crossed by the Project centerline within impacted watersheds (6th Level HUCs).
[3]Ranges represent the minimum and maximum area among alternative routes when more than two corridors contain mapped habitat.
Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife Management Plan(Appendix B6 of the Plan of Development). Disturbance to mule deer could occur as a result of the proposed activities, but is unlikely as the animals may avoid areas where Project activities were occurring and disturbance would be limited in extent relative to available suitable habitat within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 118 acres (36 percent) or 120 acres (37 percent) is crucial habitat (S1 and S5 respectively), 103 acres (31 percent) or 104 acres (32 percent) is winter substantial habitat, 42 acres (13 percent) is summer substantial habitat, and 3 acres (1 percent) is year-long substantial habitat. The extent of Alternatives S1 and S5 would affect 112 or 39 acres, respectively, of crucial winter mule deer habitat and 170 or 246 acres, respectively, of substantial winter habitat. Both routes would affect 120 acres of crucial habitat, 45 acres of substantial summer habitat, and 3 acres of substantial year-long habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial habitat, 96 acres of crucial summer habitat, and 7 acres of crucial winter habitat would incur right-of-way clearing, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging.

Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife Management Plan (Appendix B6 of the Plan of Development). Disturbance to mule deer could occur as a result of the proposed activities, but is unlikely as the deer may avoid areas where Project activities were occurring and disturbance would be limited in extent relative to available suitable habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance from livestock use and development.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 69 acres (42 percent) is crucial habitat, 42 acres (25 percent) is winter substantial habitat, 11 acres (7 percent) is summer substantial habitat, and 10 acres (6 percent) is year-long substantial habitat. The extent of S2 would affect 142 acres of crucial winter habitat, 74 acres of crucial summer habitat, 98 acres of substantial winter habitat, 25 acres of substantial summer habitat, and 11 acres of substantial year-long habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial habitat, 96 acres of crucial summer habitat, and 7 acres of crucial winter habitat would incur right-of-way clearing, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging. Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife

Management Plan (Appendix B6 of the Plan of Development). Disturbance to mule deer could occur as a result of the proposed activities, but is unlikely as the deer may avoid areas where Project activities were occurring and disturbance would be limited in extent relative to available suitable habitat within the cumulative effects analysis area. The magnitude of the effects of from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor and in areas of existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 101 acres (32 percent) is summer crucial habitat, 61 acres (19 percent) is winter substantial habitat, 21 acres (7 percent) is summer substantial habitat, and 80 acres (25 percent) is year-long substantial habitat. The extent of Alternatives S3 and S6 would affect 25 or 120 acres, respectively, of crucial winter mule deer habitat and 127 or 244 acres, respectively, of substantial winter habitat. Both routes would affect 108 acres of crucial summer habitat, 20 acres of substantial summer habitat, and 80 acres of substantial year-long habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial habitat, 96 acres of crucial summer habitat, and 7 acres of crucial winter habitat would incur right-of-way clearing, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging.

Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife Management Plan (Appendix B6 of the Plan of Development). Disturbance to mule deer could occur as a result of the proposed activities, but is unlikely as the deer may avoid areas where Project activities were occurring and disturbance would be limited in extent relative to available suitable habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance from livestock use and development.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 118 acres (43 percent) is crucial habitat, 61 acres (22 percent) is winter substantial habitat, 27 acres (10 percent) is summer substantial habitat and 10 acres (4 percent) is year-long substantial habitat. The extent of Alternative S4 would affect 157 acres of crucial winter habitat, 79 acres of crucial summer habitat, 113 acres of substantial winter habitat, 27 acres of substantial summer habitat, and 11 acres of substantial year-long habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial habitat, 96 acres of crucial summer habitat, and 7 acres of crucial winter habitat would incur right-of-way clearing, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging.

Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife Management Plan (Appendix B6 of the Plan of Development). The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S7 and S7-A.

These alternatives impact the same amount and value of mapped mule deer habitat. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 98 acres (46 percent) is crucial habitat, 43 acres (20 percent) is winter substantial habitat, 29 acres (14 percent) is summer substantial habitat, and 10 acres (5 percent) is year-long substantial habitat. The extent of Alternatives S7 and S7-A would affect 147 acres of crucial winter habitat, 76 acres of crucial summer habitat, 102 acres of substantial winter habitat, 29 acres of substantial summer habitat, and 11 acres of substantial year-long habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 8). Approximately 138 acres of substantial habitat, 96 acres of crucial summer habitat, and 7 acres of crucial winter habitat would incur right-of-way clearing, decreasing potential habitat effectiveness for mule deer unless vegetation was converted to early-seral types, which are preferred for foraging.

Construction disturbance in crucial habitats would be avoided through timing restrictions (refer to Table 2-5 of the EIS), and exceptions would only be granted pending agency approval as outlined in the Adaptive Wildlife Management Plan (Appendix B6 of the Plan of Development). The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Implementation of any alternative route would result in a slight increase in OMRD (Table 6). None of the alternatives would result in an OMRD above the Dixie National Forest LRMP recommended two miles per square mile for the Dixie or Fishlake National Forests. Habitat effectiveness resulting from the OMRD would remain relatively unchanged for mule deer on USFS-administered lands affected by the Project.

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely affect the species or the current upward population trend of mule deer on the Fishlake or the Dixie National Forest.

4.1.4.4 Northern Goshawk (*Accipiter gentilis*), Dixie and Fishlake National Forests (MIS and Sensitive)

Effects

Shrub-steppe, pinyon-juniper, mountain shrub, disturbed, big sagebrush, aspen, and riparian habitats that could be used by goshawks for foraging occur in the alternative routes on the Dixie and Fishlake National Forests. Total acres of potentially suitable foraging habitat for goshawk impacted are presented in Table 9.

TABLE 9 SUMMARY OF EFFECTS ON NORTHERN GOSHAWK HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	406	324	163	307	271	211	200
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	724 or 895	535 or 607	471	560 or 572	499	493	484
Potentially suitable habitat within the cumulative effects analysis area	510,486 or 542,403	327,404 or 380,084	294,321	316,036 or 380,057	293,256	296,201	296,081
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.							

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 406 acres (91 percent) are potentially suitable goshawk foraging habitat. This makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 317 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest (Table 4) decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species.

Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. In addition, the magnitude of the effects from the northern alternatives would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agriculture and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 324 acres (99 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 248 acres of pinyon-juniper, 10 acres of mountain shrub, and 2 acres of aspen habitats would incur right-of-way clearing on the Forest

(Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species.

Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Habitat effectiveness would be decreased, but only slightly when considering the mobility of the goshawk and the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 163 acres (99 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 74 acres of pinyon-juniper, 18 acres of riparian, and 13 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species.

Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6.

Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 307 acres (97 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 208 acres of pinyon-juniper, 32 acres of riparian, 31 acres of mountain shrub, and 4 acres of aspen habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species.

Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Habitat effectiveness would be decreased, but only slightly when considering the mobility of the goshawk and the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 271 acres (99 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 213 acres of pinyon-juniper, 25 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species.

Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 211 acres (99 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 131 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species. Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 200 acres (99 percent) are potentially suitable foraging goshawk habitat; however, this makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 9). Approximately 125 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for foraging goshawk unless vegetation was converted to early-seral types which also support prey species. Disturbance to foraging goshawks could occur on the Forest as a result of the proposed activities, but is unlikely as goshawks may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to goshawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely affect the species or alter current northern goshawk population trends on the Dixie or Fishlake National Forests. Project implementation would not result in a loss of viability or contribute to a trend toward a federal listing of the northern goshawk.

4.1.4.5 Wild Turkey (*Meleagris gallopavo*), Dixie National Forest (MIS)

Effects

The potential extent of UDWR-mapped wild turkey habitat affected by each alternative route is presented in Table 10.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 185 acres (41 percent) are mapped wild turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 317 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agriculture and energy development. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

TABLE 10
SUMMARY OF EFFECTS ON WILD TURKEY HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7–A
Habitat disturbance on Forest	185	192	96	183	156	133	128
Total ground disturbance on Forest[1]	447	328	165	317	275	214	202
Project disturbance within the cumulative effects analysis area[1]	269 or 375	344 or 355	189	293 or 337	225	199	195

TABLE 10 SUMMARY OF EFFECTS ON WILD TURKEY HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7–A
Available habitat within the cumulative effects analysis area[1]	149,216 or 131,646	123,559 or 130,378	77,941	107,940 or 193,770	77,941	77,941	77,941

NOTES:
[1]The cumulative effects analysis area for wild turkey includes UDWR-mapped habitats crossed by the Project centerline within impacted watersheds (6th Level HUCs) that overlap USFS-administered lands.
Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Southern Alternative Routes

Alternatives S1 and S5. Of an estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 192 acres (59 percent) are mapped turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 248 acres of pinyon-juniper, 10 acres of mountain shrub, and 2 acres of aspen habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 96 acres (58 percent) are mapped turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 74 acres of pinyon-juniper, 18 acres of riparian, and 13 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 183 acres (58 percent) are mapped turkey habitat This makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 10). Approximately 208 acres of pinyon-juniper, 32 acres of riparian, 31 acres of mountain shrub, and 4 acres of aspen habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-

seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 156 acres (57 percent) are mapped turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 213 acres of pinyon-juniper, 25 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4) decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 133 acres (62 percent) are mapped turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 131 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4),decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 128 acres (63 percent) are mapped turkey habitat. This makes up less than 1 percent of the available habitat within the cumulative effects area (Table 10). Approximately 125 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest (Table 4), decreasing potential habitat effectiveness for turkey unless vegetation was converted to early-seral types which provide foraging. Disturbance to turkeys could occur as a result of the proposed activities, but is unlikely as turkeys may avoid areas where Project activities were occurring, and there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not affect current wild turkey upward forest-wide population trends on the Dixie National Forest, and would not adversely impact wild turkey on either the Dixie or Fishlake National Forest.

4.1.4.6 Sage Nesters: Brewer's Sparrow (*Spizella breweri*), Vesper Sparrow (*Pooecetes gramineus*), Sage Thrasher (*Oreoscoptes montanus*), Fishlake National Forest (MIS)

Effects

The potential extent of grassland and big sagebrush habitat (all considered suitable habitats for sage nesters) affected by each alternative route is presented in Table 11. Although these sage-nesting species are not MIS on the Dixie National Forest, they are included in the migratory bird analysis on both Forests.

TABLE 11
SUMMARY OF EFFECTS ON SAGE NESTER HABITAT

Habitat Type		Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
		N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest		106	102	87	100	74	97	93
Total ground disturbance on Forest		447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area		250 or 451	291 or 314	348	229 or 316	267	327	323
Potentially suitable habitat within the cumulative effects analysis area	Brewer's sparrow	1,332 or 2,243	1,431 or 1,550	1,689	1,544 or 1,635	1,209	1,539	1,556
	Vesper sparrow	5,559 or 8,940	5,695 or 6,053	6,745	6,413 or 6,645	5,026	6,287	6,408
	Sage thrasher	2,464 or 4,065	2,665 or 2,838	3,137	2,893 or 3,014	2,273	2,868	2,899

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 106 acres (24 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 5 to 8 percent of brewer's sparrow habitat, 1 to 2 percent of vesper sparrow habitat, and 3 to 4 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern

alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agriculture and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of an estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (31 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up about 7 percent of brewer's sparrow habitat, about 2 percent of vesper sparrow habitat, and about 4 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 87 acres (53 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 5 percent of brewer's sparrow habitat, 1 percent of vesper sparrow habitat, and 3 percent of sage thrasher habitat in the cumulative effects analysis areas.

Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 100 acres (32 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 6 percent of brewer's sparrow habitat, 2 percent of vesper sparrow habitat, and 3 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 74 acres (27 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 6 percent of brewer's sparrow habitat, 1 percent of vesper sparrow habitat, and 3 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing

restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 97 acres (45 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 6 percent of brewer's sparrow habitat, 2 percent of vesper sparrow habitat, and 3 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 93 acres (46 percent) are potentially suitable breeding and foraging habitat for sage-nesting species. This makes up 6 percent of brewer's sparrow habitat, 1 percent of vesper sparrow habitat, and 3 percent of sage thrasher habitat in the cumulative effects analysis areas. Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not contribute to a potential downward Forest-wide population trend of sage thrasher, Brewer's sparrow, or vesper sparrow on the Fishlake National Forest, and would not adversely impact these species on either the Dixie or Fishlake National Forest.

4.1.4.7 Cavity Nesters: Hairy Woodpecker (*Picoides villosus*), Western Bluebird (*Sialia mexicana)*, Mountain Bluebird (*Sialia currucoides*), Fishlake National Forest (MIS); Northern Flicker (*Colaptes auratus*), Dixie National Forest (MIS)

Effects

The potential extent of grassland, mountain shrub, pinyon-juniper, aspen, and riparian habitat (all considered suitable nesting or foraging habitats for cavity nesters) affected by each alternative route is presented in Table 12. These cavity-nesting species are included in the migratory bird analysis on both Forests.

TABLE 12 SUMMARY OF EFFECTS ON CAVITY NESTER HABITAT								
		Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type		N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest		259	220	73	201	194	109	102
Total ground disturbance on Forest		447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area		238 or 327	221 or 293	114	240 or 329	219	149	145
Potentially suitable habitat within the cumulative effects analysis area	Hairy woodpecker	6,724 or 8,630	6,556 or 8,688	3,132	6,182 or 8,840	5,196	3,830	3,595
	Western bluebird	1,960 or 2,561	1,776 or 2,402	835	1,821 or 2,573	1,549	1,097	1,072
	Mountain bluebird	3,833 or 4,977	3,596 or 4,856	1,697	3,556 or 5,091	3,025	2,154	2,074
	Northern Flicker	19,249 or 24,770	19,443 or 24,795	10,784	17,279 or 23,806	13,765	12,307	11,761
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.								

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 259 acres (58 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 3 or 4 percent of hairy woodpecker habitat, 10 or 13 percent of western bluebird habitat, 5 or 7 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 317 acres of pinyon-juniper habitat would incur right-of-way clearing, decreasing potential nesting habitat availability for cavity-nesting species on the Forest (Table 4). Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agriculture and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. An estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 220 acres (67 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 3 percent of hairy woodpecker habitat, 9 or 12 percent of western bluebird habitat, 5 or 6 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately

248 acres of pinyon-juniper, 10 acres of mountain shrub, and 2 acres of aspen habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity- nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 73 acres (44 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 2 percent of hairy woodpecker habitat, 9 percent of western bluebird habitat, 4 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 74 acres of pinyon-juniper, 18 acres of riparian, and 13 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity- nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing highways, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 201 acres (63 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 2 or 3 percent of hairy woodpecker habitat, 8 or 11 percent of western bluebird habitat, 4 or 6 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 208 acres of pinyon-juniper, 32 acres of riparian, 31 acres of mountain shrub, and 4 acres of aspen habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity-nesting species (Table 4).

Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 194 acres (71 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 4 percent of hairy woodpecker habitat, 13 percent of western bluebird habitat, 6 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 213 acres of pinyon-juniper, 25 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity nesting species (Table 4).

Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance

buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 109 acres (51 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 3 percent of hairy woodpecker habitat, 10 percent of western bluebird habitat, 5 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 131 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity-nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (50 percent) are potentially suitable nesting and foraging habitat for cavity-nesting species. This makes up 3 percent of hairy woodpecker habitat, 10 percent of western bluebird habitat, 5 percent of mountain bluebird habitat, and 1 percent of northern flicker habitat in the cumulative effects analysis areas. Approximately 125 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for cavity-nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not affect current stable hairy woodpecker, mountain bluebird, or western bluebird forest-wide population trends on the Fishlake National Forest, and would not adversely impact these species on either the Dixie or Fishlake National Forest.

Construction, operation, and maintenance of the Project along any of the alternative routes would not affect current northern flicker stable Forest-wide population trends on the Dixie National Forest, and would not adversely impact northern flickers on either the Dixie or Fishlake National Forest.

4.1.4.8 Riparian Nesters: Lincoln's Sparrow (*Melospiza lincolnii)*, Song Sparrow (*Melospiza melodia)*, Yellow Warbler (*Dendroica petechia)*, MacGillivray's Warbler (*Oporornis tolmiei)*, Fishlake National Forest (MIS)

Effects

The extent of impacts on riparian habitats that could be used for breeding and foraging by yellow and MacGillivray's warblers as well as Lincoln's and song sparrows are presented in Table 13. Although the riparian nesting birds are not MIS species on the Dixie National Forest, they are included in the migratory bird analysis on both Forests.

TABLE 13
SUMMARY OF EFFECTS ON RIPARIAN NESTER HABITAT

Habitat Type		Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
		N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest		52	38	18	32	25	20	20
Total ground disturbance on Forest		447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area		127 or 141	71 or 80	56	71 or 85	71	57	58
Potentially suitable habitat within the cumulative effects analysis area	Lincoln's sparrow	880 or 997	425 or 497	362	428 or 554	307	347	361
	Song sparrow	798 or 908	389 or 456	328	389 or 506	280	315	329
	Yellow warbler	8,118 or 9,239	3,713 or 4,134	3,396	4,157 or 4,788	3,098	3,391	3,375
	MacGillivray's warbler	889 or 1,006	428 or 500	366	432 or 559	310	350	364

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 52 acres (12 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 14 percent of Lincoln's sparrow habitat, 16 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 14 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13).

Disturbance to these species could occur as a result of the proposed activities, but is unlikely as riparian areas will be avoided as much as possible. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available riparian habitat remains within the cumulative effects analysis area.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 38 acres (12 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 17 percent of Lincoln's sparrow habitat, 18 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 17 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13).

Disturbance to these species could occur as a result of the proposed activities, but is unlikely as riparian areas will be avoided as much as possible. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available riparian habitat remains within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 18 acres (11 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 15 percent of Lincoln's sparrow habitat, 17 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 15 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13). Approximately 18 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for riparian nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but is unlikely as habitat is extremely limited within the Project area. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 32 acres (10 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 17 or 15 percent of Lincoln's sparrow habitat, 18 or 17 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 16 or 15 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13). Approximately 32 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for riparian nesting species (Table 4).

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 25 acres (9 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 23 percent of Lincoln's sparrow habitat, 25 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 23 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13).Approximately 25 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for riparian-nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but is unlikely as habitat is extremely limited within the Project area. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the

effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 20 acres (9 percent) are potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 16 percent of Lincoln's sparrow habitat, 18 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 16 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13).Approximately 20 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for riparian-nesting species (Table 4).

Disturbance to these species could occur as a result of the proposed activities, but is unlikely as habitat is extremely limited within the Project area. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 20 acre (10 percent) is potentially suitable breeding and foraging habitat for riparian-nesting species. This makes up 16 percent of Lincoln's sparrow habitat, 18 percent of song sparrow habitat, 2 percent of yellow warbler habitat, and 16 percent of MacGillivray's warbler habitat in the respective cumulative effects analysis areas (Table 13).Approximately 20 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for riparian- nesting species (Table 4). Disturbance to these species could occur as a result of the proposed activities, but is unlikely as habitat is extremely limited within the Project area. The likelihood of disturbance would be reduced further by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not affect current stable yellow and MacGillivray's warblers, or Lincoln's and song sparrows Forest-wide population trends on the Fishlake National Forest, and would not adversely impact these species on either the Dixie or Fishlake National Forest.

4.1.4.9 Aquatic Macroinvertebrate (Biotic Condition Index), Fishlake National Forest (MIS)

Effects

Potential effects on aquatic invertebrates are described in Section 3.1. Some of these water systems may experience temporary increases in turbidity and sedimentation due to ground

disturbance during near-stream road maintenance and the construction phase of the Project as described in the following fish analysis, Section 4.1.4.10.

Although aquatic systems inhabited by macroinvertebrate species are crossed by the alternative routes on the Fishlake National Forest, construction, operation, and maintenance along the various alternative routes are not likely to reduce macroinvertebrate populations.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not affect current aquatic macroinvertebrate forest-wide trends or the Biotic Condition Index (BCI)[3] on the Fishlake National Forest, and would not adversely impact these species on either the Dixie or Fishlake National Forest.

4.1.4.10 Fish: Bonneville Cutthroat Trout (*Oncorhynchus clarkii Utah*) (Sensitive, MIS), Brown Trout (*Salmo trutta*) (MIS), Cutthroat Trout (*Oncorhynchus clarkii*) (MIS), Rainbow Trout (*Oncorhynchus mykiss*) (MIS), Southern Leatherside Chub (*Lepidomeda aliciae*) (Sensitive, Dixie MIS), Virgin Spinedace (*Lepidomeda mollispinis*) (Dixie MIS)

Effects

Riparian, wetland, and aquatic habitats (Selective Mitigation Measure 7; see Table 3-3 of the EIS for all measures) would be spanned, and direct disturbance to aquatic habitats would be limited to stream and river crossings where new access roads are constructed. Little potential exists for any water drawdown or introduction of aquatic invasive species, as water used to control fugitive dust and clean equipment would be obtained from treated municipal sources for water rather than natural streams. Water used in the equipment cleaning and dust control process is unlikely to enter any natural water bodies due to the avoidance of such areas in the planning process. Support vehicles, drill rigs, water trucks, and drafting equipment (if required) would be inspected and sanitized, as necessary, following interagency-approved operational guidelines (USFS 2009). Vegetation clearing in riparian habitats would be limited (Selective Mitigation Measure 4) to trees greater than 12 feet in height, minimizing adverse effects on sensitive fish species. Aquatic habitats that support MIS and sensitive fish species may experience incremental increases in turbidity as a result of sedimentation during stormwater run-off in areas where access roads are constructed near (within 100 feet) of streams and rivers.

Post-construction road maintenance may contribute small amounts of sediment periodically, along with regular run-off during rain events. Disturbance within riparian areas adjacent to aquatic habitat, and associated indirect effects on aquatic habitat, would represent less than 1 percent of total available habitat (Table 14).

[3]The Biotic Condition Index: An index of biological integrity based on consideration of water quality (sulfate and alkalinity), stream habitat (substrate and gradient), and a database of environmental tolerances of aquatic macroinvertebrate taxa.

TABLE 14 SUMMARY OF ESTIMATED GROUND DISTURBANCE AND VEGETATION CLEARING OF RIPARIAN/AQUATIC HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Ground Disturbance	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Riparian[5]							
Temporary disturbance[1, 4]	36	27	14	21	22	16	15
Permanent disturbance[2, 4]	15	110	4	11	3	4	5
Total disturbance	52	33	18	32	25	20	20
Transmission line right-of-way vegetation clearing[3, 4]	0	0	5.7	4	4	4	2
Aquatic[6]							
Temporary disturbance[1, 4]	5	3	21.8	32.6	4	3	2
Permanent disturbance[2, 4]	2	1	10.6	21.5	1	1	1
Total disturbance	7	4	2	4	4	3	3
Transmission line right-of-way vegetation clearing[3, 4]	0	0	0	0	0	0	0

NOTES:
[1]Temporary disturbance: Estimated area of disturbance associated with structure work areas, wire-splicing sites, wire-pulling sites, wire-tensioning sites, multi-use construction yards, staging areas, helicopter refueling sites, guard structures, shooflies, and concrete batch plants, temporary access roads (refer to Table 2-1 in Chapter 2).
[2]Permanent disturbance: Estimated area of disturbance associated with H-frame and lattice structure base areas, communication regeneration stations and associated fiber optic and power lines, and permanent access roads (refer to Table 2-2 in Chapter 2).
[3]Right-of-way vegetation clearing: Estimated area of vegetation clearing within the transmission line right-of-way only. Calculations only include vegetation types with the potential to grow 12 feet tall (aspen, mountain shrub, pinyon-juniper, and riparian) and overlap with other disturbance in the Project right-of-way. Vegetation clearing was not calculated for access roads since access road design currently is not available for the alternative routes. Vegetation clearing is required to accurately identify locations of temporary and permanent access roads. Temporary and permanent disturbance calculations include estimated disturbance for all access roads.
[4]5 percent added to the total acreage for estimating purposes.
[5]Riparian habitat was quantified by buffering streams and rivers were by 100 feet in order to capture the potential riparian habitat along those waters, likely resulting in an overestimation of riparian habitat disturbance acres as well as the total disturbance acres on the Dixie and Fishlake National Forests.
[6]Aquatic habitat was quantified by buffering all perennial and intermittent streams crossed by the alternative routes by 20 feet despite the lack of water flow in many of these stream crossings, likely resulting in an over estimation of aquatic habitat disturbance acres as well as the total disturbance acres on the Dixie and Fishlake National Forests.
Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Disturbance to riparian and aquatic land-cover types and areas adjacent to potential aquatic habitat were calculated for each alternative to provide a basis for comparison of the indirect effect of increased sedimentation on aquatic habitats between alternatives. The OMRD was calculated both at the watershed level and for a more discrete area, within 100 feet of rivers and streams within those watersheds, where the highest sedimentation contribution from roads is likely to occur.

Open Motorized Road Density by Watershed

Existing OMRD was calculated using the 2011 Dixie National Forest roads data, the 2010 Fishlake National Forest data, and the ESRI street map 2010 roads data. The calculation was determined within the boundaries of HUC areas, crossed by the alternative routes within the Dixie and Fishlake National Forests. Additionally, the potential increase in OMRD for each alternative route was calculated within the affected HUC areas using an estimation of miles of

access roads required for each alternative, which was obtained using the methods described in Section 2.3.5.2. Results of this analysis are presented Table 15.

TABLE 15
SUMMARY OF ESTIMATED OPEN MOTORIZED ROAD DENSITY BY WATERSHED

Hydrologic Unit Code Areas[1]	MIS and Sensitive Species Present[2]	Current Road Density[3] (miles)	Road Density by Alternative[5] (miles)								
			N1 to N6[4]	S1	S2	S3	S4	S5	S6	S7	S7-A
Bear Canyon	No known occurrences	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Fish Creek	Rainbow trout, brown trout, Bonneville cutthroat trout[6]	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Flat Canyon	No known occurrences	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Headwaters Clear Creek	Rainbow trout, brown trout, Bonneville cutthroat trout[6]	1.4	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Indian Creek-Sevier River	Rainbow trout	1.3	1.6	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Maple Creek-Sevier River	No known occurrences	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Mill Creek	Rainbow trout	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Mortensen Creek-Sevier River	No known occurrences	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Outlet Clear Creek	Bonneville cutthroat trout	1.8	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Sulphur Creek	No known occurrences	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Thompson Creek-Sevier River	No known occurrences	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Baker Dam Reservoir-Santa Clara River	No known occurrences	0.6	0.6	0.7	0.6	0.6	0.6	0.7	0.6	0.6	0.6
Calf Springs Creek	No known occurrences	2.3	2.3	2.3	2.3	2.6	2.3	2.3	2.6	2.3	2.3
Holt Canyon	No known occurrences	1.4	1.4	1.4	1.6	1.5	1.6	1.4	1.5	1.7	1.7
Lower Shoal Creek	No known occurrences	1.9	1.9	1.9	1.9	2.2	1.9	1.9	2.2	1.9	1.9
Mogotsu Creek	No known occurrences	1.8	1.8	1.8	1.9	2.1	1.8	1.8	2.1	1.8	1.8
Mahogany Creek-Santa Clara River	Brown trout	1.9	1.9	2.1	1.9	1.9	2.0	2.1	1.9	2.0	2.0
Newcastle	No known occurrences	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.9	0.9	0.9

TABLE 15 SUMMARY OF ESTIMATED OPEN MOTORIZED ROAD DENSITY BY WATERSHED											
Hydrologic Unit Code Areas[1]	MIS and Sensitive Species Present[2]	Current Road Density[3] (miles)	Road Density by Alternative[5] (miles)								
			N1 to N6[4]	S1	S2	S3	S4	S5	S6	S7	S7-A
Pinto Creek	Rainbow trout	1.5	1.5	1.5	1.5	1.5	1.5	1.8	1.5	1.5	1.5
Upper Moody Wash	Virgin spinedace	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.2	1.1	1.1
Total miles of new road	–	–	31.8	12.9	12.6	29.4	9.6	27.1	29.4	31.8	12.9

NOTES:
[1] Hydrologic Unit Code (HUC) areas (regions delineated by drainage areas starting at the mouth of water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow, or watershed areas), crossed by the alternative routes within National Forest boundaries (U.S. Geological Survey 2012).
[2]Current fish survey results supporting streams affected by the Twitchell Canyon Fire (U.S. Forest Service 2010)
[3]The existing total miles of open road within each HUC boundary, within the boundaries of the Fishlake and Dixie National Forests, divided by the HUC area in square miles.
[4]Northern Alternatives would all result in the same amount of road density disturbance for each HUC.
[5]Sum of the current open road miles, plus each possible alternative open road miles, all divided by the HUC square-mile area, within the boundaries of the Fishlake and Dixie National Forests.
[6]Approved for Bonneville cutthroat trout (and full complement non-sport fish species including southern leatherside chub) reintroduction, recovery projects initiated (Hadley et al. 2011b).

All northern alternative routes use the same links and propose identical road additions as they cross the same nine HUC areas on the Fishlake National Forest. Of these nine HUC areas, only two would incur more than 0.1 mile increase in road density with the greatest increase (0.3 mile per square-mile area) in the Indian Creek-Sevier River HUC area.

Of the southern alternative routes, Alternatives S3, S6, S7, and S7-A would result in the greatest increase in road density, (0.3 mile per square-mile area) on the Calf Springs, Holt Canyon, Lower Shoal Creek, and Mogotsu Creek HUC areas. Alternative S4 would result in the lowest miles of proposed new road across all southern HUC areas (9.6 miles) given that it crosses the inventoried roadless areas and any roads would be temporary and not included in this analysis. Alternatives S3 and S6 would result in the greatest total miles of proposed new road across all southern HUC areas (29.4 miles) and would result in the highest open road densities per square-mile area for the combined HUC areas crossed on the Dixie National Forest.

Open Motorized Road Density within 100 feet of River and Stream Crossings

For this analysis OMRD within 100 feet of rivers and streams was calculated to compare potential increases in road density and associated sedimentation and turbidity in perennial rivers, streams, and other water bodies. A comparison of potential indirect effects of the Project alternative routes on MIS and sensitive fish species can be made by calculating the existing and potential post-construction OMRD within 100 feet of perennial streams, rivers, and other water bodies for each watershed crossed by the alternative routes (Table 16). Calculations of increases in road density within 100 feet of streams and rivers are made using the access level assigned to the reference centerline at the location where a river or stream is crossed. This analysis assumes that all crossings would require construction of new roads across the river or stream. During engineering design of the selected route, roads would be designed to avoid streams and rivers to the extent feasible (Selective Mitigation Measure 2). Therefore, these calculations are useful for comparing alternatives, but represent an overestimate of actual increase in OMRD within 100 feet of streams and rivers.

TABLE 16 SUMMARY OF ESTIMATED OPEN MOTORIZED ROAD DENSITY WITHIN 100 FEET OF RIVER AND STREAM CROSSINGS		
Hydrologic Unit Code Area[1]	**Current Open-motorized Road Density[2] (miles)**	**New Open-motorized Road Density (miles)**
Alternative N1		
Bear Canyon	2.6	2.6
Fish Creek	1.3	1.3
Flat Canyon	0.2	0.8
Headwaters Clear Creek	2.9	3.0
Indian Creek-Sevier River	3.9	4.2
Maple Creek-Sevier River	1.0	1.2
Mill Creek	6.5	6.9
Mortensen Creek-Sevier River	2.3	2.4
Outlet Clear Creek	5.2	5.4
Sulphur Creek	4.0	4.0
Thompson Creek-Sevier River	–	–
Alternatives S1 and S5		
Baker Dam Reservoir-Santa Clara River	2.8	2.8
Mogotsu Creek	3.3	3.7
Mahogany Creek-Santa Clara River	3.0	3.1
Pinto Creek	6.0	6.3
Alternatives S2, S4, S7, and S7-A		
Holt Canyon	2.8	3.5
Mogotsu Creek	3.3	3.7
Mahogany Creek-Santa Clara River	3.0	3.1
Newcastle	1.1	2.3
Alternatives S3 and S6		
Calf Springs Creek	5.2	5.5
Holt Canyon	2.8	3.5
Lower shoal Creek	2.9	3.3
Mogotsu Creek	3.3	3.7
Newcastle	1.1	2.3
Upper Moody Wash	3.3	3.3

NOTES:
In the absence of detailed design of access roads, access levels along the Project centerline were used to estimate the linear feet of new roads within the Hydrological Units Classification System zones.
[1]Hydrologic unit code (HUC) areas (regions delineated by drainage areas starting at the mouth of water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow, or watershed areas), crossed by the alternative routes within National Forest boundaries (U.S. Geological Survey 2012).
[2]The existing total miles of open road within each HUC boundary, within the boundaries of the Fishlake and Dixie National Forests, divided by the HUC area in square miles.

Implementation of any alternative would result in a slight increase in OMRD within 100 feet of perennial rivers, streams, and other water bodies for HUCs crossed by the Project alternative routes. None of the alternatives would result in an increase in OMRD greater than 1.2 miles per square mile for the Dixie or Fishlake National Forests. Habitat effectiveness would remain relatively unchanged with regard to MIS and sensitive fish populations and aquatic habitat on USFS-administered lands crossed by the Project.

Although aquatic habitats that could be inhabited by Bonneville cutthroat trout, brown trout, cutthroat trout, rainbow trout, and southern leatherside chub, and Virgin spinedace occur in the study corridor on the Fishlake and Dixie National Forests, and in suitable trout habitat downstream of both Forests; the construction, operation, and maintenance along any of the alternative routes are not likely to measurably reduce fish populations due to the lack of direct

effects on aquatic habitats and minimal indirect effects, given avoidance mitigation measures and minimal disturbance near aquatic habitats.

Biotic Condition Index

The Fishlake National Forest LRMP, as amended, includes yearly sampling, of at least five streams, for aquatic macroinvertebrates and has a standard and guideline relating to the BCI (defined on page 42). The BCI is sensitive to different types of stress, gives a linear assessment of conditions from unstressed through all levels of stressed, and it evaluates a stream's condition against its own potential (Winget and Mangum 1979). A BCI rating above 90 is considered excellent, 80-90 good, 72-79 fair, and below 72 poor. According to the Forest's monitoring reports, which can be found at the Fishlake National Forest Supervisor's Office (Mangum [various dates]) and Vinson [various dates]); the available BCI values for waterways supporting MIS and sensitive fish species crossed by the Project are all below 72, or poor relative steam condition, as of 2003 (Table 16). A 2006 sampling of Clear Creek resulted in a 76 (fair) condition rating for relative stream condition.

Northern Alternative Routes

None of the HUCs, or areas within 100 feet of streams and rivers, crossed by the northern alternative route would result in an increased OMRD by more than 0.5 mile (Table 16). The proposed activities may incrementally increase the turbidity and sedimentation in the Bonneville cutthroat trout, southern leatherside chub, and MIS fish inhabited Clear Creek drainages during road construction and maintenance, along with regular run-off during rain events. Portions of these drainages also have been recently degraded by the Twitchell Canyon Fire run-off.

Sensitive Species

Outlet Clear Creek HUC area currently supports Bonneville cutthroat trout and potentially suitable habitat along Fish Creek and the Headwaters of Clear Creek are approved for Bonneville cutthroat trout (and its full complement of non-sport fish species including southern leatherside chub) reintroduction/recovery projects have been initiated (Hadley et al. 2011a and 2011b.).

The HUC area has a naturally variable sediment loading cycle that can be attributed to unpredictable and sometimes highly erosive seasonal rain events and inconsistent snowpack melt cycles. Aquatic species existing in the tributaries and main-stem of Clear Creek have persisted in these water bodies because of their ability to withstand and adapt to varying levels of sediment in the stream. Temporary increases to sediment loads in Clear Creek resulting from construction of the proposed Project are likely to be similar to natural and unpredictable events that have occurred in the past or that have the potential to occur in the future. The magnitude and extent of direct and indirect effects of the northern alternative on these aquatic habitats would be limited, as impacts would occur downstream in affected drainages relative to suitable Bonneville cutthroat trout habitat. Therefore, project activities would not result in a loss of viability or to contribute to a trend toward a federal listing of Bonneville cutthroat trout or southern leatherside chub.

TABLE 17
ESTIMATED BIOTIC CONDITION INDICIES[1] BY YEAR FOR RIVERS AND STREAMS SUPPORTING MANAGEMENT INDICATOR SPECIES AND SENSITIVE FISH SPECIES

Hydrologic Unit Code Areas[2]	Station	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10
Headwaters Clear Creek	Low Clear	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	58	–	–	–	–	–	–	–
Headwaters Clear Creek	Clear Cr 5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	60	–	–	76	–	–	–	C[3]
Fish Creek	Fish Cr 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	64	–	–	–	–	–	–	–
Fish Creek	Fish Cr 2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	68	–	–	–	–	–	–	–
Headwaters Clear Creek	Shingle 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	62	–	–	–	–	–	–	C[3]
Headwaters Clear Creek	Shingle 2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	65	–	–	–	–	–	–	–
Outlet Clear Creek	Sam Stowe	–	–	–	–	78/71	–	–	85	75	–	–	–	–	64	–	–	–	–	–	–	–	–	–	–	–

NOTES:
[1]Biotic Condition Index data for the table is found in Mangum (various dates) and Vinson (various dates). These reports are on file at the Fishlake National Forest. Supervisor's Office.
[2]6th Level Hydrologic Unit Code areas (regions delineated by drainage areas starting at the mouth of water body and proceeding to follow the highest elevation of land that divides the direction of surface water flow, or watershed areas), crossed by the alternative routes within National Forest boundaries (U.S. Geological Survey 2012).
[3]C = Collected pre-Twitchell Canyon Fire 2010, but not analyzed to date.

Management Indicator Species

Mill Creek, Indian Creek/Sevier River, the Headwaters of Clear Creek, and Fish Creek HUC areas support rainbow trout. Fish Creek and Headwaters of Clear Creek Headwaters support brown trout and cutthroat trout.

The HUC area has a naturally variable sediment loading cycle that can be attributed to unpredictable and sometimes highly erosive seasonal rain events and inconsistent snowpack melt cycles. Aquatic species existing in the tributaries and main-stem of Clear Creek have persisted in these water bodies because of their ability to withstand and adapt to varying levels of sediment in the stream. Temporary increases to sediment loads in Clear Creek resulting from construction of the proposed Project are likely to be similar to natural and unpredictable events that have occurred in the past or that have the potential to occur in the future. The magnitude and extent of direct and indirect effects of the northern alternative on these aquatic habitats would be limited, as impacts would occur downstream in affect drainages relative to suitable trout habitat, and would not affect current stable cutthroat, brown, and or rainbow trout forest-wide population trends.

Southern Alternative Routes

None of the HUCs, or areas within 100 feet of streams and rivers, crossed by the southern alternative routes would result in an increased OMRD by more than 1.5 miles. The proposed activities may incrementally increase turbidity and sedimentation in Bonneville cutthroat trout, southern leatherside chub, and MIS fish historically inhabited drainages during road construction and maintenance, along with regular run-off during rain events.

Sensitive Species

Although distribution and occupancy of these streams has not been confirmed but historic potential habitat for Bonneville cutthroat trout and southern leatherside chub occurs in drainages within the study corridor.

The HUC area has a naturally variable sediment loading cycle that can be attributed to unpredictable and sometimes highly erosive seasonal rain events and inconsistent snowpack melt cycles. Aquatic species existing in these water bodies have persisted because of their ability to withstand and adapt to varying levels of sediment in the stream. Temporary increases to sediment loads in these watersheds resulting from construction of the proposed Project are likely to be similar to natural and unpredictable events that have occurred in the past or that have the potential to occur in the future. The magnitude and extent of direct and indirect effects of the northern alternative on these aquatic habitats would be limited; as impacts would occur downstream in affected drainages relative to suitable Bonneville cutthroat trout habitat. Therefore, project activities would not result in a loss of viability or to contribute to a trend toward federal listing of Bonneville cutthroat trout or southern leatherside chub.

Management Indicator Species

Pinto Creek supports rainbow trout, the Mahogany Creek/Santa Clara River HUC area supports brown trout, and Moody Wash supports Virgin spinedace.

The HUC area has a naturally variable sediment loading cycle that can be attributed to unpredictable and sometimes highly erosive seasonal rain events and inconsistent snowpack melt cycles. Aquatic species existing in the tributaries and mainstem of Pinto and Mahogany Creek have persisted in these water bodies because of their ability to withstand and adapt to varying levels of sediment in the stream. Temporary increases to sediment loads in these watersheds resulting from construction of the proposed Project are likely to be similar to natural and unpredictable events that have occurred in the past or that have the potential to occur in the future. The magnitude and extent of direct and indirect effects of the northern alternative on these aquatic habitats would be limited, as impacts would occur downstream in affected drainages relative to suitable trout habitat, and would not affect current stable Virgin spinedace, brown, or rainbow trout forest-wide population trends.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but are not likely to result in a loss of viability or cause a trend toward federal listing of southern leatherside chub or Bonneville cutthroat trout.

Construction, operation, and maintenance of the Project along any of the alternatives not likely to affect current stable cutthroat, brown, or rainbow trout or Virgin spinedace Forest-wide population trends.

4.1.5 Sensitive Species

4.1.5.1 Pygmy Rabbit (*Brachylagus idahoensis*)

Effects

The extent of big sagebrush (potential pygmy rabbit habitat) affected by each alternative route is presented in Table 18.

TABLE 18
SUMMARY OF EFFECTS ON PYGMY RABBIT HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	100	102	87	100	74	97	93
Total ground disturbance on Forest	447	328	165	317	275	214	202

TABLE 18 SUMMARY OF EFFECTS ON PYGMY RABBIT HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance within the cumulative effects analysis area	239 or 639	205 or 242	270	262 or 303	205	263	256
Potentially suitable habitat within the cumulative effects analysis area	43,326 or 95,217	18,528 or 33,233	21,700	23,656 or 41,087	20,397	21,471	21,551
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.							

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 100 acres (22 percent) are potentially suitable pygmy rabbit habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits on the Forest in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found. In addition, the magnitude of the effects from the northern alternatives would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of an estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (31 percent) are potentially suitable pygmy rabbit habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 87 acres (52 percent) are potentially suitable pygmy rabbit breeding habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found. The magnitude of the effects from this alternative route would

be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing highways, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 100 acres (32 percent) are potentially suitable pygmy rabbit habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 74 acres (27 percent) are potentially suitable pygmy rabbit habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 97 acres (45 percent) are potentially suitable pygmy rabbit habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur on the Forest as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 93 acres (46 percent) are potentially suitable pygmy rabbit habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 18). Disturbance to pygmy rabbits could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of pygmy rabbits in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to mitigate adverse effects if pygmy rabbits are found. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but are would not result in a loss of viability on the Dixie and Fishlake National Forests or cause a trend toward federal listing of pygmy rabbit.

4.1.5.2 Spotted Bat (*Euderma maculatum*) and Townsend's Big-eared Bat (*Corynorhinus townsendii*)

Effects

The extent of suitable bat foraging habitat potentially affected by each alternative route is presented in Table 19.

TABLE 19
SUMMARY OF EFFECTS ON BAT FORAGING HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	440	324	163	313	271	211	200
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	1,296 or 1,452	722 or 750	657	760 or 802	695	681	668
Potentially suitable habitat within the cumulative effects analysis area	869,596 or 972,794	483,827 or 504,888	445,557	496,008 or 529,634	442,331	447,348	447,229

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 440 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 19). Approximately 447 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge habitat for foraging bats on the Forest.

There is little risk of disturbance from Project activities to foraging because these bats are nocturnal and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is

diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 324 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 19). Approximately 328 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge habitat for foraging bats on the Forest. There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 163 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 19). Approximately 165 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge habitat for foraging bats on the Forest. There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing highways, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 313 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 19). Approximately 317 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge habitat for foraging bats on the Forest. There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 271 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 19). Approximately 213 acres of pinyon-juniper and 25

acres of riparian habitats would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging bats on the Forest (Table 4). There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 211 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 19). Approximately 214 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge habitat for foraging bats on the Forest. There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 200 acres (99 percent) are potentially suitable bat foraging habitat. Less than half of a percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 19). Approximately 202 acres of habitat would incur right-of-way clearing on the Forest (Table 4), but this would potentially increase suitable edge foraging habitat on the Forest. There is little risk of disturbance to foraging from Project activities because these bats are nocturnal, and the proposed activities would occur during the day. Alteration of foraging habitat within the Project area would not adversely affect bats as there is abundant available habitat within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not result in a loss of viability on the Dixie and Fishlake National Forests or cause a trend toward federal listing of spotted or Townsend’s big-eared bat.

4.1.5.4 Bald Eagle (*Haliaeetus leucocephalus*)

Effects

The extent of potentially suitable habitat for winter roosting and foraging by bald eagles potentially affected by each alternative route on the Dixie and Fishlake National Forests is presented in Table 20.

TABLE 20
SUMMARY OF EFFECTS ON BALD EAGLE HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	447	328	165	317	275	214	202
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	1,296 or 1,452	722 or 750	657	760 or 802	695	681	668
Potentially suitable habitat within the cumulative effects analysis area	136,714 or 155,487	73,037 or 76,953	65,089	74,891 or 80,729	64,289	65,383	65,395

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 477 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects area (Table 20). Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles.

Disturbance to foraging bald eagles could occur on the Forest as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS) (Romin and Muck 2002).In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and

agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. The Project parallels approximately 1.3 miles of known winter foraging habitat along Pinto Creek on the Dixie National Forest. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 328 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 20). The presence of a transmission line, particularly where parallel facilities did not exist before, could increase the risk of collision or electrocution. This risk would be decreased by implementing the design features for raptor safety found in Table 2-6 of the EIS. Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles.

Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. The likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS). Habitat effectiveness would be decreased most with these alternatives when considering the known level of bald eagle use and absence of similar development in the area.

Alternative S2. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 165 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects area (Table 20). Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles. Disturbance to foraging bald eagles could occur on the Forest as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area.

Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS).The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 317 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects areas (Table 20). Right-of-

way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles.

Disturbance to foraging bald eagles could occur as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. The presence of a transmission line, particularly where parallel facilities did not exist before, could increase the risk of collision or electrocution; however, it is less likely on this alternative due to the lack of water and road kill opportunities. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS). Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 275 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects area (Table 20). Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles

Disturbance to foraging bald eagles could occur on the Forest as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS). The magnitude of the effects of Alternatives S2 and S4 alternative routes would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 214 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects area (Table 20). Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles.

Disturbance to foraging bald eagles could occur on the Forest as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS). The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would

share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Bald eagles may forage within any of the vegetation types in the study corridor, but are more likely to be found near water or available road kill. The estimated 202 acres that would be disturbed by Project activities on USFS-administered lands makes up less than 1 percent of the available habitat within the cumulative effects area (Table 20). Right-of-way clearing would have little impact on foraging, but an increase in roads could result in more road kill for foraging eagles.

Disturbance to foraging bald eagles could occur on the Forest as a result of the proposed activities, but is unlikely as the eagles may avoid areas where Project activities were occurring, and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to bald eagles from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If winter roost sites were found within the Project area, the likelihood of disturbance to roosting eagles would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 0.5 mile around winter roost sites (Table 2-5 of the EIS). The magnitude of the effects of Alternative S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along Alternatives S1 and S5 have the greatest potential to adversely impact bald eagles and reduce habitat effectiveness. However, implementation of any of the alternative routes may impact individuals, but would not result in a loss of viability on the Dixie and Fishlake National Forests, or cause a trend toward federal listing of the bald eagle.

4.1.5.5 Greater sage-grouse (*Centrocercus urophasianus*)

Effects

The potential extent of big sagebrush habitat acres affected by each Project alternative route on the Dixie and Fishlake National Forests where the greater sage-grouse potentially could breed and forage is presented in Table 21.

TABLE 21 SUMMARY OF EFFECTS ON GREATER SAGE-GROUSE HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	100	102	87	100	74	97	93
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within 4 miles of Project centerline	406 or 440	288 or 299	343	314 or 315	265	325	
Potentially suitable habitat within 4 miles of Project centerline	20,568	17,451 or 17,688	17,198	20,564 or 21,622	16,721	16,664	16,867
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.							

To meet the FSM 2670 requirements to determine impacts on species viability, the analysis was extended beyond the UDWR-mapped occupied habitat on USFS administered lands to analyze impacts to potentially suitable sage-grouse habitat. All areas identified by Southwest Regional Gap Analysis Project as big sagebrush within 4 miles of the Project on USFS-administered lands were evaluated as potentially suitable habitat. During field visits to the Project area, USFS biologists determined that areas identified as big sagebrush were accurate and have the potential to support greater sage-grouse. With the existing available resource data, the amount, if any, of suitable habitat for sage-grouse occupation cannot be determined. Therefore, the effects of the Project on suitable sage-grouse habitat are theoretical.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS administered lands, 100 acres (22 percent) are potentially suitable greater sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. In addition, the magnitude of the effects from the northern alternative routes on USFS-administered lands would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor as a result of existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (31 percent) are potentially suitable sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21). The presence of a transmission line, particularly where similar facilities did not exist before, would decrease habitat effectiveness if sage-grouse were to move into the area.

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. Habitat effectiveness would be decreased, considering the absence of existing structures in the corridor

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 87 acres (53 percent) are potentially suitable sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. The magnitude of the effects from this alternative route on USFS-administered lands would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 100 acres (32 percent) are potentially suitable sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).The presence of a transmission line, particularly where similar facilities did not exist before, would decrease habitat effectiveness if sage-grouse were to move into the area.

USFS-administered lands, 74 acres (27 percent), are potentially suitable sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 97 acres (45 percent) are potentially suitable sage-grouse habitat.

Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 93 acres (46 percent) are potentially suitable sage-grouse habitat. Less than 1 percent of the available habitat within 4 miles of the Project centerline on USFS-administered lands would be affected by the Project (Table 21).

Disturbance to potential sage-grouse habitat could occur as a result of the proposed activities, but effects on individual sage-grouse are unlikely as there are no recorded occurrences of the birds in the area and sage-grouse are not known to occupy the habitats affected on the Forest. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not result in a loss of viability on the Dixie and Fishlake National Forests or cause a trend toward federal listing of the greater sage-grouse.

4.1.5.6 Peregrine Falcon (*Falco peregrinus anatum*)

Effects

The potential extent of grassland and riparian habitat affected by each alternative route in the Dixie and Fishlake National Forests where the peregrine falcon could forage is presented in Table 22.

TABLE 22
SUMMARY OF EFFECTS ON PEREGRINE FALCON HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	58	38	18	32	25	20	20
Total ground disturbance on Forest	447	328	165	317	275	214	202

TABLE 22 SUMMARY OF EFFECTS ON PEREGRINE FALCON HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance within the Cumulative Effects Analysis Area	154 or 150	74 or 95	61	73 or 99	57	59	60
Potentially suitable habitat within the Cumulative Effects Analysis Area	30,907 or 27,464	13,820 or 18,312	12,679	14,405 or 19,531	12,396	12,640	12,658
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.							

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 58 acres (13 percent) are potentially suitable peregrine falcon foraging habitat. Approximately 2 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 22).

Disturbance to foraging falcons could occur as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. Potential for mortality to falcons from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. If the known or additional falcon nesting sites are found within the Project area during pre-construction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS of the EIS). In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor as a result of existing interstate highways, transmission line, livestock grazing, and frequent human presence. If peregrine falcons nest and forage along the study corridor, they are likely already habituated to noise and human presence. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands 38 acres (12 percent) are potentially suitable peregrine falcon foraging habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 22).

Although potentially suitable cliff nesting habitat was not identified by the GIS model for this analysis, Pinto Creek is potentially suitable foraging habitat for peregrine falcons. However, suitable cliff nesting habitat does not exist near the project area, and it is unlikely that peregrine falcons would forage in the area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by

implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). If the areas are used by peregrine falcons, habitat effectiveness would be decreased due to the presence of transmission structures paralleling Pinto Creek and the high potential for collision.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 18 acres (11 percent) are potentially suitable peregrine falcon foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 22). Approximately 18 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging peregrine falcons (Table 4).

Disturbance to foraging falcons could occur on the Forest as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). In addition, the magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 32 acres (10 percent) are potentially suitable peregrine falcon foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 22). Approximately 32 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging peregrine falcons (Table 4).

Disturbance to foraging falcons could occur on the Forest as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). Habitat effectiveness would be decreased, but only slightly considering the low likelihood of use by peregrine falcons.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 25 acres (9 percent) are potentially suitable peregrine falcon foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 22). Approximately 25 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging peregrine falcons (Table 4).

Disturbance to foraging falcons could occur on the Forest as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and

avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 20 acres (9 percent) are potentially suitable peregrine falcon foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 22). Approximately 20 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging peregrine falcons (Table 4).

Disturbance to foraging falcons could occur on the Forest as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 20 acres (10 percent) is potentially suitable peregrine falcon foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 22). Approximately 20 acres of riparian habitat would incur right-of-way clearing on the Forest, decreasing potential habitat effectiveness for foraging peregrine falcons (Table 4).

Disturbance to foraging falcons could occur on the Forest as a result of the proposed activities, but is unlikely as habitat is extremely limited in the Project area and there is abundant available foraging habitat within the cumulative effects analysis area. If falcon nesting sites are found within the Project area during preconstruction raptor nest surveys, disturbance to nesting falcons would be reduced by implementing timing restrictions (Romin and Muck 2002) and avoidance buffers for 1.0 mile around nest sites (Table 2-5 of the EIS). The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not result in a loss of viability on the Dixie and Fishlake National Forests, or cause a trend toward federal listing of peregrine falcon.

4.1.5.7 Elsinore Buckwheat (*Eriogonum batemanii* var*. ostlundii*)

Effects

Potential effects on sensitive plant species (including Elsinore buckwheat) and measures to reduce these impacts are described in Section 4.1 of this analysis. Of approximately 16,200 individual plants detected, within 175 feet of the reference centerline, during preliminary surveys (EPG 2011a), an estimated 5,800 individuals could occur in the potential transmission line right-of-way. This estimate is based on the assumption that plants are evenly distributed within the polygons of occupied habitat mapped by surveyors in the field. Ground disturbance resulting from roads and tower work areas would only occur in a small portion of the potential right-of-way.

Prior to construction, surveys of all access roads, work areas, and tower sites would be conducted in areas where known populations of USFS-sensitive plants or suitable habitats occur. Based on the results of the surveys and in coordination with USFS botanists, appropriate measures to reduce potential impacts of construction and maintenance would be identified to avoid sensitive species or habitat (e.g. judicious location of access roads and/or placement of towers) to the extent practicable.

Selective Mitigation Measure 2 (Table 3-3), avoiding disturbance to sensitive resources, would reduce loss and degradation of vegetation and sensitive plant and wildlife habitat. Spanning and avoiding sensitive plant populations in specified areas would reduce impacts on sensitive plant populations by avoiding loss of individual plants. Spanning in such areas also would avoid disturbing the soils, geology, hydrology, and vegetative communities that provide the habitat for these species.

In some cases, additional species- and location-specific measures may be developed and implemented to reduce impacts on species where individual sensitive plants and/or habitat are located within the proposed right-of-way. However, all occurrences of special status plants and their habitat may not be avoided. If all sensitive plants and/or habitat cannot be avoided, USFS botanists would evaluate the utility and effectiveness of potential site-specific measures, including but not limited to soil and seed banking, seed collection, and/or specific reclamation techniques.

Summary

Presently, there are five quarter sections with known occurrences on the Richfield Ranger District, seven quarter sections with known occurrences on the Fillmore Ranger District, and three quarter sections with known occurrences on the Beaver Ranger District of the Fishlake National Forest. Large, previously unknown populations of Elsinore buckwheat were located during 2011 surveys (EPG 2011a). Results of these surveys are consistent with Clark's (2005) observation that unrecorded populations of Elsinore buckwheat are likely to exist. Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals and suitable habitat detected in and around the proposed right-of-way, but would not result in a loss of viability on the Fishlake National Forest, or cause a trend toward federal listing of Elsinore buckwheat.

4.1.5.8 Sevier Townsendia (*Townsendia jonesii* var*. lutea*), Fishlake National Forest

Effects

Potential effects on vegetation are summarized in Section 4.1 of this analysis and potential effects on sensitive plant species (including Sevier townsendia) and measures to reduce these impacts are described in Section 3.1 of the EIS. It is unlikely that construction, operation, and maintenance of the Project would affect Sevier townsendia; neither suitable habitat nor individuals of the species were detected during surveys in 2011.

Summary

Sevier townsendia is currently present in seven quarter sections on Richfield Ranger District and two quarter sections on the Fillmore Ranger District of the Fishlake National Forest. Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not result in a loss of viability on the Fishlake National Forest or cause a trend toward federal listing of Sevier townsendia.

4.1.5.9 Ward's Beardtongue (*Penstemon wardii*), Fishlake National Forest

Effects

Potential effects on sensitive plant species (including Ward's beardtongue) and measures to reduce these impacts are described in Section 4.1. Of the approximately 850 individual plants detected, within 175 feet of the reference centerline, in preliminary surveys an estimated 243 individuals could occur in the acres of right-of-way clearing area (EPG 2011a). This estimate is based on the assumption that plants are evenly distributed within the survey area and the entire right-of-way incurring disturbance when only a portion would be disturbed.

Prior to construction, surveys of all access roads, work areas, and tower sites would be conducted in areas where known populations of USFS-sensitive plants or suitable habitats occur. Based on the results of the surveys and in coordination with USFS botanists, appropriate measures to reduce potential impacts of construction and maintenance would be identified to avoid sensitive species or habitat (e.g. judicious location of access roads and/or placement of towers) to the extent practicable.

Selective Mitigation Measure 2 (Table 3-3), avoiding disturbance to sensitive resources, would reduce loss and degradation of vegetation and sensitive plant and wildlife habitat. Spanning and avoiding sensitive plant populations in specified areas would reduce impacts on sensitive plant populations by avoiding loss of individual plants. Spanning in such areas also would avoid disturbing the soils, geology, hydrology, and vegetative communities that provide the habitat for these species.

In some cases, additional species- and location-specific measures may be developed and implemented to reduce impacts on species where individual sensitive plants and/or habitat are located within the proposed right-of-way. However, all occurrences of special status plants and their habitat may not be avoided. If all sensitive plants and/or habitat cannot be avoided, USFS botanists would evaluate the utility and effectiveness of potential site-specific measures,

including but not limited to soil and seed banking, seed collection, and/or specific reclamation techniques.

Summary

Ward's beardtongue is currently present in all Districts of the Fishlake National Forest and appears to be in a downward population trend as of 2005 (Groebner 2005). Construction, operation, and maintenance of the Project along any of the alternative routes may impact a fraction of the individuals detected in and around the right-of-way, but would not result in a loss of viability on the Fishlake National Forests, or cause a trend toward federal listing of Ward's beardtongue.

4.1.5.10 Pinyon Penstemon (*Penstemon pinorum*), Dixie National Forest

Effects

With the exception of Alternative S4, it is unlikely that construction, operation, or maintenance of the Project would affect this species on USFS administered lands, as preliminary surveys for pinyon penstemon within 175 feet of all the reference centerlines on the Dixie National Forest did not detect the plant. However, potentially suitable habitat was identified on USFS-administered lands along Alternative S4 (EPG 2011a).

Prior to construction, surveys of all access roads, work areas, and tower sites would be conducted in areas where known populations of USFS-sensitive plants or suitable habitats occur. Based on the results of the surveys and in coordination with USFS botanists, appropriate measures to reduce potential impacts of construction and maintenance would be identified to avoid sensitive species or habitat (e.g. judicious location of access roads and/or placement of towers) to the extent practicable.

Selective Mitigation Measure 2 (Table 3-3), avoiding disturbance to sensitive resources, would reduce loss and degradation of vegetation and sensitive plant and wildlife habitat. Spanning and avoiding sensitive plant populations in specified areas would reduce impacts on sensitive plant populations by avoiding loss of individual plants. Spanning in such areas also would avoid disturbing the soils, geology, hydrology, and vegetative communities that provide the habitat for these species.

In some cases, additional species- and location-specific measures may be developed and implemented to reduce impacts on species where individual sensitive plants and/or habitat are located within the proposed right-of-way. However, all occurrences of special status plants and their habitat may not be avoided. If all sensitive plants and/or habitat cannot be avoided, USFS botanists would evaluate the utility and effectiveness of potential site-specific measures, including but not limited to soil and seed banking, seed collection, and/or specific reclamation techniques.

Summary

Construction, operation, and maintenance of the Project along alternative route S4 may impact potentially suitable pinyon penstemon habitat on the Dixie National Forest, but would not result in a loss of viability on the Forest, or cause a trend toward federal listing of pinyon penstemon.

4.1.6 Threatened and Endangered Species

4.1.6.1 California Condor (*Gymnogyps californianus*), Endangered/ Experimental

Effects

The potential extent of barren, grassland, and pinyon-juniper habitats affected by each alternative route in the Dixie and Fishlake National Forests where the California condor could forage are presented in Table 23.

TABLE 23
SUMMARY OF EFFECTS ON CALIFORNIA CONDOR HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	214	175	46	145	163	82	75
Total ground disturbance on Forest	447	328	165	317	275	214.	202
Potentially suitable habitat disturbance within the Cumulative Effects Analysis Area	246 or 334	215 or 283	111	220 or 303	221	151	146
Potentially suitable habitat within the Cumulative Effects Analysis Area	94,623 or 125,929	90,617 or 110,257	60,760	64,959 or 88,027	61,992	61,965	61,724

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 214 acres (48 percent) could potentially provide foraging habitat for condors. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 23). Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are not currently known to forage, roost, or nest within the study corridor on the Fishlake National Forest. If they did occur incidentally in the area, condors would likely avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis areas.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 175 acres (54 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors most likely may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 46 acres (28 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 145 acres (46 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly when considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 163 acres (59 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar, as they would share similar corridors when crossing the Dixie National

Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 82 acres (38 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 75 acres (37 percent) are potentially suitable California condor foraging habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 23).

Disturbance to foraging condors could occur as a result of the proposed activities, but is unlikely as condors are only incidentally found on the Dixie National Forest. Condors may avoid areas where Project activities were occurring, and there is available foraging habitat within the remaining cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes may impact individuals, but would not likely adversely affect the California condor.

4.1.7 Migratory Bird Species

4.1.7.1 Burrowing Owl (Athene cunicularia hypugea)

Natural History

The burrowing owl occurs primarily in vegetated grassland, sagebrush, and desert shrub communities as well as agricultural fields throughout Utah. Natural burrows constructed by prairie dogs, ground squirrels, and badgers, as well as man-made structures and culverts, are habitat used by the burrowing owl.

Status

This owl species is ranked by the NatureServe database as “vulnerable” in Utah (NatureServe 2012).

Trends

The burrowing owl populations are relatively stable with an increasing trend between 1999 and 2009, according to Breeding Bird Survey data for North America (NatureServe 2012).

Threats

The main threats to burrowing owl populations are habitat loss, degradation, and fragmentation. Eradication of prairie dogs and other burrowing animals has decreased habitat availability along with the conversion of rangeland to irrigated agricultural and suburban lands. Other threats include increased mortality due to predation, contamination, and loss of native grassland and shrub-steppe plant communities (NatureServe 2012).

Effects

The potential extent of grassland, sagebrush, and desert shrub habitat affected by each alternative route on the Dixie and Fishlake National Forests where the burrowing owl potentially could breed and forage is presented in Table 24.

TABLE 24
SUMMARY OF EFFECTS ON BURROWING OWL HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	131	102	87	103	74	97	93
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	484 or 652	398 or 424	476	309 or 446	405	459	453
Total habitat within the cumulative effects analysis area	51,132 or 71,712	38,674 or 40,991	44,678	45,113 or 46,644	40,946	42,997	43,566

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 131 acres (29 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. Of the estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (31 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 87 acres (53 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 103 acres (33 percent) are potentially suitable burrowing owl habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 74 acres (27 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found. The magnitude of the effects of Alternative S2 and S4 would be similar as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 97 acres (45 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 93 acres (46 percent) are potentially suitable burrowing owl habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 24).

Disturbance to burrowing owls could occur as a result of the proposed activities, but is unlikely as there are no recorded occurrences of burrowing owls in the area. Surveys would be conducted in potentially suitable habitat prior to construction, and avoidance and monitoring would be used to develop recommendations for mitigating adverse effects if burrowing owls are found. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely impact burrowing owls on either the Dixie or Fishlake National Forest.

4.1.7.2 Black-throated Gray Warbler (*Dendroica nigrescens*)

Natural History

The black-throated gray warbler breeds and nests in oak, mountain mahogany, and pinyon-juniper woodlands and also is known to use lowland riparian and mountain shrub habitats for foraging and during migration throughout Utah.

Status

The black-throated gray warbler is ranked by the NatureServe database as “apparently secure” in Utah (NatureServe 2012).

Trends

The black-throated gray warbler populations are relatively stable with an increasing trend between 1966 and 1996 range-wide, and local negative trends in eastern Utah, according to Breeding Bird Survey data for North America (NatureServe 2012).

Threats

Threats to the black-throated gray warbler include timber harvest, grazing, predation, and brood parasitism (NatureServe 2012). Primarily, the loss of late successional forests and subsequent loss of primary nesting habitat through timber harvest is likely to have negative impacts on local populations of this warbler species.

Effects

The potential extent of riparian, pinyon-juniper and mountain shrub habitat affected by each alternative route in the Dixie and Fishlake National Forests where the black-throated gray warbler potentially could breed and forage is presented in Table 25.

TABLE 25
SUMMARY OF EFFECTS ON BLACK-THROATED GRAY WARBLER HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	253	219	73	198	194	109	102
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	227 or 316	218 or 278	109	236 or 313	217	147	143

TABLE 25 SUMMARY OF EFFECTS ON BLACK-THROATED GRAY WARBLER HABITAT							
	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
Habitat Type	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat within the cumulative effects analysis area	15,082 or 19,504	15,103 or 18,728	8,206	13,954 or 18,558	11,271	9,668	9,125
NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.							

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 253 acres (57 percent) are potentially suitable black-throated gray warbler habitat. Approximately 2 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 25). Approximately 317 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential nesting habitat availability for the black-throated gray warbler (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. An estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 219 acres (67 percent) are potentially suitable black-throated gray warbler habitat. Approximately 1 to 2 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 25).Approximately 248 acres of pinyon-juniper, 10 acres of mountain shrub, and 38 acres of riparian habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 73 acres (44 percent) are potentially suitable black-throated gray warbler habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 25). Approximately 74 acres of pinyon-juniper, 18 acres of riparian, and 13 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (0.5 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 198 acres (62 percent) are potentially suitable black-throated gray warbler habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 25).Approximately 208 acres of pinyon-juniper, 32 acres of riparian, 31 acres of mountain shrub, and 4 acres of aspen habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 194 acres (71 percent) are potentially suitable black-throated gray warbler habitat. Approximately 2 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 25). Approximately 213 acres of pinyon-juniper, 25 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 alternative routes would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 109 acres (51 percent) are potentially suitable black-throated gray

warbler habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 25). Approximately 131 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 102 acres (50 percent) are potentially suitable black-throated gray warbler habitat. Approximately 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 25). Approximately 125 acres of pinyon-juniper, 20 acres of riparian, and 10 acres of mountain shrub habitats would incur right-of-way clearing on the Forest, decreasing potential gray warbler nesting habitat availability (Table 4).

Disturbance to the species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely impact black-throated gray warblers on either the Dixie or Fishlake National Forest.

4.1.7.3 Ferruginous Hawk (*Buteo regalis*)

Natural History

The ferruginous hawk nests in trees and large shrubs on benches, on the ground, and on man-made structures in grassland, desert shrub, sagebrush, and pinyon-juniper habitats. This hawk occurs primarily in open grasslands and sagebrush communities where small mammal prey items are available.

Status

The ferruginous hawk is ranked by the NatureServe database as “imperiled” in Utah (NatureServe 2012) and is likely to breed and forage along the alternative routes.

Trends

The ferruginous hawk populations are relatively stable with an increasing range-wide trend, and some local negative trends according to 1966 and 1989 Breeding Bird Survey data for North America (NatureServe 2012).

Threats

The main threats to the ferruginous hawk population are habitat loss and human disturbance (NatureServe 2012). Loss of native grasslands and sagebrush communities due to invasion of exotic grasses may disrupt historic foraging strategies. Increased human activity in ferruginous hawk habitat can lead to nest abandonment, lower prey abundance, and indirect poisoning through rodent prey base.

Effects

The potential extent of grassland, desert shrub, sage brush, and pinyon-juniper habitat affected by each alternative route in the Dixie and Fishlake National Forests where the ferruginous hawk potentially could breed and forage is presented in Table 26.

TABLE 26
SUMMARY OF EFFECTS ON FERRUGINOUS HAWK HABITAT

Habitat Type	Fishlake National Forest Alternative Routes (acres)	Dixie National Forest Alternative Routes (acres)					
	N1 to N6	S1 and S5	S2	S3 and S6	S4	S7	S7-A
Potentially suitable habitat disturbance on Forest	329	278	133	245	236	179	168
Total ground disturbance on Forest	447	328	165	317	275	214	202
Potentially suitable habitat disturbance within the cumulative effects analysis area	707 or 876	628 or 662	573	591 or 652	615	599	588
Potentially suitable habitat within the cumulative effects analysis area	195,690 or 228,527	164,628 or 173,443	143,633	156,337 or 170,540	143,565	145,192	144,973

NOTE: Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

Northern Alternative Routes

Of the estimated 447 acres that would be disturbed by Project activities on USFS-administered lands, 329 acres (74 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 26). Approximately 317 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. In addition, the magnitude of the effects from the northern alternative routes would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from existing interstate highways, transmission line, livestock grazing, and agricultural and energy developments. Habitat effectiveness would be decreased, but only slightly when considering the existing disturbance and habitat modification.

Southern Alternative Routes

Alternatives S1 and S5. An estimated 328 acres that would be disturbed by Project activities on USFS-administered lands, 278 acres (85 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 26). Approximately 248 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S2. Of the estimated 165 acres that would be disturbed by Project activities on USFS-administered lands, 133 acres (81 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 26). Approximately 74 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and

avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects from this alternative route would be minimized as the current effectiveness of habitats is diminished in and adjacent to the study corridor resulting from the existing highway, pipelines, transmission lines, private land development, and livestock grazing. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternatives S3 and S6. Of the estimated 317 acres that would be disturbed by Project activities on USFS-administered lands, 245 acres (77 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis areas would be affected by the Project (Table 26). Approximately 208 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. Habitat effectiveness would be decreased, but only slightly considering the abundance of remaining suitable habitat within the cumulative effects analysis area.

Alternative S4. Of the estimated 275 acres that would be disturbed by Project activities on USFS-administered lands, 236 acres (86 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 26). Approximately 213 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S4 would be similar as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7. Of the estimated 214 acres that would be disturbed by Project activities on USFS-administered lands, 179 acres (83 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 26). Approximately 131 acres of pinyon-juniper habitat

would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7 would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Alternative S7-A. Of the estimated 202 acres that would be disturbed by Project activities on USFS-administered lands, 168 acres (83 percent) are potentially suitable ferruginous hawk habitat. Less than 1 percent of the available habitat within the cumulative effects analysis area would be affected by the Project (Table 26). Approximately 125 acres of pinyon-juniper habitat would incur right-of-way clearing on the Forest, decreasing potential ferruginous hawk nesting and foraging habitat availability (Table 4).

Disturbance to these species could occur on the Forest as a result of the proposed activities, but the likelihood of such disturbance would be reduced by implementing timing restrictions and avoidance buffers during nesting season (Table 2-5 of the EIS). Potential for mortality to ferruginous hawks from electrocution and collision with the transmission structures will be reduced by implementing the design features for raptor safety found in Table 2-6 of the EIS. Loss of habitat in the cumulative effects analysis area would be minimal (1 percent) and abundant available habitat remains within the cumulative effects analysis area. The magnitude of the effects of Alternatives S2 and S7-A would be similar, as they would share similar corridors when crossing the Dixie National Forest. Habitat effectiveness within this corridor would be decreased least among alternatives when considering the higher level of existing disturbance and habitat modification.

Summary

Construction, operation, and maintenance of the Project along any of the alternative routes would not adversely impact ferruginous hawks on either the Dixie or Fishlake National Forest.

5.0 Summary of Determination of Effects

5.1 Northern Alternative Routes

5.1.1 Alternatives N1 and N6

All northern alternative routes use the same corridor on the Fishlake National Forest and would have the same effects on MIS, sensitive species, and other species of concern. Given the

existing level of disturbance and habitat modification present in the corridor, implementation of the proposed action would slightly decrease habitat effectiveness for the species analyzed.

5.2 Southern Alternative Routes

5.2.1 Alternatives S1 and S5

Either alternative would incrementally decrease habitat effectiveness due to the undisturbed nature and potentially suitable habitat types of the area. Habitat effectiveness would be decreased most among alternatives for bald eagle, as the area is known winter foraging habitat.

5.2.2 Alternative S2, S4, S7, S7-A

Given the existing level of disturbance and habitat modification present in the corridor, habitat effectiveness would be decreased least among southern alternatives. S4 may impact potentially suitable pinyon penstemon habitat.

5.2.3 Alternatives S3 and S6

Implementation of either alternative would incrementally decrease habitat effectiveness due to the undisturbed nature and potentially suitable habitat types of the area.

6.0 Compliance with Forest Plans and Other Laws and Regulations

6.1 Land and Resource Management Plans Consistency Determination

Based on this analysis, construction, operation, and maintenance along any of the alternative routes would be consistent with the Dixie and Fishlake National Forests LRMPs, as amended (USFS 1986a; 1986b). Refer to Forest Plan compliance in the Project record.

6.2 Endangered Species Act

The Endangered Species Act (16 United States Code 1531 - 1544), as amended, provides broad protection for species of fish, wildlife, and plants listed as threatened or endangered by the FWS. All federal agencies—in consultation with and with the assistance of the FWS—must ensure any action authorized, funded, or carried out by federal agency is not likely to jeopardize the continued existence of an endangered, threatened, or proposed listed species, or result in destruction or adverse modification of a species' critical habitat. Implementation of any action alternative would not result in adverse impacts on any endangered, threatened, or proposed species. No critical habitat for any listed species would be adversely affected with implementation of any of the action alternatives.

6.3 Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and Executive Order 13186

Executive Order 13186, signed January 10, 2001, directs federal agencies to protect migratory birds by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practical, adverse impacts on migratory birds' resources when conducting agency actions. Executive Order 13186 directs agencies to further comply with the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and other pertinent statutes. This analysis is compliant with the National Memorandum of Understanding between the USFS and the FWS to promote the conservation of migratory birds (USFS 2008). In addition, the Dixie and Fishlake National Forests are compliant with the letter of understanding to the FWS Utah Field Office (USFS 2007) concerning compliance with Migratory Bird Treaty Act and Executive Order 13186.

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Appendix F – Compliance with WO IM 2012-043 Greater Sage-Grouse Interim Management Policies and Procedures

APPENDIX F – COMPLIANCE WITH WO IM 2012-043 GREATER SAGE-GROUSE INTERIM MANAGEMENT POLICIES AND PROCEDURES

F.1 Introduction

This appendix documents the additional analysis of potential effects of the Sigurd to Red Butte No. 2 – 345-kilovolt (kV) Transmission Line Project (Project) on greater sage-grouse (*Centrocercus urophasianus*) and commitments made by, PacifiCorp (doing business as Rocky Mountain Power, the Proponent) to compensatory mitigation efforts to offset these effects. This analysis and commitment of compensatory mitigation was conducted to demonstrate compliance with Bureau of Land Management (BLM) Instruction Memorandum (IM) No. 2012-043.

In December 2008, PacifiCorp submitted an application to the BLM and U.S. Forest Service (USFS) for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299) to construct, operate, and maintain the proposed Project.

Impacts on greater sage-grouse and loss of sage-grouse habitat were identified as issues by both the agencies and public during scoping in March 2010. The extent of sage-grouse habitat crossed by potential routes and resulting direct and indirect impacts on sage-grouse were issues considered during the development of alternative routes for the Project. Routes that met the Proponent's purpose and need and avoided all areas identified by the Utah Division of Wildlife Resources (UDWR) as sage-grouse habitat were not considered feasible because of the location and extent UDWR mapped sage-grouse habitat, and therefore were not considered as alternatives in the Environmental Impact Statement (EIS). BLM's general direction at the time of alternatives development for the Project was to colocate potential rights-of-way in existing West-wide Energy corridors. Alternatives that would locate the transmission line within West-wide Energy corridors were considered as alternatives in the EIS. Revisions to the UDWR mapped sage-grouse habitat since scoping has greatly reduced the amount of sage-grouse habitat present in the Project Area.

During the preparation of the EIS, changes in management and existing knowledge of sage-grouse in the Project area have affected the analysis of impacts on sage-grouse and sage-grouse habitat. These changes include: (1) UDWR's revision of areas identified as sage-grouse occupied, crucial brood rearing, and crucial winter habitat in January, May, and September 2011; (2) the discovery of the Mud Springs lek in 2010; (3) the U.S. Fish and Wildlife Service's (FWS') 12-month findings on petitions to list sage-grouse as threatened or endangered in March 2010; and (4) BLM's issuance of Washington Office Instruction Memorandum (WO IM) 2012-043 in December 2011.

As a result of revisions of areas identified by UDWR as sage-grouse occupied, crucial brood rearing, and crucial winter habitat within the Project area, the location and extent of sage-grouse habitats crossed by the alternative routes considered in the EIS have changed since scoping was initiated in 2010. UDWR revisions to habitat layers have removed designated sage-grouse habitat in the vicinity of the Mineral Mountains that was crossed by all alternative routes considered in the EIS. Sagebrush supporting sage-grouse populations in these areas were lost to several wildfires, including the Milford Flat wildfire in 2007. Sage-grouse use in the vicinity of the Mineral Mountains has not been documented since the 2007 fire and the agencies do not expect sage-grouse to return to these habitats for an extended period of time due to the intensity of the fire.

The UDWR revisions also added sage-grouse occupied, crucial brood-rearing, and crucial winter habitat in the vicinity of the Black Mountains and west to the Mud Springs Bench area in Iron County. These habitats are crossed by all alternative routes, including the Agency Preferred Alternative, and were not identified as sage-grouse habitat during scoping in 2010. Habitats identified by UDWR since scoping are the only sage-grouse habitats crossed by the Agency Preferred Alternative.

Alternative routes that would avoid sage-grouse habitat entirely—based on the most recent (September 2011) UDWR sage-grouse habitat layers—would require development of new alternative routes, re-initiation of public scoping, and would significantly delay the BLM's Record of Decision for the Project. Significant delays in the Record of Decision would not meet the Proponent's purpose and need for the Project to increase transmission capacity by the time the full-rated capacity of the existing southwestern Utah electrical system is expected to be exceeded in 2014. The Agency Preferred Alternative was selected based on several considerations, including potential impacts on sage-grouse. The Agency Preferred Alternative crosses the least amount of UDWR-designated sage-grouse habitat (11.7 miles), maintains the greatest separation between the Project and active leks, and is parallel to an existing high-voltage transmission line and within a designated utility corridor in areas where sage-grouse habitat is crossed.

Energy and infrastructure development were among the primary threats to the greater sage-grouse throughout its range evaluated by the FWS in the 12-month findings (75 *Federal Register* 1390-1404; March 23, 2010) on petitions to list the grouse under the Endangered Species Act of 1973, as amended. Direct habitat loss and fragmentation of important habitats by roads, pipelines, powerlines, noise, and direct human disturbance were impacts associated with energy development that were identified and evaluated in the 12-month findings.

On December 22, 2011, BLM issued WO IM 2012-043, which provides interim conservation policies and procedures for greater sage-grouse that are to be applied by BLM Field Offices to ongoing and proposed authorizations and activities. The purpose of the IM is to promote sustainable greater sage-grouse populations and conserve greater sage-grouse habitat while BLM develops and decides how to best incorporate long-term conservation measures for greater sage-grouse into applicable Land Use Plans. The IM policies and procedures apply to BLM actions within preliminary priority habitat and preliminary general habitat for greater sage-grouse, which will be identified by the state wildlife agencies. The IM prescribes specific procedures for pending and future right-of-way applications within preliminary priority habitat (i.e., those applications for which BLM has issued) or, within 90 days of the issuance of the IM, the BLM issues a Draft EIS or a Finding of No Significant Impact through an EIS or Environmental Assessment. The Notice of Availability for the Draft EIS for the Project was published on May 27, 2011, and therefore these procedures are applicable to the Project if the Project crosses preliminary priority habitat.

WO IM 2012-043 procedures for pending and future right-of-way applications within preliminary priority habitat require BLM to:

- Work with applicants to minimize habitat loss, fragmentation, and direct and indirect effects on greater sage-grouse and its habitat
- Determine, in coordination with the respective state wildlife agency, whether the proposed right-of-way would likely have more than minor adverse effects on the greater sage grouse and its habitat.

WO IM 2012-043 defines more than minor adverse effects on sage-grouse as "those effects that would not impact sage-grouse population sustainability." Additional guidance concerning thresholds of effects on greater sage-grouse and its habitat to be used in making a determination of more than minor adverse

effects has not been issued by BLM. WO IM 2012-043 directs BLM to coordinate with the respective state wildlife agency to determine whether proposed rights-of-way would likely have more than minor adverse effects to greater sage-grouse and its habitat.

To achieve compliance with WO IM 2012-043, the BLM Cedar City Field Office has conducted an analysis of potential impacts of the Agency Preferred Alternative for the Project on the greater sage-grouse population in the Bald Hills area of Iron County, Utah in coordination with the UDWR, the FWS, and the USFS. The approach, methods, and results of this analysis are described in this appendix.

F.2 Approach

Existing information regarding greater sage-grouse biology and the sage-grouse population that inhabits the Project area is presented and discussed in this section in relation to the methodology employed by the BLM for the analysis of the effects of the Project on the greater sage-grouse. The analysis focuses on the potential impacts of the Agency Preferred Alternative, which was identified as such in part due to consideration of the potential effects of each alternative route on sage-grouse. Other alternative routes would cross more sage-grouse habitat, would be located closer to active leks, and would not be adjacent to existing transmission lines or within designated West-wide Energy Corridors in mapped sage-grouse habitat. These alternatives would have a greater adverse impact on sage-grouse and sage-grouse habitat than the Agency Preferred Alternative.

WO IM 2012-043 directs the BLM to evaluate impacts on sage-grouse based on preliminary priority and preliminary general habitat, which are to be identified by state wildlife agencies. UDWR has not identified preliminary priority or preliminary general habitat at the time of this analysis. The State of Utah has initiated a statewide planning process to establish a sage-grouse regulatory mechanism that could be adopted by the FWS and BLM in place of the conservation measures identified in the IM. The schedule for establishment of this regulatory mechanism cannot be determined, and BLM was required to proceed with implementation of conservation policies and procedures defined in the IM to meet the schedule for the Final EIS and Record of Decision. Preliminary general habitat and preliminary priority habitat have not yet been identified in Utah and UDWR has indicated that the current (September 2011) sage-grouse habitat mapping is the best available information for use in impact assessment and conservation planning activities for sage-grouse. As a precautionary approach to the analysis, BLM conducted the analysis of potential impacts on sage-grouse for the Project using the assumption that all sage-grouse habitats in the Project area would be considered preliminary priority habitat.

F.2.1 Identification of the Greater Sage-grouse Population Potentially Affected by the Project

Sage-grouse are considered a landscape-scale species as populations generally inhabit and rely on large, interconnected expanses of sagebrush (Connelly et al. 2004). Connelly et al. (2003) suggest that habitat selection, and thereby the range used by a population, can generally be described hierarchically based on spatial scales of selection: (1) first-order selection, or the geographic range of the sage-grouse population of interest; (2) within this geographic range, second-order selection of habitats based on subpopulations (e.g., the grouse associated with a lek or lek complex); (3) third-order selection refines habitats used by subpopulations as seasonally selected habitats (e.g., nesting habitat); (4) fourth-order selection quantifies food and cover attributes at particular use sites. Johnson (1980:69) describes this hierarchical nature of selection as “a selection process will be of higher order than another if it is conditional upon the latter.” As an example, selection of food items would be of a higher order than the selection of a feeding site

because selection of a particular site determines the array of food items available to be selected. This analysis of potential effects of the Project on the greater sage-grouse focused on first, second, and third order habitat selection.

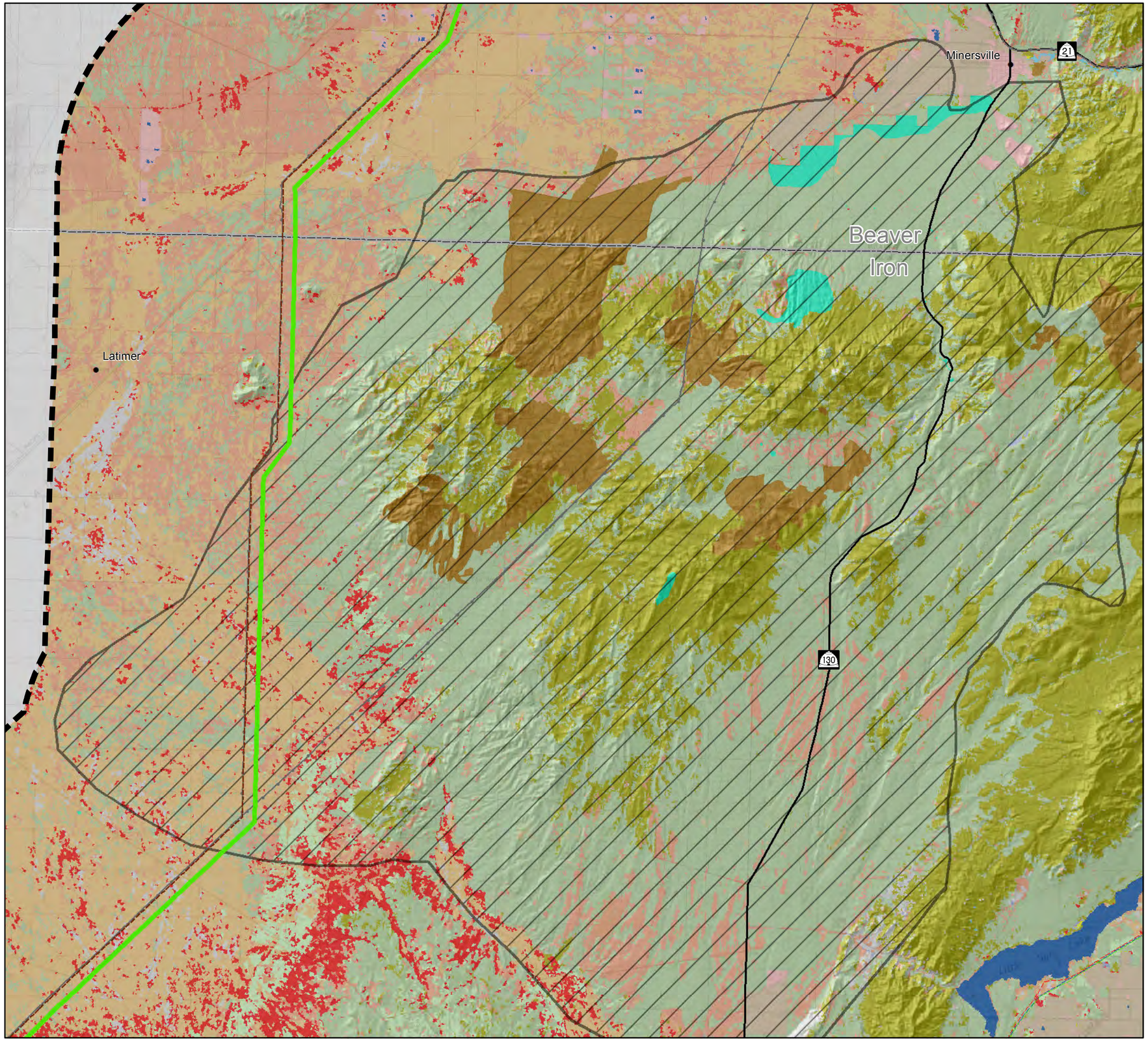
Mapping of seasonal sage-grouse ranges (first order selection) within the Project area was provided by the UDWR, and established that a potential spatial overlap existed between sage-grouse habitat and the area of potential effects for the Agency Preferred Alternative.

Locations of known leks associated with the occupied range in the Bald Hills were identified and used to establish the population to be addressed in this analysis. One known lek (Mud Springs Bench) is located within 4 miles of the preferred route establishing that third order selection of nesting and early brood-rearing habitats may be influenced by the transmission line. The majority of female sage-grouse breeding on a given lek would nest within 4 miles of the lek (Colorado Division of Wildlife 2008). Females generally rear their broods for the first 2 to 3 weeks in immediate vicinity of their nest (Berry and Eng 1985; Connelly 1982). Stand structure and food availability are characteristics most frequently associated with third order habitat selection by sage-grouse during the summer, with grouse seeking sites that maintain succulent vegetation throughout the summer (Autenrieth 1981; Aldridge and Brigham 2002; Fischer et al. 1997; Klebenow 1969; Neel 1980,). The lack of mesic habitats near and west of the Agency Preferred Alternative establishes that late brood-rearing/summering sage-grouse would not likely be affected by the Project due to the existing condition of the habitat.

Sage-grouse generally move to lower elevations with sagebrush exposed above the snow to winter, with populations often traveling 80 to 160 kilometers (50 to 100 miles) from summer habitats to winter ranges (Eng and Schladweiler 1972; Patterson 1952). Because of this capacity to move long distances to winter ranges, the fact that sage-grouse tend to be relatively flexible in their selection of habitats during the winter (Connelly et al. 2011), and observations by grazing permittees of sage-grouse use of low elevation crucial winter habitat mapped by the UDWR (Pontorolo 2012), this analysis considered that wintering sage-grouse may be influenced by the Project.

Site-specific radio-telemetry data are being developed by A. Cheyenne Burnett (Department of Wildland Resources; Utah State University). This work was initiated in January 2011 and a total of 63 grouse (17 hens and 46 males) had been captured and fitted with radio telemetry collars as of March 2012. Preliminary (January 2011-January 2012) relocation data for radio collared sage-grouse trapped at the five leks closest to the Agency Preferred Alternative for the Project were provided to BLM to support this analysis (Burnett 2011). As these data are preliminary, only general observations regarding sage-grouse movements and habitat use are possible. The preliminary data suggest that a portion of the Bald Hills sage-grouse population is one-stage migratory (Connelly et al. 2000) between breeding and summering habitats, with documented movements from lower elevation breeding habitats (Mud Springs Bench) to higher elevation summer habitats (Bald Hills), a distance of approximately 25 miles, and then back to lower elevations during the winter (Map F-1). These movements have generally been in northeast-southwest directions, and appear to be most pronounced from the lower-elevation leks. Preliminary telemetry studies have resulted in relocation of some males at more than one lek during the breeding season. Long-distance movements by hens from leks to nesting locations have not been detected to date, suggesting females are selecting nesting habitats (and thereby inherently selecting early brood-rearing habitats) spatially associated with leks.

In summary, currently available information from an ongoing investigation of sage-grouse in the Bald Hills and from the literature suggest that nesting, early brood-rearing, and wintering sage-grouse could be affected by the Project. A cursory inspection of the habitats near and especially west of the proposed route, as well as interactions with a local livestock permittee, support these conclusions. Robust sagebrush habitats are located west of the proposed route. Although a limited herbaceous understory in sagebrush



MAP F – 1
LOCATION OF GREATER SAGE-GROUSE HABITAT CROSSED BY THE AGENCY PREFERRED ALTERNATIVE

SAGE - GROUSE

- UDWR Sage-grouse Brooding Habitat (September 2011 Update)

GAP VEGETATION CLASSES

- Agriculture
- Alpine
- Aspen
- Barren/Sparsely Vegetated
- Big Sagebrush
- Bigtooth Maple
- Desert Shrub
- Disturbed
- Grassland
- Invasive
- Wildfire Impacted Areas/Reseeded through Emergency Stabilization and Rehabilitation Efforts
- Mixed Conifer
- Mountain Shrub
- Noxious
- Pinyon-juniper
- Ponderosa Pine
- Riparian
- Shrub Steppe
- Water
- Wetland

GENERAL REFERENCE FEATURES

- Project Study Area
- Agency Preferred Alternative
- County Boundary
- City
- Pipeline
- State Highway
- Railroad
- 500kV +/- DC Transmission Line
- 345kV Transmission Line
- 230 to 287kV Transmission Line
- 138 to 161kV Transmission Line

SOURCES:
Sage Grouse Brooding Areas: Utah Division of Wildlife Resources, 2011
Transportation: Streetmap 50K to 250K, 2008
Transmission Line: EPG, 2009
Pipeline: EPG, 2009
Land Jurisdiction: BLM State Office Utah 2008
POWERmap, powermap.platts.com
©2007 Platts, A Division of The McGraw-Hill Companies

0 1 2 4 Miles

October 2012 **Final EIS**

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION LINE

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stands west of this route would suggest these patches are low-quality nesting and early brood-rearing habitats (Connelly et al. 2011), the sagebrush appeared healthy and of sufficient height to provide quality winter habitat for the population. A local livestock producer (contacted on April 28, 2012) provided anecdotal information suggesting that areas west of the proposed route are used by wintering sage-grouse, but not by many grouse during the nesting/early brood-rearing seasons. Sage-grouse were seen periodically in the sagebrush stands west of the proposed route during the winter and early spring, but rarely if ever seen during the late spring and early summer. Sage-grouse habitats at higher elevations east of the Agency Preferred Alternative are characterized by more robust herbaceous understory that provides higher-quality nesting sites; these higher-quality conditions were noticed within 1 mile of the Agency Preferred Alternative.

F.2.2 Estimated Sage-grouse Population Size and Trend

The UDWR has been conducting lek counts in the Bald Hills during early morning hours of late February through mid-March since 1967. Lek count data from 11 leks at which grouse were observed during Spring 2012 were used to estimate the size of the Bald Hills greater sage-grouse population. Two these leks, the Jack Rabbit lek and the Little Horse Valley lek, were either new leks discovered in 2012 or historic leks where grouse were counted in 2012. Eight of these leks are more than 16 miles east of the preferred alternative and the Little Horse Valley lek is 11.7 miles east of the preferred alternative., The Minersville lek is located within 9 miles of the Mud Springs Bench lek, which was discovered in 2010 during grouse surveys for the Project, and is located approximately 3.7 miles from the preferred alternative.

Accurate predictions of the size of sage-grouse populations are typically not available and the use of lek counts to estimate population size provides a limited basis for such estimates. Lek counts are widely used to track trends in sage-grouse populations; however, concern regarding their usefulness has been expressed (Applegate 2000; Beck and Braun 1980; Walsh et al. 2004). Issues raised include (1) imprecise lek definitions, (2) the possibility that leks surveyed are not representative of the population, (3) inconsistency in following established lek count protocols across all or subsets of leks counted; and (4) inaccurate counts of the numbers of grouse using a lek (Johnson et al. 2011). However, lek counts are the most widely used method for tracking sage-grouse populations, and generally provide a reliable basis for inference regarding population trends at broader spatial scales (Connelly et al. 2003).

A general approach to estimating populations using lek counts is to assume the high male count for a lek represents 75 percent of the total number of males using the lek, and assume twice as many females as males in a population (Braun 1998). Using this approach and lek count information provided by the UDWR, an estimate of the 2011 Bald Hills population of approximately 450 total sage-grouse (118 total males counted during 2012 on 11 known leks) was computed.

Using UDWR provided lek count information (maximum number of males per lek counted annually) for seven known leks counted consistently between 2008 and 2011, trends in the Bald Hills sage-grouse population over the last four years were evaluated. Trend lines of annual counts through time were generated for each lek, and population trends were established as the average slope of these trend lines. Additionally, leks were categorized as increasing, decreasing or remaining stable (e.g., 2011 male counts within one male of 2008 counts), and the proportion of leks increasing or remaining stable was used to establish another metric of population trend. The average slope of trend lines was 1.4 (e.g., leks on average increased by 1.4 males counted annually) and 57 percent (4 of 7) of leks had male counts that increased or remained essentially stable. One lek (Jeff Poorman-Bald Hills) increased dramatically between 2008 and 2011 (from 4 to 36 males); removing the slope generated for this lek (10.2) from

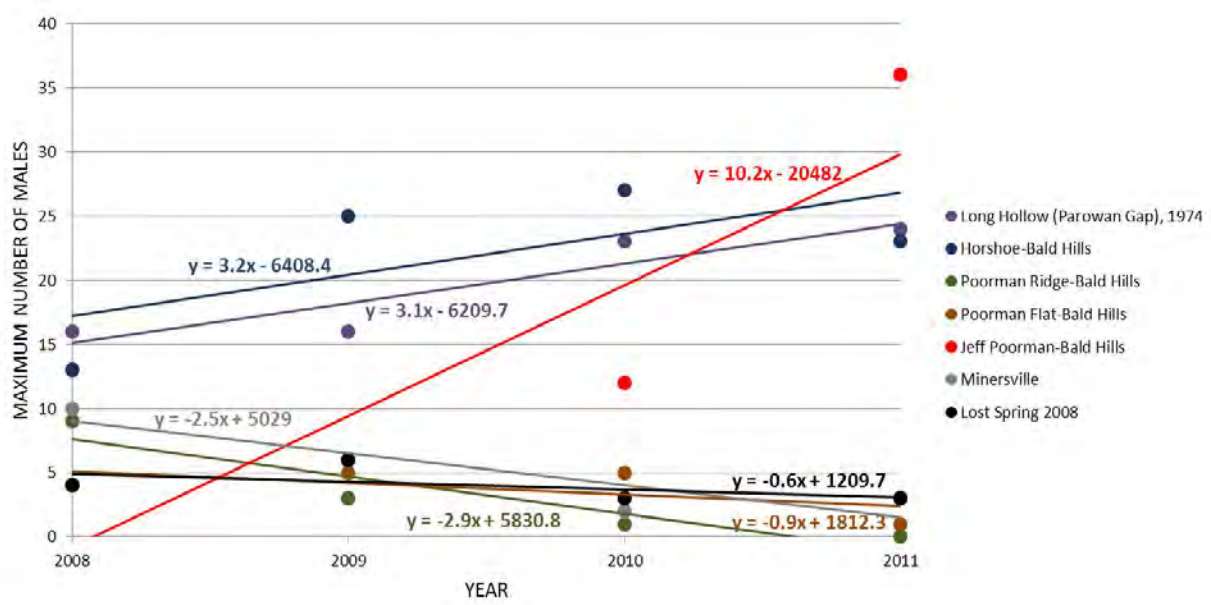
consideration dropped the average slope of trend lines to -0.1. The Jeff Poorman-Bald Hills lek is on the edge of the 2007 Greenville Bench Wildfire which destroyed two nearby leks. This may account for the dramatic increase in male grouse observed at the Jeff Poorman-Bald Hills lek. Thus, the Bald Hills sage-grouse population appears to have at the least remained stable, if not increased between 2008 and 2011. However, based on counts from two leks with available long-term data (Minersville and Long Hollow [Parowan Gap] 1974), the Bald Hills sage-grouse population could be characterized in general as declining since the late 1980s.

Table F-1 summarizes the sage-grouse lek count trends from 2008 to 2011 for the Bald Hills, Utah, population. Lek counts were provided by the UDWR and represent the maximum number of males counted during three early on during lek counts each year from late February through mid-April. Population trend lines (Figure F-1) were generated for leks for which 4 years of data exist and represent a simple linear relationship over the 2008 to 2011 period.

TABLE F-1
SAGE-GROUSE LEK COUNTS FROM 2008 TO 2011 FOR BALD HILLS, UTAH, POPULATION

Lek Name	2008	2009	2010	2011	Slope (Trend Line)	Direction (Trend Line)[1]
Long Hollow (Parowan Gap), 1974	16	16	23	24	3.1	Positive
Horseshoe-Bald Hills	13	25	27	23	3.2	Positive
Poorman Ridge-Bald Hills	9	3	1	0	-2.9	Negative
Poorman Flat-Bald Hills	4	5	5	1	-0.9	Negative
Jeff Poorman-Bald Hills	4	6	12	36	10.2	Positive
Mud Springs Bench, 2010	–	–	14	18	–	Not applicable
Minersville	10	6	2	3	-2.5	Negative
Lost Spring 2008	4	6	3	3	-0.6	Stable
North Long Hollow, 2011	–	–	–	10	–	Not Applicable

SOURCE: Utah Division of Wildlife Resources 2012
NOTE: [1]Establishes the direction of lek count trends through time as Positive (e.g., slope trending upwards), Negative (e.g., slope trending downwards), or Stable (e.g., 2011 male counts within 1 male of 2008 counts)



SOURCE: Utah Division of Wildlife Resources 2012

Figure F-1 Sage-grouse Lek Count Trends from 2008 to 2011 for Bald Hills, Utah, Population

F.2.3 Evaluation of Potential Project Effects on Greater Sage-grouse

Research regarding the response of sage-grouse to transmission lines and the potential effect of transmission lines on sage-grouse demography is inconclusive. The mean number of strutting males declined 72 percent and an alteration in daily dispersal patterns of males from the lek during the breeding season occurred within two years of the construction of transmission line structures located within 200 meters of an active sage-grouse lek and between the lek and male day use areas in northeastern Utah (Ellis 1985); however, sample sizes in this study were small. Braun (1998), citing unpublished data, suggested that sage-grouse avoid habitats within 1 kilometer (0.62 mile) of transmission lines. Lesser prairie-chickens avoid transmission lines in general and when nesting (Hagen 2003; Pitman et al. 2005). Contrastingly, Johnson et al. (2011) reported no relationship between distance to nearest transmission line and the length of transmission line within 5 to18 kilometers (3 to 11 miles) of leks and lek count trends; but, population-level reactions to transmission lines may have occurred prior to the period of study (1997 to 2007).

It is generally believed that sage-grouse avoid vertical structures (including trees) presumably to avoid predation by raptors (Connelly et al. 2004). It is unknown if impacts on sage-grouse populations (e.g., reduced use of habitats closely associated with vertical structure) result from avoidance or increased interactions with predators (Stahlecker 1978), but the installation of raptor perch deterrents may decrease (but not eliminate) raptor and common raven use of these structures (Lammers and Collopy 2007; Prather and Messmer 2010; Slater and Smith 2008). Raptors and ravens have been observed perching on transmission towers with anti-perching devices installed on them (PacifiCorp, unpublished data, Prather and Messmer 2010, Lammers and Collopy 2007, Slater and Smith 2008). Perch deterrents may not mitigate effects of transmission lines if raptors and ravens are able to overcome perch deterrent devices, or if sage-grouse population declines result from avoidance of vertical structure rather than as a result of increased predation in response to changes in avian predator distributions.

F.2.4 Evaluation of Potential Adverse Effects of the Project Relative to the Minor Adverse Effects Criterion Established in WO IM 2012-043

To establish that a project would have “more than minor adverse effects” on a sage-grouse population, the effects of the project must be demonstrated to negatively influence population growth. Impacts on population growth may occur indirectly if a project results in the functional elimination of critical habitats which lead to declines in survival and productivity. Direct effects of a project may also occur if effects of the project lead to reduced survival (e.g., collisions or increased depredation of adults) or productivity (e.g., increased depredation of nests and chicks). A high-voltage overhead transmission line has the potential to influence sage-grouse both directly and indirectly as the line may result in avoidance of habitats relatively near the line. The infrastructure associated with the line may influence predator distributions, resulting in increased nest, chick, and adult depredation of sage-grouse hens selecting habitats relatively near the line.

To determine if the proposed Project would have more than minor adverse effects on sage-grouse and its habitat, the potential effects of transmission line construction, operation, and maintenance must be evaluated relative to impact thresholds, both with respect to population growth and habitat loss. Establishing impact thresholds for the Bald Hills sage-grouse population is problematic. An understanding of how habitats potentially affected (directly and indirectly) by the proposed Project are currently being used by the population is unclear. Seasonal range map boundaries near the preferred route

were established in part by limited numbers of sage-grouse observations near and west of the proposed route (Utah Natural Heritage Program [UNHP] 2009). Additionally, the preliminary site-specific radio-telemetry data suggest that most individuals in the population rely on the sagebrush-dominated habitats east of the proposed line (Figure 1).

A compounding issue is the existence of a high-voltage transmission line (erected in the 1980s) that the Agency preferred Alternative parallels (Figure 1). Information regarding the effects this existing high-voltage transmission line may have had on sage-grouse distribution, seasonal range use, and demographics is not available. Additionally, the analysis of the effects requires a prediction of whether the Project, which would essentially increase the density of tall structures along 11.7 miles of the Agency Preferred Alternative in sage-grouse habitat, would result in compounded effects on the Bald Hills sage-grouse population.

F.3 Methodology

In the absence of site-specific information regarding habitat use and demographics of the Bald Hills sage-grouse population, as well as the lack of a clear understanding of the effects of transmission lines on sage-grouse and other biological considerations discussed above, an approach to compliance with the WO IM 2012-043 incorporating the best available information pertaining to this sage-grouse population was established. The BLM used a modified Delphi method analysis to reach a determination of whether the Project may have "more than minor adverse effects" on the Bald Hills greater sage-grouse population and its habitat. Wildlife biologists from the BLM Cedar City Field Office, UDWR, FWS, and USFS, who served as members of the Biological Resource Task Group (BRTG) for the Project, participated in structured discussions during November 2010 to April 2012 that were facilitated by Environmental Planning Group (EPG), BLM's third-party EIS contractor, to develop a consensus regarding the effects of the Project on the greater sage-grouse.

Initial discussions focused on identification of available information and data gaps pertinent to the analysis and the need to identify criteria on which an analysis of the construction, operation, and maintenance of the Project would be based. These discussions lead to identification of a list of impact evaluation criteria that were based on the FWS analysis of the status and threats to the greater sage-grouse in relation to the five factors on which listing decisions are to be made (identified in section 4(a)(1) of the Endangered Species Act) in the 12-month findings, and the BLM Sage-grouse National Technical Team's Report on National Sage-grouse Conservation Measures (BLM 2011). Following two rounds of review and discussion by the BRTG, a list of six impact evaluation criteria were selected by consensus of the BRTG on February 27, 2012 (Table F-2).

TABLE F-2
IMPACT EVALUATION CRITERIA USED TO EVALUATE THE MAGNITUDE OF POTENTIAL EFFECTS ON GREATER SAGE-GROUSE ASSOCIATED WITH THE PROJECT

Criteria	Considerations
Direct loss of birds	▪ Sage-grouse mortalities have been reported due to in-flight collisions with transmission line conductors, fences, and guy wires; due to electrocution from transmission line infrastructure; and due to collisions with vehicles traveling on roads. ▪ The Project could cause loss of birds if active nests are destroyed during construction.

TABLE F-2
IMPACT EVALUATION CRITERIA USED TO EVALUATE THE MAGNITUDE OF POTENTIAL EFFECTS ON GREATER SAGE-GROUSE ASSOCIATED WITH THE PROJECT

Criteria	Considerations
Present or threatened destruction, modification, or curtailment of habitat or range	The Project could: ▪ Result in the loss of suitable sage-grouse habitats on which populations depend. The Bureau of Land Management (BLM) Sage-grouse National Technical Team recommends that BLM manage priority sage-grouse habitat so that discrete anthropogenic disturbances cover less than 3 percent of total sage-grouse habitat regardless of ownership (BLM 2011). ▪ Reduce the quality of sage-grouse habitat by introducing or spreading noxious weeds. ▪ Fragment suitable sage-grouse habitats due to potential effects related to introduction of tall structures, increased electromagnetic fields, and construction of new roads. ▪ Disturb sage-grouse and disrupt breeding activities due to increased human presence and noise at lek locations. ▪ Disturb sage-grouse during sensitive wintering periods through human presence, vehicle use, and noise during construction and maintenance. ▪ Affect seasonal sage-grouse migrations and movements among populations.
Overutilization (harvest)	▪ The Bald Hills sage-grouse population is not open to hunting or other forms of utilization.
Disease and predation	The Project could: ▪ Increase probability of spread of disease to individual sage-grouse. ▪ Provide new perching opportunities for raptors and ravens, possibly increasing predation of sage-grouse. ▪ Increase predation of sage-grouse by non-avian predators following construction.
Inadequacy of existing regulatory mechanisms	▪ Existing regulatory mechanism would not be affected by the Project.
Other natural or man-made factors affecting the species' continued existence	**Pesticides/herbicides** ▪ The Project could increase sage-grouse mortality due to application of herbicides. **Contaminants** ▪ The Project could produce contaminants that reduce the quality of sage-grouse habitat or cause mortality of sage-grouse. **Recreational activities** ▪ The Project could increase access to federal lands due to construction of access roads. The public may use these access roads for off-highway vehicle and vehicle access. **Drought** ▪ The Project is not anticipated to affect climate or drought.

During subsequent discussions, the BRTG concluded that the Project would not contribute to threats to the greater sage-grouse related to overutilization (the Bald Hills population is not hunted) or inadequacy of existing regulatory mechanisms, because the Project would not modify regulatory mechanisms and would be in compliance with all existing regulatory mechanisms.

The BRTG selected the following four impact criteria for the impact analysis.

- Direct loss of sage-grouse
- Present or threatened destruction, modification, or curtailment of habitat or range
- Disease and predation
- Other natural and man-made factors affecting the species continued existence

The considerations relative to each of the four impact criteria listed in Table F-2 were used to develop 16 factors (shown in Table F-3), which were evaluated on a site-specific basis to assess the effects of the Project on the Bald Hills greater sage-grouse population. The BRTG analyzed these factors using the best available information from UDWR and BLM Cedar City Field Office records, and the literature, through a series of four teleconference meetings during March-April, 2012. This analysis incorporated the following assumptions:

- Habitats within the currently delineated range of the population were used by the Bald Hills sage-grouse population for nesting, early brood-rearing, and wintering.

- Potential effects of the proposed Project on the sage-grouse population would be independent of the effects of the existing Intermountain Power Project 500kV transmission line.

- Construction and maintenance activities would influence sage-grouse leks located within 4 miles of the Agency Preferred Alternative, and nesting and wintering sage-grouse within designated occupied habitats.

- Addition of the transmission line to the landscape would influence sage-grouse distributions and movement patterns.

- Addition of infrastructure (e.g., poles and roads) to the landscape would provide opportunities to predators (avian and mammalian) that would influence sage-grouse demographics.

The BRTG employed a precautionary approach (Kriebel et al. 2001) in evaluating factors for which significant uncertainty exists regarding potential Project effects and greater sage-grouse responses to them. Any potential effect on sage-grouse that could not be mitigated relatively easily onsite (e.g., seasonal timing restrictions on construction and maintenance activities) was considered to be more than minor.

The BRTG developed specific protection measures that could be incorporated as Project design features to reduce specific potential adverse effects that were identified during the impact analysis. Design features agreed on by the Proponent would be included in Project design.

F.4 Results

Results of the BRTG's evaluation of the potential effects of the Project on greater sage-grouse, in relation to the 16 impact factors, and the rationale for these conclusions and other findings of the impact analysis are presented in Table F-3.

TABLE F-3
ASSESSMENT OF IMPACT CRITERIA FACTORS USED TO DETERMINE IF THE PROJECT MAY HAVE "MORE THAN MINOR" EFFECTS ON GREATER SAGE-GROUSE AND ITS HABITAT.

Factor Number	Factor to Address	Yes	No	Unknown	Rationale	Potential Additional Design Features
Impact Criterion 1: Direct Loss of Birds						
1	Would the Sigurd to Red Butte No. 2 – 345-kilovolt (kV) Transmission Project (Project) result in sage-grouse mortality due to collisions with power line conductors, fences, or guy wires?		X		The Project would not require construction of new fences (Section 2.3). Guy wires would not be required on typical transmission structures (Section 2.3.1.1). Guy wires may be required on some alternative structure types (EIS Appendix C), although these structures would not typically be used (Section 2.3.1.1) except where the transmission line route changes direction (angle structures). The Agency Preferred Alternative changes direction in three locations within the Utah Division of Wildlife Resources (UDWR)-designated occupied sage-grouse habitat. Additionally, all guy wires within occupied sage-grouse habitat would be marked to increase visibility and reduce potential collision hazard. The potential for sage-grouse mortality due to collision with transmission line conductors exists but is low. Factors influencing avian transmission line collisions include the location and configuration of transmission lines, species-specific tendencies for collision, and environmental conditions (e.g., weather, topography, and habitat) (Avian Power Line Interaction Committee [APLIC] 2006). Braun (1998) and Connelly et al. (2000) reported that sage-grouse mortalities as a result of collisions with transmission lines occur, but provided no specific data or cited studies (Utah Department of Natural Resources [UDNR] 2010). Additionally, unpublished reports of sage-grouse mortalities as a result of collisions with transmission lines were reported by Aldridge and Brigham (2003) and Beck et al. (2006) attributed two mortalities to transmission line collisions in southeastern Idaho (UDNR 2010). It is unclear what evidence each of these authors used to draw the conclusion that mortalities were caused by collisions with transmission lines, and whether collisions reported occurred with transmission lines or distribution lines. Conductors on transmission lines are typically strung at higher elevations than distribution lines and have thicker conductors, which could increase birds' ability to see and avoid wires in flight. Minimum ground clearance of the conductor would be 30 feet (Section 2.3.1). Information regarding typical sage-grouse flight heights is not available, though sage-grouse have been anecdotally reported to fly substantially higher when migrating between seasonal habitats than birds making short flights within seasonal habitats (Madsen 2012). Sage-grouse have been observed using habitats west of the Agency Preferred Alternative (Utah Natural Heritage Program [UNHP] 2009), suggesting that sage-grouse at least occasionally cross the existing extra high-voltage transmission line and the agency preferred route for the Project. Mortalities of sage-grouse attributed to collisions with wind turbines were reported in UDNR (2010) with reference to studies conducted in Wyoming (Young et al. 2003). We were unable to find reference to sage-grouse mortality at the wind facility in the referenced document (Young et al. 2003) and believe that the mortalities reported in UDNR (2010) may be improperly cited or based on unpublished data. Young et al. (2003) reported passerine and other bird mortalities from both operational wind towers and guyed meteorological towers. As we were unable to locate any reference to sage-grouse mortality in Young et al. (2003), it is unclear whether the collisions reported in UDNR (2010) occurred on meteorological towers or wind turbines. If sage-grouse mortalities due to collisions with operational wind turbines have occurred at the facility studied by Young el at. (2003), it would suggest that sage-grouse flights at least occasionally occur at heights within the rotor-swept area where these collisions could occur at the facility (62 to 200 feet aboveground). Information regarding sage-grouse mortalities due to collisions with the extra high-voltage transmission line adjacent to the Agency Preferred Alternative is not available.	All guy wires used on structures within occupied sage-grouse habitat would be marked to increase visibility and further minimize potential for impacts/collisions.
2	Would the Project result in sage-grouse mortality due to electrocution from power line infrastructure?		X		Electrocution of sage-grouse due to interactions with the proposed transmission line is not possible. The transmission line would be built to APLIC standards for bird protection (APLIC 2006). The spacing between conductors of the transmission line would be much larger than the species' wingspan, and all proposed substation expansions (where spacing between energized components is often reduced) associated with the Project are located outside of sage-grouse habitat. (Section 3.2.4.4).	
3	Would the Project result in sage-grouse mortality due to collisions with vehicles traveling on roads?		X		Wildlife mortalities due to collisions with moving vehicles occur most frequently on well-traveled secondary roads and highways. The potential for wildlife collisions with vehicles on tertiary, unimproved, and one-lane roads is very low, as the frequency of travel is low and vehicle speeds are limited by road conditions. To the extent possible, existing roads in their present condition without improvement would be used to access the right-of-way (Section 2.3.3). Where new roads are required to access the right-of-way, they would be constructed to a minimum width of 14 feet (Section 2.3.3). Existing roads within UDWR-designated sage-grouse habitat likely to be	During construction and maintenance activities, a speed limit of 20 mph would be posted and implemented on all roads in occupied sage-grouse habitat to reduce potential for sage-grouse mortality due to collisions with moving construction and maintenance vehicles.

TABLE F-3
ASSESSMENT OF IMPACT CRITERIA FACTORS USED TO DETERMINE IF THE PROJECT MAY HAVE "MORE THAN MINOR" EFFECTS ON GREATER SAGE-GROUSE AND ITS HABITAT.

Factor Number	Factor to Address	Yes	No	Unknown	Rationale	Potential Additional Design Features
					used to access the Project during construction and maintenance are generally unimproved roads and are only suitable for low-speed (less than 20 miles per hour) vehicle travel. Access roads constructed for the Project would not be improved to a degree that vehicles traveling on these roads could reach high speeds. The Project would require construction of new access roads and increased traffic on existing access roads during construction and maintenance activities. However, a speed limit of 20 miles per hour would be posted and implemented on all roads in occupied sage-grouse habitat to reduce potential for sage-grouse mortality due to collisions with moving construction and maintenance vehicles. The probability of sage-grouse mortality due to collisions with vehicles traveling on access roads is low. Additionally, a Traffic and Transportation Management Plan would be developed and incorporated into the Plan of Development (POD) to help reduce all potential environmental impacts related to transportation (Section 2.3.5.1).	
4	Would the Project result in sage-grouse mortality due to destruction of active nests?		X		Seasonal restrictions on construction and maintenance activities would be implemented within 4 miles of sage-grouse leks between February 15 and July 31 to avoid impacts on nesting and breeding sage-grouse (Table 3-3). Multiple research projects in Colorado, Idaho, and Wyoming have indicated that approximately 80 percent of sage-grouse nests occur within 4 miles of the active lek where female birds were captured (Colorado Division of Wildlife 2008). However, all sage-grouse may not nest within 4 miles of leks. To avoid disturbance to sage-grouse that may nest outside of the 4-mile area around active leks, biological monitors would be present during all construction activities that occur in occupied sage-grouse habitat between February 15 and July 31. Biological monitors will search for sage-grouse nests prior to construction activities. If active nests are located, BLM and UDWR will be notified before construction can proceed and appropriate spatial buffers will be implemented to avoid disturbing nesting activities.	Buffer size around leks would be increased to 4 miles around leks. Construction and maintenance activities would be avoided within 4 miles of sage-grouse leks between May 15 and July 31 to avoid impacts on nesting sage-grouse. (Extend temporal restriction to July 31). Biological monitors would be present during all construction activities that occur in occupied sage-grouse habitat between February 15 and July 31. Biological monitors will search for sage-grouse nests prior to construction activities. If active nests are located, BLM and UDWR will be notified before construction can proceed and appropriate spatial buffers will be implemented to avoid disturbing nesting activities.
Impact Criterion 2: Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range						
5	Would the Project, coupled with existing discrete anthropogenic disturbance, result in more than 3 percent of total anthropogenic disturbance in sage-grouse habitat? (Evaluated using the Density and Disturbance Calculation Tool outlined in the Wyoming Executive Order 2011-5).	X			Existing disturbance within the Density and Disturbance Calculation Analysis Area is 6.31 percent. Based on preliminary engineering design provided by the Proponent, the Agency Preferred Alternative could increase the density of disturbance in this area to 6.66 percent.	
6	Would the Project reduce the quality of sage-grouse habitat by introducing or spreading noxious weeds?		X		A Noxious Weed Management Plan and a Reclamation, Revegetation, and Monitoring Plan would be developed and incorporated into the POD (Section 2.3.5.1). The Noxious Weed Management Plan would be developed in compliance with BLM Manual 9015 (Integrated Weed Management) and USFS Manual 2080 (Noxious Weeds) (Section 2.3.5.1) and would outline requirements for noxious weed inventory, monitoring, and reduction measures required to prevent spread of noxious weeds as a result of Project construction or maintenance. These measures will include washing of construction equipment prior to arriving onsite and treating and/or avoiding existing weed populations to avoid spreading weeds to uninfested areas. To support the implementation of the Noxious Weed Management Plan, a noxious weed inventory will be performed in 2012 to identify locations where avoidance and treatment measures will be required. The results of 2012 surveys will be incorporated into the POD. Successful implementation of the Noxious Weed Management Plan will prevent sage-grouse habitat degradation due to spread of noxious weeds. Implementation of the Reclamation, Revegetation, and Monitoring Plan would ensure that areas disturbed by Project construction are successfully reclaimed with a seed mix approved by the BLM and private landowners to prevent the spread of noxious weeds and restore function of disturbed habitats.	

TABLE F-3
ASSESSMENT OF IMPACT CRITERIA FACTORS USED TO DETERMINE IF THE PROJECT MAY HAVE "MORE THAN MINOR" EFFECTS ON GREATER SAGE-GROUSE AND ITS HABITAT.

Factor Number	Factor to Address	Yes	No	Unknown	Rationale	Potential Additional Design Features
7	Would the Project cause new fragmentation of suitable sage-grouse habitats due to potential effects related to the introduction of tall structures, increased electromagnetic fields, and construction of new roads?	X			Several studies have demonstrated that roads near sage-grouse leks may influence female habitat selection (Lyon and Anderson 2003) and that levels of road-related effects are positively correlated with increased traffic (Holloran 2005; Remington and Braun 1991). The closest known sage-grouse lek is located 2.9 miles from the Agency Preferred Alternative. The potential effect of roads on sage-grouse habitat use at distances of several miles from active leks is unresolved, although road-related effects on habitat fragmentation and use could be conservatively estimated to be positively correlated with increased traffic. Construction of new access roads and use of existing access roads would be required to access the transmission line during construction and maintenance. Use of these roads would be expected to be greatest during construction and occasional maintenance activities. Traffic on existing roads in the vicinity of the Agency Preferred Alternative is very low with the exception of occasional increases due to activities previously authorized by BLM, such as livestock grazing. Construction of the Project is not anticipated to increase public traffic on roads in sage-grouse habitat. The Agency Preferred Alternative crosses 11.7 miles of UDWR-designated occupied sage-grouse habitat of which 4.1 miles are on BLM-administered lands. Within UDWR-designated occupied sage-grouse habitat, the Agency Preferred Alternative is within a designated utility corridor parallel to, but 1,500 feet east of, an existing extra-high-voltage transmission line, which may already have fragmented sage-grouse habitat due to construction of transmission towers and introduction of electromagnetic fields. Peer-reviewed studies of tall structures and electromagnetic fields effects on habitat use by greater sage-grouse are limited. Agency personnel and sage-grouse experts have expressed concern that sage-grouse may avoid areas that contain tall structures (Connelly et al. 2004, Pruett 2009). The effects of tall structures and electromagnetic fields on sage-grouse have not been demonstrated and are poorly understood. Some studies have inferred effects of tall structures on sage-grouse based on observed effects on lesser (*Tympanuchus pallidicinctus*) and greater (*Tympanuchus cupidolesser*) prairie chickens in prairie habitats. These studies are discussed in Section 3.2.4.4 of the Final EIS. The differences in the distribution, habitat use, morphology, and behavior between sage-grouse and prairie chickens require that caution be exercised when individual and population responses to tall structures across species (UDNR 2010). If sage-grouse avoid areas where tall structures or electromagnetic fields are present, construction of a new overhead transmission line could result in fragmentation and decreased carrying capacity of habitats that become isolated as a result of construction of the transmission line. Assuming that the Project would cause new fragmentation of sage-grouse habitat due to tall structures and electromagnetic fields is a conservative assumption.	
8	Would the Project disturb sage-grouse and disrupt breeding activities (i.e. affect male strutting displays, number of sage-grouse attending leks, frequency of mating events) due to increased human presence and noise at lek locations?			X	Seasonal restrictions on construction and maintenance activities would be implemented within 4 miles of sage-grouse leks between February 15 and July 31 to reduce impacts of increased noise and human presence on nesting and breeding activities (Table 3-3). Impacts of anthropogenic activity have been documented at leks at a distance of up to 6 kilometers (3.7 miles) (Naugle et al. 2011). Implementation of seasonal restriction within 4 miles of active leks would be expected to minimize disturbance associated with noise and human presence. New roads that could be used by the public to access sage-grouse leks or inadvertently disrupt lek activities would not be constructed within 2 miles of sage-grouse leks. The closest known sage-grouse lek is located 2.9 miles from the Agency Preferred Alternative.	Buffer size would be increased to 4 miles around leks. Refer to Factor 4.
9	Would human presence, vehicle use, and noise during construction and maintenance disturb sage-grouse during sensitive wintering periods?		X		Seasonal restriction on construction and maintenance activities would be implemented in UDWR-designated crucial sage-grouse winter habitat between November 15 and March 15 (Table 3-3).	
10	Would the Project provide new barriers to sage-grouse seasonal migrations or movements between populations?			X	The Agency Preferred Alternative crosses 11.7 miles of UDWR-designated occupied sage-grouse habitat of which 4.1 miles are on BLM-administered lands. Within UDWR-designated occupied sage-grouse habitat, the Agency Preferred Alternative is parallel to, but 1,500 feet east of, an existing extra-high-voltage transmission line within a designated utility corridor. The majority of observations of sage-grouse in habitats occupied by the Bald Hills sage-grouse population have occurred east of the Agency Preferred Alternative. However, sage-grouse have been observed using habitats west of the Agency Preferred Alternative (UNHP 2009) and sage-grouse have been documented traveling approximately 26 miles between leks within habitat occupied by the Bald Hills sage-grouse population (Pontarolo 2012). The Agency Preferred Alternative does not cross between leks that occur within the area occupied by the Bald Hills sage-grouse population and is not expected to provide a barrier to existing patterns of sage-grouse movement between these leks.	

TABLE F-3
ASSESSMENT OF IMPACT CRITERIA FACTORS USED TO DETERMINE IF THE PROJECT MAY HAVE "MORE THAN MINOR" EFFECTS ON GREATER SAGE-GROUSE AND ITS HABITAT.

Factor Number	Factor to Address	Yes	No	Unknown	Rationale	Potential Additional Design Features
					The Agency Preferred Alternative would cross through UDWR-designated crucial brood rearing and crucial winter habitat. While the UDWR-designated crucial brood rearing and crucial winter habitat overlap in the Project area, the route is not located along the boundary between these habitats where important seasonal movements may occur. If sage-grouse avoid areas with tall structures, both crucial winter and crucial brood rearing habitat still would be accessible to birds east of the Agency Preferred Alternative from all lek locations. The Agency Preferred Alternative would be located between leks attended by the Bald Hills sage-grouse population and habitats occupied by the Pine Valley sage-grouse population; located approximately 22 miles north west of the Agency Preferred Alternative (the nearest lek attended by the Pine Valley sage-grouse population is approximately 31 miles from the Agency Preferred Alternative). These two sage-grouse populations are separated by the Wah Wah Mountains. No evidence of birds traveling between the two populations exists, though the two populations may have been historically connected. If birds travel between these two populations, long-distance flights likely would be required. Construction of the Project is not anticipated to provide a barrier that would prevent birds from flying between these two populations.	
Impact Criterion 3: Disease and Predation						
11	Would the Project increase probability of spread of disease to individual sage-grouse?		X		Sage-grouse are hosts for a variety of parasites and diseases (75 *Federal Register* 13910). Many of these diseases could be spread by vectors including ticks or mosquitoes. Projects that create habitat for ticks or mosquitoes through water developments, stock tanks, or other means could increase the spread of disease among sage-grouse. The Project would not require any water developments that could be used as suitable breeding reservoirs for disease vectors.	
12	Would the Project provide new perching opportunities for raptors and ravens in areas where perches are limited?	X			The Agency Preferred Alternative crosses 11.7 miles of UDWR-designated occupied sage-grouse habitat of which 4.1 miles are on BLM-administered lands. Within UDWR-designated occupied sage-grouse habitat, the Agency Preferred Alternative is within a designated utility corridor parallel to, but 1,500 feet east of, an existing extra-high-voltage transmission line. Construction of the Project would add new transmission towers that would increase the extent of sage-grouse habitat east of the existing transmission line visible to raptors and ravens using these towers as perches, and could potentially result in increased predation of sage-grouse.	FWS recommends that perch deterrents be incorporated in the Project design within 4 miles of the Mud Springs Bench Lek, in order to reduce raptor and corvid use of the line and subsequent predation of sage-grouse.
13	Would the Project increase predation on sage-grouse by non-avian predators following construction?	X			The Project would require construction of access roads between tower locations. The Proponent has indicated that roads would be constructed in a straight line between towers. Roads can provide corridors for predator movement which may result in increased sage-grouse predation. Construction of straight roads between tower locations would also create long visibility corridors where escape cover used by sage-grouse would be removed. Sage-grouse may experience increased predation by mammalian predators due to the lack of escape cover and increased visibility of sage-grouse to mammalian predators when crossing these corridors.	
Impact Criterion 4: Other Natural or Manmade Factors Affecting the Species' Continued Existence						
14	Would the Project increase application of pesticides or herbicides that could affect sage-grouse or sage-grouse habitat suitability?		X		A Noxious Weed Management Plan would be developed and incorporated into the POD (Section 2.3.5.1). The Noxious Weed Management Plan would include restrictions on the use of pesticides and herbicides used for control of noxious weeds during Project construction, operation, maintenance, or reclamation monitoring. Pesticides and herbicides would only be used for purposes of controlling noxious weeds, and would be used in their lowest effective concentrations.	
15	Would the Project produce contaminants that reduce the quality of sage-grouse habitat or cause mortality of sage-grouse?		X		The potential for discharge of contaminants during Project construction, operation, or maintenance is low as best management practices are employed. A Spill Prevention, Containment, and Countermeasures Plan and a Hazardous Materials Management Plan would be developed and incorporated into the POD to ensure that contaminants are not introduced into the environment as a result of the Project (Section 2.3.5.1).	
16	Would the Project require construction of access roads that are likely to be used by the public in sage-grouse habitats that are currently inaccessible by vehicles?	X			Construction of the Project is not anticipated to create an attraction that would increase public visitation to the area following construction. However, the Project would require construction of new access roads for construction and maintenance of the transmission line. The access roads would be located 1,500 feet east of existing access roads and could be used by the public to access sage-grouse habitats that are rarely visited by humans in their current condition due to their distance from developed roads. All new road construction within UDWR-designated sage-grouse habitat would occur within 1,500 feet of existing roads that provide access to the existing extra-high-voltage transmission line and other utility infrastructure.	

NOTE: All factors have been addressed only for the Agency Preferred Alternative. Other alternative routes may have different effects when evaluated using the approved Criteria for Determining if Effects on Sage-grouse are "More Than Minor" (Table F-1).

Potential adverse effects of the Project were identified for five of the impact factors.

- The Project, coupled with other existing discrete anthropogenic disturbance, would result in disturbance of mapped sage-grouse habitat within the area of analysis based on results of the Density and Disturbance Calculation Tool method (Wyoming Executive Order 2011-5).
- The Project would create additional fragmentation of potentially suitable sage-grouse habitat because of potential effects related to the introduction of tall structures, increased electromagnetic fields, and construction of new roads.
- The Project would provide new perching opportunities for raptors and ravens in areas where perches are limited. The Project would increase predation on sage-grouse by non-avian predators.
- The Project would require construction of access roads that are likely to be used by the public in sage-grouse habitats that are currently inaccessible to vehicles.

F.5 Conclusions and Recommendations

Based on the conclusions and rationale presented in Table F-3, the BRTG has concluded that the Project would likely have more than minor adverse effects on the Bald Hills greater sage-grouse population. In accordance with WO IM 2012-043, BLM has ensured through the EIS all reasonable alternatives for siting the right-of-way outside of preliminary priority habitat have been considered and analyzed. The Agency Preferred Alternative crosses the least amount of sage-grouse habitat, maintains the greatest separation from sage-grouse leks, and is located adjacent to an existing high-voltage transmission line. It is also located within the existing West-wide Energy Corridor.

F.5.1 Technically Feasible Best Management Practices

The BLM, in consultation with the BRTG, have identified the following technically feasible best management practices that would be implemented to eliminate or minimize impacts on greater sage-grouse.

- All guy wires used on structures within occupied sage-grouse habitat would be marked to increase visibility and further minimize potential for collisions.
- During construction and maintenance activities, a speed limit of 20 miles per hour would be posted and implemented on all roads in occupied sage-grouse habitat to reduce potential for sage-grouse mortality due to collisions with moving construction and maintenance vehicles.
- No construction or maintenance activities would occur within 4 miles of sage-grouse leks, between February 15 and July 31, to avoid impacts on nesting and brood-rearing sage-grouse.
- No construction or maintenance activities would occur within UDWR-mapped sage-grouse habitat, between March 15 and June 15, to avoid impacts on nesting sage-grouse.
- Perch deterrents would be placed on transmission line towers within 4 miles of the Mud Springs Bench Lek to minimize the potential for increased predation of sage-grouse due to an increase in the number of perching structures available to raptors and corvids.

F.5.2 Mitigation Framework

As well as implementing technically feasible best management practices, the IM directs the BLM as follows:

> In addition to considering opportunities for onsite mitigation, the BLM will, to the extent possible, cooperate with project proponents to develop and consider implementing appropriate offsite mitigation that the BLM, coordinating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects (Refer to WO-IM-2008-204, Off-Site Mitigation). When developing such mitigation, the BLM should consider compensating for the short-term and long-term direct and indirect loss of greater sage-grouse and its habitat.

BLM, UDWR, and FWS met on May 23, 2012, to discuss compensatory mitigation for the Project and to develop a framework that the Proponent could use to offer mitigation that would meet the need identified in the IM to "cumulatively maintain or enhance greater sage-grouse habitat." BLM, UDWR, and FWS identified possible mitigation approaches, including, but not limited to the following:

- Include a written mitigation plan specific to greater sage-grouse that will be reviewed and approved by BLM, UDWR, and FWS
- Mitigate identified adverse impacts of the Project on greater sage-grouse within the range of the Bald Hills sage-grouse population
- To the extent possible, mitigate for the specific direct and indirect adverse effects of the Project (Final EIS Table F-2)
- Take into consideration the time to achieve compensatory mitigation relative to the schedule on which Project impacts will occur in determining the amount of compensatory mitigation needed
- Plan location and nature of mitigation treatments based on site-specific information regarding sage grouse movements and patterns of habitat use in the Bald Hills
- Include habitat treatments focused on improving or providing additional habitats (winter, nesting, brood-rearing, movement corridors) that are currently limiting for the Bald Hills sage-grouse population
- Establish success criteria for each mitigation treatment to allow BLM, UDWR, and FWS to identify when mitigation treatments had achieved success
- Include monitoring of mitigation effectiveness to ensure that mitigation goals, including cumulatively maintaining or enhancing sage-grouse habitat, are met
- Fencing mitigation including but not limited to: replace existing fences that do not meet BLM standards; mark existing fences within 1.25 miles of a lek; and remove fences not needed for management purposes

On June 4, 2012, BLM, UDWR, and FWS discussed with the Proponent potential compensatory mitigation approaches that could be implemented within the known range of the Bald Hills sage-grouse population.

Specific to the Project and based on the fact that there are existing ongoing studies in the Project area, the Proponent has agreed to provide compensatory mitigation to compensate for impacts on sage-grouse and sage-grouse habitat. The Proponent has collaborated with BLM, UDWR, and FWS to develop a framework for compensatory mitigation that the agencies agree would be an acceptable approach to maintain or enhance habitats used by the Bald Hills sage-grouse population. The framework for compensatory mitigation developed by the Proponent, BLM, UDWR, and FWS are discussed in the following sections.

F.5.3.2 Habitat Improvement Projects

Habitat projects would be initiated to increase sage-grouse habitat quantity and quality that are determined to be limiting for the Bald Hills sage-grouse population. The scope (locations, area, and nature of habitat enhancement treatments) would be developed by BLM and UDWR based on biological considerations and would be included in the offsite mitigation plan.

At a minimum, 850 acres[1] of habitat treatment would be conducted, once site-specific NEPA was completed. The mitigation plan may include additional mitigation measures developed by BLM, UDWR, and FWS.

F.5.3.3 Monitoring Effectiveness of Habitat Treatment

Monitoring of sage-grouse responses to habitat treatments using telemetry would be useful to this approach. Specific success criteria would be developed prior to initiation of these actions. Procedures for implementation of additional habitat treatments in the event that monitoring detects a failure to meet prescribed objectives or success criteria would be necessary. The anticipated duration and costs for these efforts would be established by the BLM, UDWR, FWS, and the Proponent. The Proponent would coordinate with BLM, UDWR, and FWS to contribute funding towards monitoring the habitat improvement project for 3 years after its implementation.

Part of the required mitigation package would include funding to:

- Monitor treatment areas to determine if success criteria are met
- Contribute a fixed amount of funding based upon the average habitat treatment failure rates based on the understanding that there is a risk the habitat improvement project may not meet success criteria
- Continue telemetry studies of sage-grouse habitat use within the Bald Hills area and identification of habitats limiting the sage-grouse population
- Continue ongoing telemetry studies to identify types of habitat treatments that would be most effective at improving or increasing habitat that is currently limiting the Bald Hills sage-grouse population
- Support a research project that analyzes known sage-grouse lek and telemetry locations in relation to transmission and distribution lines, as well as other anthropogenic and landscape

[1] 850 acres is based on approximately 4:1 ratio of habitat improvement: right-of-way corridor through sage-grouse habitat or 10:1 ratio of habitat improvement: total project disturbance within sage grouse habitat.

features. This analysis would also assess sage-grouse use of habitats within various buffer distances of anthropogenic and landscape features.

F.6 References

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Appendix G – Programmatic Agreement

APPENDIX G – PROGRAMMATIC AGREEMENT

G.1 Introduction

The purpose of the Programmatic Agreement is to fulfill Bureau of Land Management's (BLM) Section 106 of the National Historic Preservation Act (16 United States Code 470) responsibilities through development of a phased approach through consultation with consulting parties. The Programmatic Agreement outlines the stipulations that would be followed concerning the identification, assessment, and treatment of cultural resources for the Project in accordance with 36 Code of Federal Regulations 800.14(b). A Programmatic Agreement has been developed among the various agencies and consulting parties (including special interest organizations and the Proponent) involved with authorizing the Project. The BLM Color Country District is serving as the lead agency and office.

The Programmatic Agreement outlines a phased approach to the identification, assessment, and treatment of cultural resources for the Project, which includes a combination of Class I, Class II, and Class III cultural resource data collection conducted at specific stages of the Project. A copy of the final Draft Programmatic Agreement is included in this Appendix.

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Cultural resources G-1

PROGRAMMATIC AGREEMENT AMONG THE USDI BUREAU OF LAND MANAGEMENT, USDA FOREST SERVICE, USDI NATIONAL PARK SERVICE, UTAH STATE HISTORIC PRESERVATION OFFICE, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, STATE OF UTAH, SCHOOL AND INSTITUTIONAL TRUST LANDS ADMINISTRATION, UTAH DEPARTMENT OF TRANSPORTATION, AND PACIFICORP REGARDING THE SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT

WHEREAS, PacifiCorp, doing business as Rocky Mountain Power (Applicant) proposes to construct, operate, and maintain a 345-kilovolt (kV) transmission line from the existing Sigurd Substation in Sevier County, Utah, to the existing Red Butte Substation in Washington County, Utah, a distance of approximately 170 miles and known as the Sigurd to Red Butte No. 2 345kV Transmission Project (Project), that will use overhead, single-circuit, steel-pole H-frame tower structures predominantly to support the conductors; and

WHEREAS the Bureau of Land Management (BLM), lead Federal land-managing agency and Authorized Officer for this Project, as authorized by the Federal Land Policy and Management Act of 1976 (Title V, 43 United States Code [USC] 1701), is considering issuance of a Federal right-of-way grant for the Project, as authorized by 43 Code of Federal Regulations [CFR] Part 2800); and

WHEREAS, the BLM is also the lead Federal agency for compliance with Section 106 of the National Historic Preservation Act (NHPA), 16 USC § 470, and its implementing regulations, 36 CFR Part 800, and has determined that the Project is a Federal undertaking that may have an effect on historic properties; and

WHEREAS, the BLM in consultation with the SHPO agreed to develop a Programmatic Agreement (Agreement) because the effects on historic properties cannot be fully determined prior to approval of this complex Project pursuant to 36 CFR § 800.14 (b); and

WHEREAS, the BLM, Color Country District, has been designated by the BLM Utah State Director to be the lead office for the BLM, and as such will coordinate the BLMs efforts for the purposes of complying with Section 106 of the NHPA, and is responsible for signing this Agreement on behalf of the BLM; and

WHEREAS, one or more of the Project's alternatives may affect the Mountain Meadows Massacre Site National Historic Landmark (NHL), the BLM has invited the NPS to participate in this consultation in order to identify the "planning and actions" that "may be necessary to minimize harm" to the Mountain Meadows Massacre NHL, as required by Section 110(f) of the NHPA and 36 CFR § 800.10; and

WHEREAS, one or more of the Project's alternatives may affect the Old Spanish National Historic Trail (NHT); and

WHEREAS, the BLM has notified the ACHP per the National Programmatic Agreement component 5.b(1), ACHP notification for non-routine interagency projects, and the ACHP has elected to participate in the consultation process for this Agreement under 36 CFR Part 800.2(b)(1) and Appendix A and is a Signatory to this Agreement; and

WHEREAS, the BLM is responsible for government-to-government consultation with Indian Tribes for this Project and the BLM is the lead agency for all Native American consultation and coordination, and has formally invited the Tribes and Native American organizations listed in Appendix A as interested parties to participate in consultation and to continue to be consulted regarding the potential effects of the Project on properties to which they ascribe religious and cultural significance; and

WHEREAS, the Project crosses lands administered by the USFS Dixie and Fish Lake National Forests and the Dixie National Forest will serve as the lead for both National Forests, which will consider issuance of a Special Use Authorization for this Project pursuant to 36 CFR § 251; and the Dixie National Forest has therefore been consulted and included as a Signatory to this Agreement; and

WHEREAS, the Project includes lands administered by the State of Utah, School and Institutional Trust Lands Administration (SITLA), an agency in the State of Utah that has a responsibility to comply with Utah Code Annotated (UCA) § 9-8-404 on lands owned or controlled by SITLA within the Areas of Potential Effects (APEs). SITLA intends to employ this Agreement to address applicable requirements for actions resulting from this Agreement involving land administered by SITLA. SITLA, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determination made, concerning Federal lands, and has therefore been consulted and included as a Signatory to this Agreement; and

WHEREAS, the Project includes lands administered by the Utah Department of Transportation (UDOT), an agency in the State of Utah, that has a responsibility to comply with UCA § 9-8-404 on lands owned or controlled by UDOT within the APEs. UDOT intends to employ this Agreement to address applicable requirements for actions resulting from this Agreement involving land administered by UDOT. UDOT, however, does not waive its independent state statutory jurisdiction to make final decisions concerning its lands, and is not bound in its leasing or other approval authority by actions taken, or determination made, concerning Federal lands, and has therefore been consulted and included as a Signatory to this Agreement; and

WHEREAS, the Applicant has participated in consultation and has been included as an Invited Signatory to this Agreement; and

WHEREAS, Utah Public Lands Policy Coordination Office (PLPCO) has participated in consultation and has been invited to be a Concurring Party to this Agreement; and

WHEREAS, the Paiute Indian Tribe of Utah have participated in consultation and have been invited to be a Concurring Party to this Agreement; and

WHEREAS, the Church of Jesus Christ of Latter-day Saints, Milford Archaeological Research Institute, Mountain Meadows Association, Mountain Meadows Massacre Descendents, Mountain Meadows Monument Foundation, National Trust for Historic Preservation, Old Spanish Trail Association, Oregon-California Trails Association, Utah Rock Art Research Association, and the We Nooch Society have participated in consultation and have been invited to be Concurring Parties to this Agreement; and

WHEREAS, the roles and responsibilities of the Signatories, Invited Signatories and Concurring Parties are defined in Appendix B, and, unless defined differently in this Agreement, are used in accordance with 36 CFR Part 800.16; and

NOW, THEREFORE, the Consulting Parties agree that the Project will be administered in accordance with the following stipulations:

STIPULATIONS

The BLM will ensure that the following measures will be carried out:

1. Coordination and Compliance. The BLM will coordinate overall actions required under this Agreement as specified herein. The Applicant and its representative cultural resource consultant (CRC) may be called upon to assist in the preparation and distribution of information, documentation and/or reports to reviewers. The Applicant will fund all cultural resources fieldwork, analysis, monitoring, data recovery, reporting, curation and other mitigation required under this Agreement.

   The BLM will ensure that all work undertaken to satisfy the terms of this Agreement meets the Secretary of the Interior's Standards and Guidelines for Archeological and Historic Preservation (48 *Federal Register* [FR] 44716-44742, September 23, 1983) (the Secretary's Standards) and takes into consideration the ACHPs *Section 106 Archaeology Guidance* (http://www.achp.gov/archguide.html) and Guidelines for Evaluating and Documenting Traditional Cultural Properties, *National Register Bulletin 38*, 1998, as incorporated by reference herein. The BLM also will ensure that the work is carried out by or under the direct supervision of a person or persons meeting, at a minimum, the applicable professional qualifications standards set forth in the Secretary's Standards.

   A. The terms of this Agreement also will be carried out in accordance with the most recent BLM (8100 Manual) and USFS (FSM 2360) guidelines for cultural resources. However, to the extent that those guidelines are inconsistent with the terms of this Agreement, this Agreement shall supersede those guidelines.

2. Monitoring and Review. The SHPO may monitor activities carried out pursuant to this Agreement. The BLM will cooperate with the SHPO in carrying out its monitoring and review responsibilities.

3. Consulting Parties. The BLM has identified Consulting Parties pursuant to 36CFR 800.2 and will consult with them on fulfillment of stipulations associated with this Agreement, including possible expansion of the APEs if determined by the Authorized Officer that the Project is having adverse effects on historic properties beyond the APEs.

4 Native American Consultation. The BLM will continue to consult with the appropriate Indian Tribes regarding historic properties of religious and cultural significance, in accordance with the NHPA, the Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological Resources Protection Act of 1979 (ARPA), American Indian Religious Freedom Act of 1978 (AIRFA), Executive Order 13007 – Indian Sacred Sites, and their implementing regulations. BLM will provide copies of any reports/studies developed pursuant to this Agreement to those Tribes that have expressed a desire for information as it is gathered for the Project.

5. Cultural Resource Inventories. The BLM will assure that Class I and Class III investigations for the route selected during the Environmental Impact Statement (EIS) process will be completed prior to BLM issuing a Record of Decision for the Project. APEs for Class I and Class III investigations are defined for the Project below.

   A. Areas of Potential Effects (APEs). As the Project proceeds, the APEs may be expanded to account for effects on historic properties (as defined in 36 CFR 800.16(l)(1)) outside the initial APEs that could be affected by the proposed Project. Effects to historic properties resulting from any new construction or facility placements that fall outside the initial APEs or that have not yet been identified will be subject to the same requirements as the Direct Effects APEs. Changes to the APEs will be made by the lead agency, in consultation with the SHPO and Consulting Parties to this Agreement.

      1. Project APE. The APE for the Project has been defined as the viewshed of a tower, 150 feet in height, out to a maximum distance of 2 miles from the reference centerline of the proposed transmission line route. Class I investigations will be conducted based upon the Project APE.

      2. Direct Effects APE. The transmission line Direct Effects APE consists of a 350-foot-wide corridor centered on the proposed transmission line route. Direct effects are those effects that occur as a direct result of the Project. The CRC will conduct an intensive Class III pedestrian inventory for the transmission line Direct Effects APE. New and/or improved access routes and ancillary facilities APEs associated with the Project will also be subject to intensive Class III pedestrian inventory.

i. Access Route APE. Proposed new access routes and existing roads requiring improvement will require a minimum 150-foot-wide survey corridor centered on the proposed access route.

ii. Ancillary Facilities APE. All ancillary facilities will be inventoried with a 100-foot-wide buffer around each proposed facility footprint.

3. Indirect Effects APE. The transmission line indirect effects APE consists of a corridor 4 miles wide centered on the proposed transmission line route. Indirect effects are those effects caused by the Project occurring later in time, or farther removed in distance, than direct effects. Once the proposed transmission line route has been selected, the CRC will conduct a Cultural Resources Visual Effects Study, which will be reviewed by the participants in the Programmatic Agreement and approved by the BLM.

B. Inventory Methods and Reporting. Following completion of the Class III inventory, a Class III Cultural Resource Inventory Report will be prepared. This report will include the results of the Class I and Class III inventories for the selected route and site eligibility recommendations resulting from Class III studies, as well as eligibility recommendations resulting from reevaluation of previously recorded sites. Detailed information regarding inventory methods is included in Appendix C.

1. Agency Review. The CRC will submit the appropriate number of copies of the Class III cultural resource inventory report to the BLM for distribution to Tribes and other land-managing agencies involved for concurrent review. State and Federal land-managing agencies will provide their comments and recommendations on National Register of Historic Places (NRHP) eligibility for properties under their jurisdiction to the BLM within 30 calendar days. The BLM may assume concurrence with the recommendations in reports for any party that does not comment within the review period. The BLM will consolidate the comments and forward them to the CRC. The CRC will revise documents, as appropriate, to address comments received within 30 calendar days.

2. Consulting Parties Review. The BLM will invite Consulting Parties to attend a meeting prior to submission of the Class III report to the SHPO to discuss the results of the Class III inventory. Consulting Parties will have 15 days after the meeting to submit comments to the BLM.

3. SHPO Review. The CRC will provide revised (as necessary) documents to the BLM. Upon BLM approval, the BLM will distribute them to the SHPO with a request for review and comment. The SHPO review time will be 30 calendar days from their receipt of the document and request for comment. The SHPO will provide their comments to the BLM, who will forward them to the CRC. The CRC will have 14 calendar days to revise the report, as appropriate, to address comments from the SHPO. The BLM may assume SHPO concurrence with the

recommendations in reports if comments are not received within the review period. Final reports will be submitted by the CRC to the BLM for final approval. Upon BLM approval of the final reports, the BLM will distribute them to the agencies and Tribes as applicable. The BLM shall forward any dispute with SHPO and Tribes regarding eligibility to the Keeper of the National Register, whose determination will be final.

6. Sensitive Information. All Consulting Parties will ensure that all sensitive information, as defined in Section 9 of the Archaeological Resources Protection Act (ARPA) and Section 304 of the NHPA, excluded under the Freedom of Information Act (5 USC § 552, as Amended by Public Law No. 104-231, 110 Stat. 3048) is protected from release. For the purposes of consultation under this Agreement, the Authorized Officer may release certain information for the benefit of the resource.

   A. Culturally sensitive information regarding locations on USFS lands will be considered for release under the provisions of Title VIII, Subtitle B, Section 8106 of the Food, Conservation, and Energy Act of 2008 (Farm Bill) (Public Law No. 110-234)

   B. Information concerning the nature and location of any archaeological resource (historic or prehistoric) will be considered for release under the provision of Section 9 of the ARPA of 1979 as amended (16 USC 470hh).

7. Historic Properties Treatment Plan (HPTP). If BLM determines that the Project will have adverse effects on historic properties, BLM shall consult with the SHPO, Tribes, and other Consulting Parties to develop and evaluate alternatives or modifications to the Project that could avoid, minimize or mitigate adverse effects on historic properties in accordance with 36 CFR 800.6. Prior to construction, the CRC will prepare and implement a comprehensive HPTP that will address the adverse effects of the proposed Project on historic properties. The HPTP will identify the nature of the effects to which each historic property will be subjected and identify the most appropriate treatment strategies. Avoidance is the preferred mitigation strategy especially for direct effects and may involve redesign of the Project or relocation of specific components of the Project. For indirect effects, mitigation options such as topographic screening will be used to the maximum extent possible to reduce the visibility of the transmission line route from historic properties. Other treatment measures for direct, indirect and cumulative effects may include, but will not be limited to, completion of NRHP nomination forms, Historic American Landscapes Survey (HALS) documentation, Historic American Buildings Survey (HABS) documentation, Historic American Engineering Record (HAER) documentation, archaeological data recovery, purchase of land containing National Historic Trail (NHT) segments or other historic properties for public ownership, partnerships and funding for public archaeology projects, print publication (brochure/book) and media publication (website/podcast/video).

The HPTP will adhere to the guidance provided by the ACHP (http://www.achp.gov/archguide/), the Secretary of the Interior's Professional Standards, HABS/HAER/HALS guidance, and appropriate state guidelines. The HPTP will include treatment guidelines for certain categories of adversely affected historic properties such as trails, as well as property specific treatments. The HPTP will also include provisions for monitoring during construction and appendices for treatment of Inadvertent Discoveries of Cultural Resources and Human Remains.

If data recovery is proposed as part of treatment, the HPTP may not be implemented before the BLM and USFS have issued ARPA permits for Federal lands and PLPCO has issued an excavation permit for state lands (UCA 9-8-305).

A. Agency Review. The CRC will submit the draft HPTP to the BLM for distribution to agencies and Tribes for review prior to any treatment application. All reviewing parties will have 30 calendar days from receipt to comment on the HPTP. Reviewing parties will forward any comments on the HPTP to the BLM. The CRC will revise the HPTP, as needed, to address the comments. If any reviewing party fails to submit written comments to the BLM within 30 calendar days of receipt of the HPTP for review, the BLM may assume they have no objection to the adequacy of the plan.

B. Consulting Parties Review. Following agency review of the draft HPTP, the Consulting Parties will be invited to send representatives to an HPTP meeting. The BLM will host this meeting, the purpose of which will be to discuss historic property treatment recommendations and review a selection of representative sites requiring treatment as a result of the Project. A summary of treatment recommendations and procedures will be provided to the Consulting Parties 15 calendar days prior to the meeting. Consulting Parties will have 15 calendar days following the meeting to provide written comments to BLM. If any reviewing party fails to submit written comments to the BLM within 15 calendar days of receipt of the HPTP for review, the BLM may assume they have no objection to the adequacy of the plan.

C. SHPO Review. The HPTP, revised as necessary, will be submitted to the SHPO by the BLM. The SHPO will have 30 calendar days from receipt to forward comments to the BLM on the HPTP. The CRC will revise the HPTP, as needed, to address comments. If the SHPO fails to submit written comments within 30 calendar days of receipt of the HPTP, the BLM may assume the SHPO has no objection to the adequacy of the plan and the BLM will then approve the final HPTP. The BLM will provide the final HPTP the agencies, SHPO, and Tribes. The BLM will provide the Consulting Parties with an executive summary of the final HPTP.

8. Monitoring and Inadvertent Discoveries Plans. The CRC will develop an archaeological monitoring plan and inadvertent discoveries plan as part of the HPTP. Monitoring will

help establish the presence or absence of cultural materials in areas where subsurface cultural deposits are suspected or where previous research has shown a possibility of buried sites. Monitoring also may be employed in other areas, such as where room for avoidance is limited. Monitoring will include several types of archaeological inspection during construction. The HPTP will identify those areas that will be monitored. Resources discovered during preconstruction or construction monitoring activities will be treated in accordance with the discovery plan.

9. Notice to Proceed (NTP) and Work Authorizations. The BLM will issue a single NTP for the Project followed by a series of Work Authorizations for specific areas within the right-of-way. The BLM, USFS, or other land-managing agencies, as appropriate, may allow the Applicant to begin construction in those portions of the approved right-of-way that **do not** contain historic properties, TCPs, or sites that require treatment. These Work Authorizations are subject to any provisions in the HPTP regarding monitoring and inadvertent discoveries.

Once the BLM, USFS, and other land-managing agencies, have approved the HPTP, the land-managing agencies may also allow construction in those portions of the approved right-of-way that **do** contain historic properties that require treatment. These Work Authorizations are subject to completion of the agreed-upon field work and treatment as specified in the Work Authorization and approval of associated reports by the BLM, USFS, and/or other land-managing agencies.

Authorization for treatment and/or construction will only occur subsequent to the Applicant having been issued a Federal right-of-way grant, Special Use Authorization and specific Work Authorizations, along with any other necessary Federal or state authorization.

Physical barriers (using flagging tape, fences, barriers, and other forms) and monitors may be deployed to assure site avoidance of any historic properties adjacent to construction areas as addressed in the HPTP.

Upon completion of treatment as required by the HPTP, the CRC will submit a brief letter report(s), summarizing the findings of treatment on a construction segment basis to the BLM for distribution to the appropriate land-managing agencies for review and comment. Where treatments have been completed concurrently in multiple construction segments, findings may be summarized in a single report. The BLM will provide the CRC with comments within 72 hours of receipt of the letter report. The CRC will revise the report within 72 hours and submit the report to the BLM for approval.

Following completion of all treatment activities the CRC will prepare a comprehensive report. The CRC will submit the report to the BLM for distribution to the appropriate land-managing agencies and SHPO for review and comment. The BLM will provide the CRC with comments within 90 days of receipt of the report. The CRC will revise the report within 90 days in accordance with the comments obtained from the reviewing parties,

and submit the revised report to the BLM. Upon BLM's approval, the BLM will submit the final report to the SHPO and appropriate land-managing agencies.

10. Changes in Construction Right-of-way/Ancillary Areas (Variances). If the Applicant proposes to reroute a portion of the right-of-way, or activities are proposed in ancillary areas where no previous Class III inventory has been conducted, the CRC will survey the Project area as identified in Appendix C.

    A. Where **no cultural resources** are identified during such inventory, the CRC will submit copies of the inventory letter report to the BLM for distribution to the appropriate land-managing agencies for review and comment. The BLM and appropriate land-managing agencies will provide the CRC comments within 72 hours of receipt of the report. The CRC will revise the report in accordance with the comments obtained from the reviewing parties. Final copies of these reports will be compiled by BLM into a single package for submission to the SHPO at the end of the Project.

    B. Where the CRC finds cultural resources that are recommended **not eligible** for the National Register (i.e. no historic properties affected), the CRC will submit copies of the inventory letter report to the BLM for distribution to the appropriate land-managing agencies, Tribes and Consulting Parties for review and comment within 72 hours. The BLM will provide the CRC comments within 96 hours of receipt of the report. The CRC will revise the report in accordance with the comments obtained from the reviewing parties. Final copies of these reports will be compiled by BLM into a single package for submission to the SHPO at the end of the Project.

    C. Where the CRC finds cultural resources and recommends that they are **eligible** for the National Register (i.e. historic properties affected), the CRC will submit copies of the inventory letter report to the BLM for distribution to the appropriate land-managing agencies, Tribes and Consulting Parties for review and comment within 72 hours. The BLM will provide the CRC comments within 96 hours of receipt of the report. The CRC will revise the report in accordance with the comments obtained from the reviewing parties.

    This report will also evaluate the direct or indirect effects of the Project on those properties and identify any treatment measures required by the HPTP. The BLM will request comments and concurrence of the SHPO with regard to agency determinations. The SHPO will have 14 calendar days, from receipt of the request, to provide comment to the BLM. BLM will respond to SHPO comments, if any, within 72 hours. If the SHPO does not respond in 14 calendar days from receipt of the request, BLM may assume the SHPO has no objection and concurs with the agency's determination.

11. Curation. The BLM will ensure that all collections and associated records resulting from identification and data recovery efforts are curated in accordance with 36 CFR 79, with

the exception of those collections recovered from private land, which will be returned to their owners (at private landowner's request). Collections that may be repatriated in accordance with the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) and applicable state laws (i.e., UCA § 9-9-401 to 9-9-406) (i.e., human remains, associated and unassociated funerary objects, sacred objects, and objects of cultural patrimony) will be curated in accordance with 36 CFR 79 until they have been repatriated. All collections resulting from investigations on any involved Utah state lands will be curated in accordance with Utah Code 53B-17-601 to 603.

The Applicant will bear all costs of curation. The CRC will provide a written agreement with a BLM approved curation facility for the curation of collections and associated records prior to treatment of historic properties.

12. Inadvertent Discoveries. The HPTP will include specific procedures for dealing with inadvertent discoveries. At a minimum, these procedures will include those described in this Stipulation. In the event that cultural resources are discovered during ground-disturbing activities, the CRC, construction personnel or the Applicant will immediately notify the BLM, USFS, SHPO, and/or the appropriate land-managing agency. Indian Tribes that may attach religious and cultural significance to such resources will be notified by the BLM and consulted.

The CRC or appropriate Applicant's designated official (Monitor) will halt or redirect construction work from the discovery site. The discovery will be protected as directed by the HPTP. A minimum 200 meter buffer on all sides of the discovery location will be established where no construction activities will occur until approval is obtained from the Authorized Officer. This buffer may be expanded to protect the discovery from direct or reasonably foreseeable indirect effects. The Applicant will halt or redirect all work within the buffer zone for a period of up to 72 hours in order to assess the nature of the discovery and to determine and implement the necessary course of action as determined by the BLM and SHPO, and/or other land-managing agencies, as appropriate pursuant to the land jurisdiction. Work will not resume within the buffer zone until such time as the BLM and/or appropriate land-managing agency authorizes resumption. Work may continue uninterrupted in areas external to the buffer zone if they remain accessible without traversing the protected area surrounding the discovery.

The CRC will submit a letter report detailing the discovery, treatment as required by the HPTP, and the results of the investigation to the BLM for distribution to the appropriate land-managing agencies and Tribes for review and comment. The BLM will provide the CRC with comments within 72 hours of receipt of the report. The CRC will revise the report in accordance with the comments obtained from the reviewing parties, and submit the revised report to the BLM. Upon approval, the BLM will submit it to the SHPO.

Following completion of construction activities the CRC will prepare a report documenting all treatments for inadvertent discoveries. The CRC will submit the report to the BLM for distribution to the appropriate land-managing agencies and SHPO for review

and comment. The BLM will provide the CRC with comments within 90 days of receipt of the report. The CRC will revise the report within 90 days in accordance with the comments obtained from the reviewing parties, and submit the revised report to the BLM. Upon approval, the BLM will submit it to the SHPO.

13. Discovery of Human Remains. If human remains are discovered during any phase of the Project, all work, including construction or other ground-disturbing activities, within 200 meters of the discovery will cease, and the Applicant will protect the discovery, as directed by the HPTP. Land ownership will determine the regulations to be followed.

    A. If human remains are discovered on Federal lands procedures will follow those outlined in the NAGPRA (Public Law 101-601, 104 Statute 3048; 43 CFR Part 10) and applicable State Laws regarding the identification and treatment of human remains (UCA 76-9-704; UCA 9-8-302; UCA 9-8-309; UCA 9-9-401 to 9-9-403). Work will resume at the discretion of the appropriate land-managing agency once all requirements are met under applicable Federal and State Law.

    B. If human remains are discovered on non-Federal lands BLM will adhere to Utah Codes 9-8-309, 76-9-704, and 9-9-403. In accordance with 9-8-309 and 76-9-704, all activity in the area shall cease and local law enforcement, the landowner, and the Antiquities Section of the Division of State History should be notified immediately. If law enforcement determines that the remains are ancient then the Antiquities Section may advise on retrieval or retrieve the remains with the landowner's permission. The Antiquities Section may also advise on the determination of ownership and disposition of Native American remains in accordance with UCA 9-9-403. Work will resume at the discretion of the appropriate land-managing agency in consultation with Antiquites Section once all requirements are met under applicable State and local laws.

14. Training of Construction Personnel. The Applicant will train all personnel (including new or added personnel) who will be involved in construction, construction zone rehabilitation, operation, and maintenance of this transmission line on site avoidance measures and the protection of cultural resources. This instruction will be a part of the applicant's preconstruction environmental training program. This environmental training program will also apply to personnel hired after the project has started. Signatories and Tribes participating in this Agreement will be invited to participate in the development of this program.

15. Financial Security. The Applicant will post a financial security (such as a surety bond, letter of credit, etc.) with the BLM in an amount sufficient to cover all post-fieldwork costs associated with implementing the HPTP, or other mitigative activities, as negotiated by the Applicant where they contract for services in support of this Agreement. Such costs may include, but are not limited to treatment; fieldwork; post-field analyses; research and report preparation; interim and summary reports preparation; and the curation of Project documentation and artifact collections in a BLM-approved curation facility. The Applicant will post a financial security prior to BLM issuing a NTP.

A. The security posted is subject to forfeiture if the Applicant does not complete tasks within the time period established by the treatment selected; provided, however, that the BLM and Applicant may agree to extend any such time periods. The BLM will notify Applicant that the security is subject to forfeiture and will allow Applicant 15 days to respond before action is taken to forfeit the security.

B. The BLM will release the financial security, in whole or in part, as specific tasks are completed and accepted by the BLM.

16. Annual Meeting. The BLM will invite Agencies, Tribes and Consulting Parties to an annual meeting to review the implementation of this Agreement. This meeting will commence one year after execution of this Agreement, and will continue annually until the completion of the Project or termination of this Agreement. Participants may attend this meeting by conference line. The BLM will provide participants with an update on project schedule, status, and any ongoing relevant cultural resources monitoring or mitigation activities, discovery situations, or outstanding tasks to be completed under this Agreement or the HPTP.

17. Dispute Resolution. Should any party to this PA object to implementation of the measures stipulated in this PA, they shall provide written notice to the BLM of the reason for, and a justification of, the objection. Upon acceptance of such notice, the BLM shall consult for up to 30 days with the Consulting Parties to this PA to resolve the objection. If the BLM determines that the objection cannot be resolved, the BLM shall forward all documentation relevant to the dispute to the ACHP. Within 30 days after receipt of all pertinent documentation, the ACHP shall either:

A. The ACHP shall provide the BLM with its advice on the resolution of the concern within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the BLM shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP or other Consulting Parties; and provide the Consulting Parties with a copy of this written response. The BLM will then proceed according to its final decision, or

B. If the ACHP does not provide its advice regarding the dispute within 30 days, the BLM may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the BLM shall prepare a written response that takes into account any timely comments regarding the dispute from the Consulting Parties for this Agreement, and provide them and the ACHP with a copy of such written response.

The BLM's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute will remain unchanged.

18. Amendment. Any Signatory, including Invited Signatories, to this Agreement may request that it be amended, whereupon the Consulting Parties will consult in accordance with 36 CFR Part 800.14 to consider such amendment. All proposed amendments will be subject to a 30-day review period. Any amendment will be effective upon receipt of the signature of the last Signatory/Invited Signatory Party.

19. Term and Termination. This Agreement will be effective upon receipt of the signature of the last Signatory/Invited Signatory Party and will automatically terminate on the tenth anniversary thereof, ca. 2022, unless the Consulting Parties agree to extend the term hereof. Any Signatory, including Invited Signatories, may terminate this Agreement by providing 30 days notice to the other Parties, provided that the Parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of a termination, the BLM will comply with 36 CFR Part 800.3 through 800.7 with regard to individual actions covered by this Agreement.

Execution of this Agreement by the Signatories and implementation of its terms evidence that BLM has taken into account the effects of this Project on historic properties and afforded the ACHP an opportunity to comment.

DRAFT

SIGNATORY PARTIES:

Bureau of Land Management, Color Country District

By:_____ Title: Color Country District Manager
Signature

Todd S Christensen_____ Date:_____
Printed

US Forest Service – Dixie National Forest

By:_____ Title: Forest Supervisor, Fish Lake National Forest
Signature

Allan Rowley_____ Date:_____
Printed

Utah State Historic Preservation Officer

By:_____ Title: State Historic Preservation Officer
Signature

Wilson G. Martin_____ Date:_____
Printed

Advisory Council on Historic Preservation

By:_____ Title: Executive Director
Signature

John M. Fowler_____ Date:_____
Printed

DRAFT

National Park Service

By:_____ Title: National Park Service Historian
Signature

Lysa Wegman-French Date:_____
Printed

State of Utah, School and Institutional Trust Lands Administration

By:_____ Title: Director
Signature

Kevin S. Carter Date:_____
Printed

Utah Department of Transportation

By:_____ Title: Director Region 4 UDOT
Signature

Nathan Lee Date:_____
Printed

INVITED SIGNATORY PARTIES:

PacifiCorp (Rocky Mountain Power)

By:_____ Title: Director, Transmission Services
Signature

Todd Jensen Date:_____
Printed

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CONCURRING PARTIES:
Tribal Governments

Paiute Indian Tribe of Utah

By:_____ Title: Tribal Chairwoman, Paiute Indian Tribe of Utah
Signature

Jeanine Borchardt Date:_____
Printed

Other Entities

The Church of Jesus Christ of Latter Day Saints

By:_____ Title: Assistant Church Historian and Recorder
Signature

Richard E. Turley, Jr Date:_____
Printed

Milford Archaeological Research Institute

By:_____ Title: President
Signature

Mari Pritchard Parker Date:_____
Printed

Mountain Meadows Association

By:_____ Title: President
Signature

Terry Fancher Date:_____
Printed

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Mountain Meadows Massacre Descendents

By:_____ Title: President
Signature

Patty Norris Date:_____
Printed

Mountain Meadows Monument Foundation

By:_____ Title: President
Signature

Scott Fancher Date:_____
Printed

National Trust for Historic Preservation

By:_____ Title:_____
Signature

_____ Date:_____
Printed

Old Spanish Trail Association

By:_____ Title: Designated Representative
Signature (Past President)

Al Matheson Date:_____
Printed

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Oregon-California Trails Association

By:_____ Title: Preservation Officer
Signature

T. Michael Smith Date:_____
Printed

Utah Public Lands Policy Coordination Office

By:_____ Title: Director
Signature

Kathleen Clarke Date:_____
Printed

Utah Rock Art Research Association

By:_____ Title: President
Signature

Ben Everitt Date:_____
Printed

We Nooch Society

By:_____ Title: President
Signature

Steve Shaffer Date:_____
Printed

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APPENDIX A

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT

TRIBAL CONSULTATION SUMMARY

Early in the environmental process, the Bureau of Land Management (BLM) initiated contact with several American Indian Tribes in accordance with various environmental laws and Executive Orders[1]. While no American Indian reservations or lands owned in fee by Tribes are crossed within the Sigurd to Red Butte No. 2 345kV Transmission Project (Project) area, the BLM identified several American Indian Tribes whose traditional territories are within the Project area.

As part of scoping, the BLM mailed letters, dated December 17, 2009 to thirteen American Indian Tribes and the Navajo Utah Commission to inform them of and determine their interest in the Project. These Tribal groups included:

- Confederated Tribes of Goshute Nation
- Fallon Paiute-Shoshone
- Hopi Tribe
- Kaibab Band of Paiute Indians
- Moapa Band of Paiute Indians
- Navajo Nation
- Navajo Utah Commission
- Northwestern Band of Shoshone Nation
- Paiute Indian Tribe of Utah
- San Juan Southern Paiute Tribe
- Southern Ute Tribe
- Ute Indian Tribe
- Ute Mountain Ute Tribe
- White Mesa Ute Tribe (Band of the Ute Mountain Ute)

The Tribes also were asked to determine the need for further study related to the identification of traditional cultural properties in the Project area that may be affected by the Project. Results of the consultation effort will be documented in the Project Record.

Through BLMs ongoing government-to-government consultation with potentially interested Tribes, four of the fourteen Tribal entities contacted have verbally deferred to the Paiute Indian Tribe of Utah to represent their tribal interests and concerns regarding the Project during consultations with BLM:

[1] National Environmental Policy Act; National Historic Preservation Act, as amended; American Indian Religious Freedom Act of 1978; Native American Graves Protection and Repatriation Act, as amended; Federal Land Policy and Management Act, Archaeological Resources Protection Act of 1979; Executive Order 11593 – Protection and Enhancement of the Cultural Environment; Executive Order 12898 – Environmental Justice; Executive Order 13007 – Indian Sacred Sites; Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments

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- Kaibab Band of Paiute Indians
- Moapa Band of Paiute Indians
- Northwestern Band of Shoshone Nation
- Ute Indian Tribe

These four Tribes, however, can resume direct consultations with the BLM at any time during the Project, if they so choose. The BLM will continue on-going consultations with the Tribes and, in doing so, will keep the Tribes informed regarding the current status of the Project.

Two of the fourteen Tribal entities contacted have elected not to actively participate in the preparation of this Agreement, however, these tribes have requested to be kept informed regarding the project and can resume direct consultations with the BLM at any time during the Project, if they so choose. The BLM will continue on-going consultations with the Tribes and, in doing so, will keep the Tribes informed regarding the current status of the Project.

- Navajo Nation
- Navajo Utah Commission

One of the fourteen Tribal entities contacted have participated in consultation and have been invited to be concurring parties to this Agreement:

- Paiute Indian Tribe of Utah

Seven of the fourteen Tribal entities contacted have declined to participate in the Project:

- Confederated Tribes of Goshute Nation
- Fallon Paiute-Shoshone
- Hopi Tribe
- San Juan Southern Paiute Tribe
- Southern Ute Tribe
- Ute Mountain Ute Tribe
- White Mesa Ute Tribe (Band of the Ute Mountain Ute)

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APPENDIX B

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT ROLES, RESPONSIBILITIES, AND DEFINITIONS

This Programmatic Agreement (Agreement) for the Sigurd to Red Butte No. 2 345kV Transmission Project recognizes three classes of participants or Consulting Parties—Signatory Parties, Invited Signatories, and Concurring Parties.

Signatory Parties: The Signatory Parties have sole authority to execute, amend, or terminate the Agreement. The signatory parties have a statutory obligation and authority under 36 Code of Federal Regulations [CFR] 800.1 and 36 CFR 800.2 to fulfill the requirements of Section 106 of the National Historic Preservation Act. Utah State Agencies also have a responsibility to comply with Utah Code Annotated (UCA) § 9-8-404. The Signatory Parties are as follows:

- USDI Bureau of Land Management, Color Country District
- USDA Forest Service, Dixie National Forest
- Utah State Historic Preservation Officer
- Advisory Council on Historic Preservation
- National Park service
- State of Utah School and Institutional Trust Lands Administration
- Utah Department Of Transportation

Invited Signatory Parties: The BLM, as lead federal agency, may invite additional parties as Signatories to this Agreement. Invited Signatory Parties that sign the Agreement shall have the same rights as other signatories with regard to seeking amendment or termination of the Agreement. Invited Signatory Parties are those parties that have assumed a responsibility under the Agreement. The Invited Signatory parties are as follows:

- PacifiCorp

Concurring Parties: The Concurring or Interested Parties are participating in the Section 106 process due to the nature of their legal or economic relation to the Project or affected properties, or their concern with the Project's effects on historic properties. The refusal of any concurring party invited to concur in the Agreement does not invalidate the Agreement. The Concurring Parties are as follows:

- Navajo Nation
- Navajo Utah Commission
- Paiute Indian Tribe of Utah
- The Church of Jesus Christ of Latter Day Saints
- Milford Archaeological Research Institute
- Mountain Meadows Association
- Mountain Meadows Massacre Descendents
- Mountain Meadows Monument Foundation
- National Trust for Historic Preservation

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- Old Spanish Trail Association
- Oregon-California Trails Association
- Utah Public Lands Policy Coordination Office
- Utah Rock Art Research Association
- We Nooch Society

Definitions Used in this Programmatic Agreement:

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

Authorized Officer – The Authorized Officer for this project is the BLM Color Country District Manager and/or his or her delegated representative.

Consulting Party – Any party that has participated in the development of this agreement (i.e. Concurring Party, Invited Signatory, and Signatory)

Concurring Party – A party who signs this Agreement but is not legally, or financially, responsible for completion of stipulations set forth in the Agreement.

Invited Signatory – The authorized official may invite additional parties to sign the agreement and they have the same rights with regard to amendments and termination as the signatories.

Signatory – Parties who have legal or financial responsibilities for completions of stipulations of the Agreement.

Consultation – The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process. The Secretary's "Standards and Guidelines for Federal Agency Preservation Programs pursuant to the National Historic Preservation Act" provide further guidance on consultation.

Cultural Resources – Any location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence that is older than 50 years. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. They may be but are not necessarily eligible for the NRHP.

Cultural Resource Consultant – A qualified and BLM permitted professional consultant in cultural resources (archaeologist, historian, ethnographer, historic architect, architectural historian, or anthropologist) who is responsible for implementing cultural resource inventories and who prepares cultural resource documents, reports, analysis, records, and professional literature. CRCs must meet the Secretary of the Interior's Professional Qualification Standards.

Cultural Resource Inventory – A systematic field examination of an area to gather information regarding the number, location, condition, distribution, and significance of cultural resources present. The Cultural Resource Inventory is also referred to as a Class III survey, Class III Inventory, or intensive level survey. Cultural resource inventory typically requires a systematic pedestrian review of an area with transect intervals as designated by the Lead Agency.

Effect – Alteration of the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register of Historic Places.

Historic Property – Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Eligible for Inclusion in the National Register – Includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria.

Indian Tribe – Any Indian tribe, band, nation, or other organized group or community, including a native village, regional corporation, or village corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602), which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

National Historic Landmark – A historic property that the Secretary of the Interior has designated a National Historic Landmark.

National Register – The National Register of Historic Places maintained by the Secretary of the Interior.

National Register Criteria – The criteria established by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register (36 CFR § 60).

Programmatic Agreement – A document that records the terms and conditions agreed upon to resolve the potential adverse effects of a Federal agency program, complex Project or other situations in accordance with 36 CFR § 800.14(b).

State Historic Preservation Officer – The official appointed or designated pursuant to section 101(b)(1) of the act to administer the State Historic Preservation Program or a representative designated to act for the State Historic Preservation Officer.

Undertaking – A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.

APPENDIX C

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT: SECTION 106 METHODS AND REPORTING

INTRODUCTION

The purpose of this document is to define the procedures for identifying, recording, reporting, and evaluating cultural resources along the proposed Sigurd to Red Butte No. 2 345kV Transmission Project (Project). PacifiCorp (doing business as Rocky Mountain Power), proposes to construct, operate, and maintain the high-voltage transmission line to meet growing energy demands in southern Utah.

Cultural resources or cultural properties, as defined in BLM Manual 8100, are locations of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. They may be but are not necessarily eligible for the NRHP.

The methods proposed here are guided by and in compliance with the following federal legislation: the Antiquities Act of 1906 (Public Law [P.L.] 59-209; 34 Stat. 225; 16 United States Code [USC] 431-433); the Historic Sites Act of 1935 (PL 74-292; 49 Statute [Stat.] 666; 16 USC 461-467); the National Historic Preservation Act of 1966 (NHPA, as amended 2002)(PL89-665; 80 Stat. 915; 16 USC 470 as amended by PL 90-243, PL 93-54, PL 94-422, and PL 94-458); Executive Order 11593 of 1971; Archaeological and Historical Conservation Act of 1974 (PL 86-523, as amended by PL 93-291; 16 USC 469-469c); Archaeological Resources Protection Act (ARPA), American Indian Religious Freedom Act of 1978 (AIRFA) (PL 95-341); Native American Graves Protection and Repatriation Act of 1990 (NAGPRA, P.L.101-601); National Register of Historic Places (NRHP), National Register Bulletins; and other pertinent legislation and implementing regulations. Utah State legislation appropriate to the Project is the Utah State Antiquities Act of 1993 (UCA Sec. 9-8-101-806).

METHODS

The following subsection describes the methods that will be used to identify cultural resources in the direct and indirect APEs, evaluate resources for NRHP eligibility, and assess the potential effects of the Project on cultural resources. The scope of analysis will entail two phases of cultural resource inventory: Class I and Class III.

Introduction and Overall Approach

The analysis of effects on cultural resources will involve identifying the properties located within the study corridors that are eligible for, or listed on, the NRHP and defining the characteristics

of each property that contribute to its eligibility. Cultural resources that are eligible to the NRHP are also referenced throughout this document, and elsewhere, as historic properties.

For this Project, an initial impact analysis will be conducted through the National Environmental Policy Act (NEPA) process. Baseline data will be used in order to make an informed decision about the range of potential effects each alternative may have on cultural resources. After an alternative route, or routes, has/have been selected, an intensive Class III level cultural resource inventory will be conducted on the APEs to identify specific historic properties that would be adversely affected by the Project. Specific management determinations will then be proposed, such as avoidance or mitigative treatment.

The baseline data used in the NEPA analysis will be derived from Class I and Class II inventories (described below). These will be summarized in a separate cultural resource technical report in support of the NEPA process. Pertinent Class I and Class II data will be incorporated into the Class III inventory report for the transmission line right-of-way.

The transmission line Class III cultural resource inventory will consist of an intensive pedestrian survey along a selected alternative route, or routes. The results of the survey will be presented in a Class III cultural resource report. The final Class III report will allow the BLM, in consultation with the SHPO, other land-managing agencies involved, Tribes, and Consulting Parties to this Agreement to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties.

The locations of ancillary facilities associated with the Project, such as roads, substations, and staging areas, have not yet been completely identified. Additional Class III cultural resource inventories will be required as these areas are identified. Each will be documented in a separate addendum report, which will be subject to the same formal review process as the Class III Inventory. Construction variance inventories may be required in order to allow for minor shifts in the line, tower locations, or other features as necessitated by engineering during actual construction. Each variance location will be subject to a cultural resource evaluation and surveyed if required. All cultural resource inventory work necessitated by a construction variance request will be documented in an addendum report and submitted for formal review as previously described.

Archaeological Site Definition

Cultural resources (cultural properties) will be defined as in the BLMs *The Foundations for Managing Cultural Resources – Glossary of Terms,* BLM 8100 Manual. The BLM 8100 Manual defines cultural resources as follows:

> Cultural resource or cultural property: a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting,

and utilizing for public benefit described in this Manual series. They may be but are not necessarily eligible for the National Register.

Archaeological sites will be defined as in the BLMs *Guidelines for Identifying Cultural resources, Handbook H-8110: Section V, Part A.* The BLM Handbook H-8110 defines archaeological sites as follows:

> The minimum criteria for defining archaeological sites, requiring use of the IMACS site record, are that sites should contain remains of past human activity that are at least 50 years old and should consist of one or more of the following:
>
> 1. At least 10 artifacts of a single class (e.g., 10 sherds) within 10-meter diameter area, except when all pieces appear to originate from a single source (e.g., one ceramic pot, one glass bottle).
>
> 2. At least 15 artifacts which include at least 2 classes of artifact types (e.g., sherds, nails, glass) within a 10-meter diameter area.
>
> 3. One or more archaeological features in temporal association with any number of artifacts.
>
> 4. Two or more temporally associated archaeological features without artifacts.

Data Needs and Collection Methods

The BLM has identified three generally accepted levels or classes of cultural resource research and inventory. Class I studies involve conducting a file search of existing literature and preparing an overview of an area. Class II inventories are statistically based sample surveys covering only a portion of a particular area. Using the database generated by the survey, predictions are then made for the entire area for types and densities of sites, as well as the topographic and environmental settings within which they could be found. Class III inventories consist of a complete pedestrian survey of a geographic area and are designed so that the vast majority of cultural resources in that area are identified and recorded. In order to assist in the identification of historic properties (36 CFR 800.4) the BLM shall ensure that an intensive Class III inventory will be completed for the selected route(s). The Class III pedestrian inventory will be completed in two phases, Phase I will consist of a Class I inventory, or file search of existing literature, and Phase II will consist of Class III inventory of the selected route(s).

<u>Class I Cultural Resources Inventory</u>

The Class I cultural resources inventory for the Project will involve obtaining existing information on known sites and previous cultural resource projects and published sources from the files of a number of agencies and institutions, including the SHPO, BLM, and other appropriate land-managing agencies. In addition to this information, it will be necessary to consult the NRHP and the county historic files of the SHPO. The transmission line study corridor for the Class I records review will be 4 miles wide (2 miles on either side of the reference centerline).

In addition to a review of existing data, the Class I report will summarize previous contact and consultation with Native American Tribes that have aboriginal ties to lands within the Project area. It will contain information regarding Traditional Cultural Properties (TCPs) identified in previous reports, the context of burials, and a discussion of past documentation processes of TCPs in the Project area. The Class I and Class II report are summarized in the Project's EIS. The pertinent Class I data will be included in the Class III report for the preferred/selected alternative

Class II Cultural Resources Inventory

A Class II cultural resource inventory will be conducted for areas where an insufficient body of comparative data exists to complete general impact analysis for use in the NEPA process. Class II data collected for the EIS will later be incorporated into the Class III inventory where applicable. Class II inventories for the Project are conducted as a function of the NEPA/EIS alternatives analysis process and are not a part of, or subject to, this Agreement.

Class III Cultural Resources Inventory

Once a route has been selected for construction, a Class III cultural resource inventory will be conducted of the entire route, its access corridors, and any associated ancillary facilities or additional work spaces, as required. The Class III inventory will consist of a pedestrian survey of the direct effects APEs. This survey will be executed by archaeologists walking parallel transects varying between 15 and 45 meters in width (as determined by the involved land-managing agency and Consulting Parties) to cover the width of the direct effects APEs. Any areas identified by the BLM, or other involved land-managing agencies, where previous inventories have provided adequate survey coverage at levels consistent with current standards may be excluded from inventory at the discretion of the agency in consultation with the SHPO and Consulting Parties. In addition, areas with excessively steep terrain, or extensive surface disturbance, and no potential for sites, may be excluded from inventory at the discretion of the agency in consultation with the SHPO.

The locations of ancillary facilities such as roads, substations, and staging areas, have not yet been completely identified. Should they be identified by the time the Class III intensive pedestrian inventory is underway, they may be included in the same effort as the inventory of the selected route. Some ancillary facilities are likely to be designed after the inventory of the selected route is complete; in which case, additional Class III inventories and reports will be required. All areas inventoried at the Class III level, and all associated cultural resources, will be documented and included in these reports.

Upon completion of the Class III inventory, a Class III cultural resource inventory report will be prepared for review. The final Class III report will permit the BLM, in consultation with the SHPO, and other involved land-managing agencies, to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties. All previously identified historic properties and unevaluated sites that are within the direct effects APEs, but are not directly affected by construction activities or visual effects, will be assessed for indirect effects. As additional portions of the Project area may be added to include ancillary facilities (e.g., roads, staging areas, etc.), additional Class III inventory and reporting may be required.

A Historic Properties Treatment Plan (HPTP) for historic properties identified during the Class III inventory as potentially affected by the Project will be prepared. This will require consultation between the BLM, SHPO, and Consulting Parties to this Agreement. Avoidance of effects on cultural resources will be preferred; however, mitigation efforts to ameliorate adverse effects on historic properties may be considered when and where avoidance is determined impracticable.

The Class III inventory will be focused on cultural resources that are available for visual inspection. Cultural resource sites, including both prehistoric and historic archaeological sites, will be recorded on IMACS forms. Each site will be described, mapped, photographed, and evaluated for eligibility for the NRHP. Previously recorded sites within the Class III inventory corridors will be revisited and an IMACS form Addendum prepared documenting the current state of the site, any additional materials located, or significant changes observed.

Should historic buildings be encountered during Class III inventories, documentation will be completed using a Utah Office of Historic Preservation 106 Reconnaissance Level Site Form. Pursuant to agreement with the BLM as lead agency, only properties dating to 1961 or earlier will be recorded, except sites younger than 50-years old that exhibit historical significance, to compensate for the anticipated life of the Project. Previously recorded architectural resources in the survey area will be revisited, and inventory forms will be updated if changes have occurred and resources re-evaluated for eligibility to the NRHP.

General Land Office (GLO) maps will be reviewed by the CRC in order to identify locations of historic features, such as canals, roads and railroads, and historic sites, such as homesteads, mining structures, etc., once located within the Class III inventory corridor. If GLO features are found they will be documented during the Class III survey following standard procedures.

All reports detailing Class III level cultural resource inventories will include those items specified in the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. An intensive survey report should document (a) the kinds of properties looked for; (b) the boundaries of the area surveyed; (c) the method of survey, including an estimate of the extent of survey coverage; (d) a record of the precise location of all properties at a degree of accuracy that meets or exceeds the National Map Accuracy Standard for 1:24,000 scale maps; and (e) information on the appearance, significance, integrity and boundaries of each property sufficient to permit an evaluation of its significance. Reports should include discussion of the area's cultural history, previous research in the area, and treatment recommendations. Appendices to this report will include IMACS site forms and/or State Reconnaissance Level Inventory Forms, maps, and photographs for all sites visited during the inventory.

SIGNIFICANCE CRITERIA

Eligibility to the NRHP is determined by Federal legislation contained in 36 CFR Part 60.4, which states that consideration is given to "districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and; (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past;

or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history."

Federal legislation, 36 CFR Part 800, states that cultural resource assessments of Federal Projects should result in one of three determinations: (a) no historic properties affected, either there are no historic properties present or there are historic properties present, but the Project will have no effect upon them as defined in 36 CFR 800.16; (b) no adverse effect or (c) adverse effect, the Project may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Consideration will be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP.

Ultimately, the eligibility of sites will be determined by the lead Federal agency (BLM) in consultation with other State and Federal land-managing agencies and the SHPO. The lead Federal agency, in consultation with other State and Federal land-managing agencies (as applicable), and the SHPO determine the significance of effects and subsequent treatment related to these resources. If the eligibility of a previously documented site outside of the direct effects APE is not determined, it is assumed for the purpose of this analysis that the site is eligible. Adverse effects on historic properties include, but are not limited to, the following:

(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

ADDITIONAL SURVEY METHODS AND REPORTING

Obsidian Study

The CRC will collect samples of obsidian artifacts for sourcing and hydration studies, as appropriate. All obsidian projectile points, regardless of context (both sites and isolates), will be collected and subjected to XRF source analysis. Hydration studies would only be conducted on obsidian artifacts recovered during excavation due to the limited utility of this form of analysis for artifacts identified in a surface context. The obsidian sample will include up to 15 specimens per site. However, in the case of excessive numbers, or where extensive surface collection may significantly alter a site, a sampling strategy will be used. In the case in which a site appears to have distinct components or loci, multiple samples will be collected. Obsidian collection in direct association with known obsidian sources will be limited to collection of formed tools. The results of the obsidian studies will be integrated with the site forms and included in the inventory report as a chapter, section, or appendix.

Cultural Resources Visual Effects Study

In addition to the Class I and Class III cultural resource inventories, a cultural resource visual sensitivity assessment methodology will be developed to identify cultural resource properties that could be considered visually sensitive and potentially affected by the project. For purposes of this methodology, as under the ACHP guidelines, a visual effect must alter, directly or indirectly, a characteristic of that property that qualifies it for inclusion to the NRHP, and do so in a manner that would diminish that property's integrity of setting, feeling, and/or association (ACHP 2010; Apply Criteria of Adverse Effect. Available at http://www.achp.gov/apply.html. Accessed October 21, 2010). Prior to submission of the Class III cultural resource inventory report, the CRC will develop a methodology for the Cultural Resources Visual Effects Study which will be reviewed by the participants in the Programmatic Agreement and approved by the BLM.

Locational Information

The CRC will collect locational information, global positional system (GPS) data, geographic information system (GIS) data, and meta data in a format compatible with BLM systems currently in use (.shp files). Draft locational information data, including centerline, site boundary data, and other collected GPS, GIS, and meta data will be provided to the lead agency by the CRC within 30 days of the completion of the cultural resource survey. Final GPS, GIS, and meta data will be submitted to BLM with the final Class III report for submission to the SHPO.

Linear Sites

Recordation of prehistoric linear sites will follow the same standards and format as documentation for all other prehistoric resources. Recording of historic linear resources will involve both archival and field techniques and will follow the procedures outlined in the Utah Professional Archaeological Council (UPAC) Linear Sites Guidelines. Potential linear sites will be identified through the use of GLO and other historic maps, archival data, pre-1961 aerial

photographs that can be located for the study corridor, and field observations. Historic resources will be used to determine what linear features may have existed in 1961 or earlier and will be used as a source to determine if linear features, such as two-track roads, trails, waterlines, ditches, and other linear features, should be recorded or not. Potential linear sites will be digitized from geo-referenced photographs where possible, and otherwise digitized from geo-referenced maps into the Project's GIS database so that they can be overlain on Project field maps. Linear sites will be followed out 400 meters or farther in order to determine eligibility. The results of the linear site investigations will be included in the Class III inventory report, either as an integrated chapter or section of the report or as an appendix.

According to the UPAC Linear Sites Guidelines (http://www.upaconline.org/linear.htm), linear resources (e.g., railroads, roads, trails, ditches, etc.) crossing and extending beyond the APE for direct effects shall be divided into three groups:

1. Roads or linear features with no mention in the Agency records, archival data or included on General Land Office (GLO) plats, no associated features or dateable artifacts, or which have lost all integrity through extensive blading will not be recorded;

2. Roads, linear features, or other resources included on GLO plats but which are not associated with features or dateable artifacts, and do not appear to be significant on the basis of known archival data shall be treated as "isolated linear segments." These resources shall be recorded in tabular form and collected data shall include a minimum of two (2) separate GPS points at each end of the linear features within the APE;

3. Roads or other linear features included on GLO plats (especially named roads) or features known from other archival data to be potentially significant, or which have associated features or dateable artifacts, shall be recorded on IMACS site forms. Potential segments of historic trails, such as the Old Spanish Trail, shall be recorded on IMACS forms

Isolated Occurrences

Any cultural material that does not meet the definition of a "site", as in *Guidelines for Identifying Cultural Resources, Handbook H-8110*, will be documented as an isolated occurrence. Isolated occurrence data will be numbered sequentially in a table in the report.

Project Numbers

Any additional survey reports or addendums completed after the Class III report has been submitted will receive a new Project number.

Appendix H – Visual Resources Supporting Data

APPENDIX H – VISUAL RESOURCES SUPPORTING DATA

As discussed in Chapter 3, visual resources were inventoried and assessed for all land jurisdictions within a 6-mile-wide corridor (centered on the Sigurd to Red Butte No. 2 – 345-kilovolt [kV] Transmission Project [Project] reference centerlines), including Bureau of Land Management (BLM), U.S. Forest Service (USFS), Bureau of Indian Affairs, state, and private. Landscape scenery, sensitive viewers, and agency visual management objectives were the primary inventory components as described in the following section. Where available, planning-level agency data were acquired and processed for inclusion in the affected environment and environmental effects discussions. Where such data were deficient, or were too general to be used for impact analysis, data were developed and reviewed by applicable agency visual resource personnel. Following is a summary of the methodology used to inventory visual resources (Figure H-1).

H.1 Inventory Methodology

The visual resource inventory (VRI) methodology was developed in consultation with agency visual resource specialists and was derived from, and is consistent with, the BLM Visual Resource Management (VRM) Manual (BLM 1986) and USFS Scenery Management System (SMS) as described in *Landscape Aesthetics: A Handbook for Scenery Management* (USFS 1995) (Figure H-2). Visual resources were inventoried on all land affected by the Project based on the review and consideration of aerial photography, agency-specific maps, planning documents (i.e., municipal plans and Resource Management Plans [RMP]), and consultation with appropriate personnel. All inventory components were verified through detailed field investigations and reviewed and updated based on agency consultation. Landscape scenery, sensitive viewers, and agency visual management objectives are described below.

H.1.1 Landscape Scenery

H.1.1.1 Scenic Quality/Scenic Attractiveness

Both scenic quality (BLM) and scenic attractiveness (USFS) are measures of the inherent aesthetics of a given landscape and were inventoried for the Project. The inventory of landscape scenery was conducted for the entire study, regardless of jurisdiction, within a 3-mile-wide corridor centered on the Project reference centerlines. Scenic Quality/Scenic Attractiveness Rating Worksheets were developed in accordance with BLM and USFS visual policy during field investigations and revised as needed based on review by applicable visual resource personnel. The ratings of each scenic quality rating unit (SQRU) were developed in the context of the entire physiographic region and compared for consistency with agency planning-level documentation where available. Scenic quality was assessed and mapped at a scale commensurate with assessing impacts resulting from the Project (i.e., greater than 1:24,000) based on review of aerial imagery, Southwest Regional Gap Analysis Project landcover data, U.S. Geological Survey topographic maps, and 30-meter digital elevation models. Below is a brief summary of the scenic quality ratings that were applied to inventoried landscapes.

- Class A – landscapes with distinctive or outstanding diversity or interest
- Class B – landscapes with common or average diversity or interest
- Class C – landscapes with minimal diversity or interest

The majority of the landscapes crossed by the Project were typical of Class C scenery (i.e., little landform variation occupied by low diversity plant communities). Limited Class B landscapes crossed by the Project were identified in the Pahvant Mountain Range, Tushar Mountains, Clear Creek Canyon, Sevier River floodplain, Bull Valley Mountains, Atchinson Mountains, Mineral Mountains, and their surrounding foothills. Class A scenic quality areas were limited to isolated locations in the Pine Valley Mountains and Marysvale Canyon.

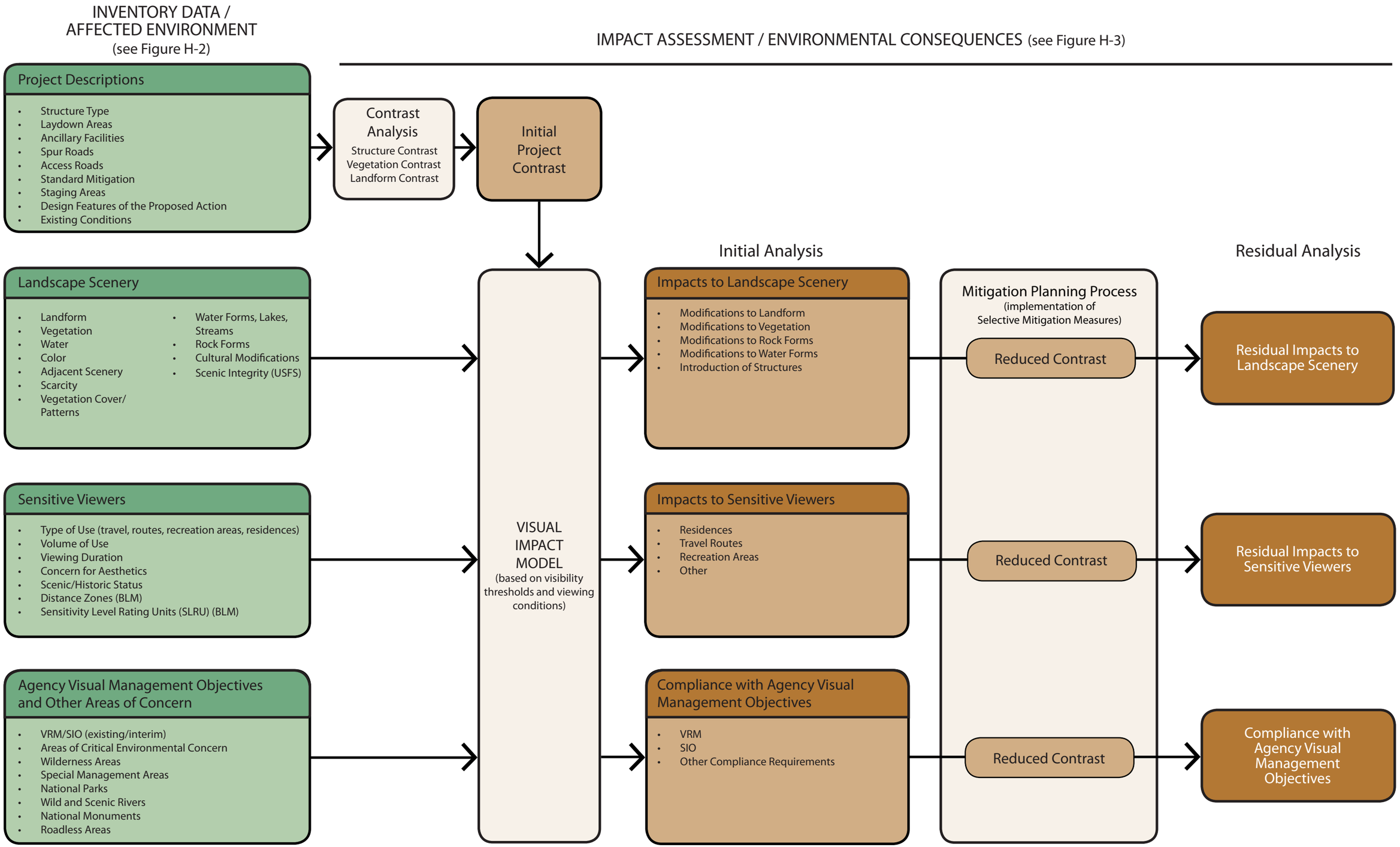
H.1.1.2 Scenic Integrity

Scenic integrity refers to the measure of intactness associated with the landscape components that define a given landscape (i.e., landform, vegetation, rockform, etc.). Note the measurement of scenic integrity is specific to USFS-administered lands based on consultation with USFS landscape architects. In that regard, landscape integrity was used to adjust scenic quality/scenic attractiveness delineation on USFS-administered lands. A landscape that appears largely natural with minimal cultural modifications is considered to have high scenic integrity. Those landscapes occupied by human introductions (i.e., existing utility corridors) that modify the natural character of a landscape are characterized as having moderate-to-low scenic integrity depending on the influence of such introductions. Some human introductions of landscape features can be compatible with the landscape character (e.g., trails, campgrounds, picnic areas, chained areas, etc.) and can contribute or enhance scenic integrity through increasing landscape variety and developing a sense of place (consultation with USFS, September 2010). Scenic integrity was inventoried as very high, high, moderate, low, very low, and unacceptably low as described in the SMS handbook. Table H-1 provides the range and associated definitions of integrity levels.

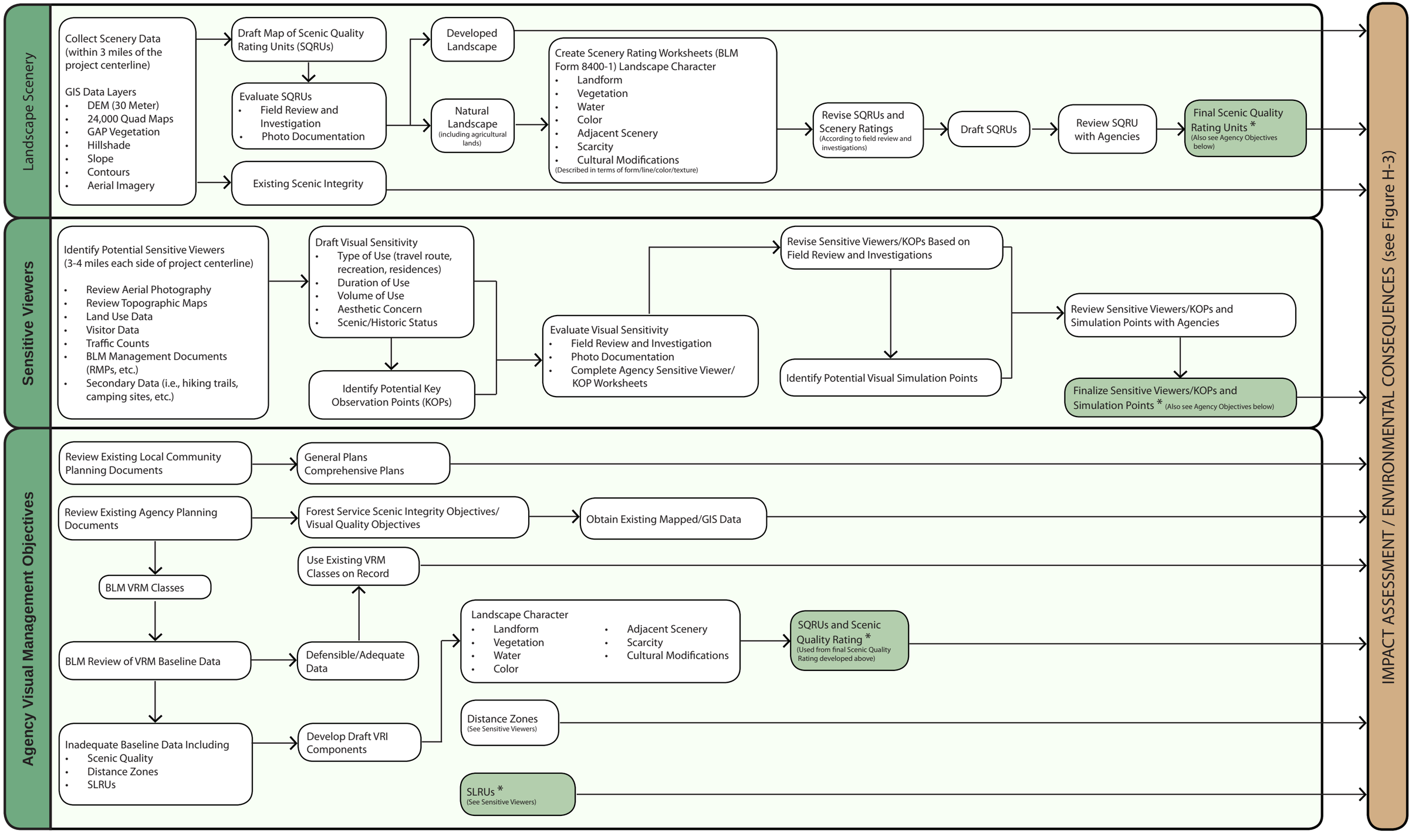
TABLE H-1
U.S. FOREST SERVICE SCENIC INTEGRITY LEVELS

Level	Description
Very High	The valued landscape character “is” intact with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level.
High	The valued landscape character “appears” intact. Deviations may be present but must repeat form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
Moderate	The valued landscape character “appears slightly altered.” Noticeable deviations must remain visually subordinate to the landscape character being viewed.
Low	The valued landscape character “appears moderately altered.” Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetation type changes, or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.
Very Low	The valued landscape character “appears heavily altered.” Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural opening, vegetation type changes, or architectural styles within or outside the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so elements such as unnatural edges, roads, landings, and structures do not dominate the composition.
Unacceptably Low	The valued landscape being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation.

SOURCE: U.S. Forest Service 1995



Sigurd to Red Butte No. 2
345kV Transmission Project
Figure H-1 Visual Study Flowchart



Sigurd to Red Butte No. 2
345kV Transmission Project
Figure H-2 Visual Inventory Process

Scenic integrity was inventoried in the Dixie National Forest as shown in the included Dixie National Forest Scenic Integrity Objectives (SIO) Report within 3 miles of Project reference centerlines. On the Fishlake National Forest, scenic integrity was inventoried along the Project alternative route. Scenic integrity ratings were assigned to USFS landscapes using Geographic Information Systems (GIS), considering aerial imagery, forest management plans, U.S. Geological Survey topographic maps, inventoried roadless areas, and recreation opportunity spectrum information. Scenic integrity was verified through field investigations and reviewed and finalized with input from USFS landscape architects.

H.1.2 Sensitive Viewers

The term "sensitive viewers" represents the viewing public that potentially would be affected by the Project and relates to BLM VRM key observation points (KOPs) and Sensitivity Level Rating Units (SLRU) (discussed in Section H.1.3.2), as well as the USFS's concern levels. Sensitive viewers that may have views of the proposed Project were identified and inventoried up to 3 miles from the proposed Project. Additional sensitive viewers, from 3 to 5 miles and beyond, were identified on a case-by-case basis in conjunction with the agencies that have national importance. The identification of sensitive viewers was based on agency management plans; existing and future land uses; federal and state online databases; consultation with federal, state, and local recreation planners; and field investigations. KOPs representing typical views of the Project area were identified and documented using high resolution photography and sensitive viewer inventory forms. Sensitive viewers that would have views of the Project include:

- Residences – single-family detached structures, apartments, and permanent mobile homes or mobile home parks
- Travel routes – highways and roads used by travelers, designated scenic or historic byways, and recreation roads
- Recreation areas – existing recreation sites used for picnicking, camping, hiking, scenic overlooks, rest areas, parks, and other recreation areas

H.1.2.1 Residences

Major residential development is located in the northern portion of the Project area, including Sigurd, Richfield, Elsinore, and Joseph. In the central portion of the Project area, the towns of Milford and Minersville contain concentrated residential development. In the southern portion of the Project area, the communities of Enterprise, Central, Pinto, and Pine Valley contain concentrated residential development. Dispersed residences are located in the Sevier River Valley, Pinto Creek corridor, Escalante Desert, Escalante Valley, and Mountain Meadows.

H.1.2.2 Travel Corridors, Designated Scenic Roads, and Other Roads

Highways include those in the interstate system, as well as federal and state maintained roads. Interstate highways and U.S. highways in the study corridors include Interstate 15 (I-15), Interstate 70 (I-70), and U.S. 89. The following Utah state routes (SR) are located in the visual resource study corridor:

- SR 18
- SR 21
- SR 24
- SR 56
- SR 118
- SR 119
- SR 120
- SR 130
- SR 161
- SR 219
- SR 257
- SR 258

Existing designated national, state, and local scenic highways, backways, and byways also were inventoried in the study corridors. The following designated scenic route was identified:

- Kimberly/Big John Road Scenic Backway (Forest Road [FR] 113) – This scenic backway starts at I-70 in the Fishlake National Forest and travels south to the Beaver Canyon Scenic Backway. Recreation opportunities include camping, hiking, access to historical mining areas, and access to high peaks within the Tushar Mountains.

Additional roads connect major highways, travel corridors, or population centers to locally and regionally significant areas such as regional parks, camping areas, hiking and biking trail systems, and other recreation areas. The following roads were identified in the study area:

- FR 007 – Ox Valley and the Hardscrabble Trail are accessed by this trail from SR 219.
- FR 009 – Pinto is accessed by this road which connects SR 18 and SR 56.
- FR 011 – Pinto and Pine Valley are connected by this road which starts in Newcastle and continues south to Pine Valley where it terminates.
- FR 014 – Pinto Spring Trailhead is accessed by this road from FR 009.
- FR 035 – Central and Pine Valley are linked by this road which begins at SR 18 and terminates in Pine Valley.
- FR 255 – Mill Canyon Trailhead is accessed by this road from FR 011.
- FR 375 – Mountain Meadows Massacre Site National Historic Landmark is accessed by this road from SR 18.
- FR 478 – Access to Castle Rock Campground is provided by this road from I-70.
- FR 565 – Water Canyon Trailhead is accessed by this road from FR 011.
- Baker Dam Campground Destination Route – This route provides access to the Baker Dam Campground from SR 18.
- Bench Road – Enterprise and Newcastle are connected by this road.
- Beryl Milford Road – Beryl and Lund are linked to Milford by this road.
- Clear Creek Canyon Road – Fremont Indian State Park is connected by this road to I-70.
- Iron County Road 1740 – Access to Three Peaks Special Recreation Management Area is achieved by this road from the Lund Highway.
- Lund Highway – Lund is connected to SR 56 and Cedar City by this road.
- Rock Corral Recreation Area Destination Route – This route provides access to the Rock Corral Recreation Area from SR 21.

H.1.2.3 Recreation and Special Management Areas

National

- Old Spanish National Historic Trail (NHT) – This trail stretches from Santa Fe, New Mexico, to Los Angeles, California, and is part of the NHT system. The delineation of the trail centerline was acquired from the NHT database.
- Escalante Trail – This trail may be eligible for NHT designation and was delineated from data acquired from the BLM Cedar City Field Office.
- American Discovery Trail – This trail is a National Millennium Trail, which crosses the country from east to west. It shares its alignment with existing roads and trails.
- Paiute All-terrain Vehicle Trail Network – This is a network of trails through the central portion of Utah, including access to Richfield, Joseph, Elsinore, the Fishlake National Forest, and Fremont Indian State Park. There are more than 900 miles of trail with portions that share alignments with USFS roads.

BLM

- Three Peaks Special Recreation Management Area (BLM Cedar City Field Office) – This management area contains a system of off-highway vehicle, equestrian, and mountain bike trails. There is also a picnic area and staging area located east of the Three Peaks Range.
- Baker Dam Campground (BLM St. George Field Office) – This developed camping facility is located southwest of Baker Dam Reservoir and is accessed from SR 18.
- Baker Dam Reservoir (BLM St. George Field Office) – This reservoir is located south of Central and is used primarily for fishing since it does not have a boat ramp.

U.S. Forest Service

- Pine Valley Mountain Wilderness Area (Dixie National Forest) – This designated wilderness area is located south and east of the community of Pine Valley and covers more than 50,000 acres. Recreation opportunities include hiking and camping at dispersed sites.
- Castle Rock Campground (Fishlake National Forest) – This developed camping facility is located southwest of Fremont Indian State Park and is accessed by FR 478.
- Goat Spring Trail (Dixie National Forest) – This trail splits from the Indian Hollow Spring Trail and continues to the south traveling across the boundary of the Pine Valley Mountain Wilderness Area to Goat Spring.
- Summit/Rock Springs Trail (Dixie National Forest) – This trail begins at the Pinto Spring Trailhead and continues to the south where it provides access to the Pine Valley Mountain Wilderness Area.
- Water Canyon Trail and Trailhead (Dixie National Forest) – This trail begins at FR 565 and continues to the east where it provides access to the Pine Valley Mountain Wilderness Area.
- Pinto Spring Trailhead (Dixie National Forest) – Also known as Paradise Trailhead, it is located at the end of FR 014. Trails leading from this trailhead provide access to the Pine Valley Mountain Wilderness Area.
- Cemetery Trail and Trailhead (Dixie National Forest) – This trailhead is located adjacent to the Pine Valley Cemetery north of the community of Pine Valley. The trail follows the base of the Pine Valley Mountains to the north offering views of Pine Valley.
- Hardscrabble Trail (Dixie National Forest) – This trail starts along FR 007 and continues east along the Bull Valley Mountains.
- Indian Hollow Spring Trail (Dixie National Forest) – This trail starts at the west side of Pine Valley and continues to the southwest to Indian Hollow Spring.
- Shinbone Trail (Dixie National Forest) – This trail starts along FR 007 and continues southeast along the Bull Valley Mountains where it connects with the Hardscrabble Trail.
- Fish Creek Eligible Wild and Scenic River (Fishlake National Forest) – In the Wild and Scenic River Suitability Study for National Forest System Lands in Utah, it was determined that a 15-mile section of the Fish Creek (the upper 4.3 miles were classified as wild and the lower 10.5 miles were classified as recreational) is suitable and recommended for inclusion into the National Wild and Scenic River system. It is located approximately 5 miles west of the Fremont Indian State Park.

State

- Fremont Indian State Park – This state park is located adjacent to I-70 in Clear Creek Canyon. Amenities and includes hiking trails, picnic areas, and visitor center/museum.

- Annabella Wildlife Management Area – Located south of Richfield, activities are dispersed and focused primarily on hunting and fishing.
- Beaver County Wildlife Management Area – Made up of four parcels: two located south of Beaver, one located northeast of Beaver, and one located on the east side of the Mineral Mountains. Activities are dispersed and focused primarily on hunting.
- Snow College Richfield Campus – This campus is on the west side of Richfield and contains the Sevier Valley Center, which hosts a variety of community events.

County

- Beaver County Fairgrounds
- Sevier County Fairgrounds

Local Parks

- Elsinore Community Park
- Enterprise Baseball Fields
- Enterprise Heritage Park
- Enterprise Rodeo Grounds
- Joseph Community Park
- Milford Community Park
- Milford Heritage Park
- Milford Fairgrounds
- Minersville Community Park
- Richfield Baseball Fields
- Richfield Lions Park
- Richfield Community Park
- Rocky Ford Reservoir Park
- Sevier County Fairgrounds

National Historic Sites

- Mountain Meadows Massacre Site National Historic Landmark
- Cove Fort Historic Site
- Pine Valley Chapel
- Jens Larson Lime Kiln Interpretive Site

Other Recreation Sites

- Richfield Canal Trail
- Marysvale Canyon Trail
- Newcastle Reservoir
- Hamblin Historic Town Site
- Jefferson Hunt Memorial

Private

- Cove Fort Campground
- Flying U Campground
- J.R. Munchies Campground
- Richfield Kampgrounds of America

- Cove View Golf Course
- Milford Golf Course

H.1.2.4 Viewer Sensitivity

Viewer sensitivity pertains to the degree of concern for changes to the landscape as seen from a particular sensitive viewing location and is used to distinguish viewer impacts among Project alternatives (Section H.2). Viewer sensitivity considers concepts indentified in the BLM VRM system, but relate to viewers rather than the landscape (refer to BLM SLRU, Section H.1.3.2). Viewer sensitivity ranged from high to moderate and was based on the following five criteria:

- viewing duration
- volume of use
- concern for aesthetics
- scenic or historic status
- type of use (travel routes, recreation areas, and residences)

Areas that have a high-use volume typically have a higher sensitivity or concern for changes in the landscape. Sensitive viewing locations that have a scenic or historic status (designations) typically are managed for aesthetics or a particular viewshed and therefore default to a high sensitivity. Special management areas, usually designated by federal agencies, have a high concern for aesthetics if visual resources were considered as part of the designation (i.e., areas of critical environmental concern designated based on high scenic quality versus an area of critical environmental concern designated for biological resources only). Visual sensitivity also will vary with each type of viewer (i.e., a primitive viewer versus a trail viewer within a national monument). Table H-2 summarizes the sensitive viewer assessment.

TABLE H-2
VIEWER SENSITIVITY LEVEL SUMMARY

Area	View Duration	Use Volume	Aesthetic Concern	Designated Scenic/ Historic	Overall Sensitivity
Residences					
All Residences	Long	High	High	–	High
Travel Routes					
Interstate					
Interstate 15	Short	High	Low	–	Moderate
Interstate 70	Short	High	Low	–	Moderate
U.S. Highway					
U.S. 89	Short	High	Moderate	–	Moderate
Utah State Route					
State Route (SR) 18	Short	High	Moderate	–	Moderate
SR 21	Short	High	Moderate	–	Moderate
SR 24	Short	High	Moderate	–	Moderate
SR 56	Short	High	Moderate	–	Moderate
SR 118	Short	High	Moderate	–	Moderate
SR 119	Short	High	Moderate	–	Moderate
SR 120	Short	High	Moderate	–	Moderate
SR 130	Short	High	Moderate	–	Moderate
SR 161	Short	High	Moderate	–	Moderate
SR 219	Short	High	Moderate	–	Moderate
SR 257	Short	High	Moderate	–	Moderate
SR 258	Short	High	Moderate	–	Moderate

TABLE H-2
VIEWER SENSITIVITY LEVEL SUMMARY

Area	View Duration	Use Volume	Aesthetic Concern	Designated Scenic/ Historic	Overall Sensitivity
Designated Scenic Routes					
Kimberly / Big John Road Scenic Backway (FR 113)	Moderate	Low	High	Scenic	High
U.S. Forest Service Roads					
Forest Road (FR) 007 (access to Hardscrabble Trail)	Moderate	Moderate	Moderate	–	Moderate
FR 009 (access to Pinto)	Moderate	Moderate	Moderate	–	Moderate
FR 011 (access to Newcastle, Pinto, and Pine Valley)	Moderate	Moderate	Moderate	–	Moderate
FR 014 (access to Pinto Spring Trailhead)	Moderate	Low	Moderate	–	Moderate
FR 035 (access to Central and Pine Valley)	Moderate	High	High	–	High
FR 255 (access to Mill Canyon Trail)	Moderate	Low	Moderate	–	Moderate
FR 375 (access to Mountain Meadows Massacre Site National Historic Landmark)	Moderate	Moderate	High	–	High
FR 478 (access to Castle Rock Campground)	Moderate	Moderate	Moderate	–	Moderate
FR 565 (access to Water Canyon Trailhead)	Moderate	Low	Moderate	–	Moderate
Other Roads					
Baker Dam Campground Destination Route	Moderate	Moderate	Moderate	–	Moderate
Bench Road (access to Enterprise and Newcastle)	Moderate	Moderate	Moderate	–	Moderate
Beryl Milford Road (access to Beryl and Lund)	Moderate	Moderate	Moderate	–	Moderate
Clear Creek Canyon Road (access to Fremont Indian State Park)	Moderate	Moderate	High	–	High
Iron County Road 1740 (access to Three Peaks Special Recreation Management Area)	Moderate	Moderate	Moderate	–	Moderate
Lund Highway (access to Lund)	Moderate	Moderate	Moderate	–	Moderate
Rock Corral Recreation Area Destination Route	Moderate	Low	Moderate	–	Moderate
Parks, Recreation, and Special Management Areas					
National and Regional Trails					
Old Spanish National Historic Trail	Long	Low	High	Historic	High
Escalante Trail	Long	Low	High	Historic	High
American Discovery Trail	Long	Low	High	–	High
Paiute All-terrain Vehicle Trail Network	Moderate	Moderate	Moderate	–	Moderate

TABLE H-2
VIEWER SENSITIVITY LEVEL SUMMARY

Area	View Duration	Use Volume	Aesthetic Concern	Designated Scenic/ Historic	Overall Sensitivity
Bureau of Land Management Recreation Sites					
Three Peaks Special Recreation Management Area	Long	Moderate	Moderate	–	Moderate
Baker Dam Campground	Long	Moderate	Moderate	–	Moderate
Baker Dam Reservoir	Moderate	Moderate	Moderate	–	Moderate
U.S. Forest Service Recreation Sites					
Pine Valley Mountain Wilderness	Long	Moderate	High	–	High
Fish Creek (Wild and Scenic Eligible)	Long	Low	High	–	High
Goat Spring Trail	Long	Low	High	–	High
Summit/Rock Springs Trail	Long	Moderate	High	–	High
Water Canyon Trail and Trailhead	Long	Moderate	High	–	High
Pinto Spring Trailhead (Paradise Trailhead)	Long	Moderate	High	–	High
Castle Rock Campground	Long	Moderate	Moderate	–	Moderate
Cemetery Trail and Trailhead	Long	Moderate	Moderate	–	Moderate
Hardscrabble Trail	Long	Low	Moderate	–	Moderate
Indian Hollow Spring Trail	Long	Low	Moderate	–	Moderate
Shinbone Trail	Long	Low	Moderate	–	Moderate
State Parks and Management Areas					
Fremont Indian State Park	Long	Moderate	High	–	High
Annabella Wildlife Management Area	Long	Low	Moderate	–	Moderate
Beaver County Wildlife Management Area	Long	Low	Moderate	–	Moderate
County Park and Fairgrounds					
Beaver County Fairgrounds	Long	Low	Moderate	–	Moderate
Sevier County Fairgrounds	Long	Low	Moderate	–	Moderate
Local Trails				–	
Marysvale Canyon Trail	Long	High	Moderate	–	Moderate
Richfield Canal Trail	Long	High	Moderate	–	Moderate
Local Parks				–	
Elsinore Park	Long	Moderate	Moderate	–	Moderate
Enterprise Ball Fields	Moderate	Moderate	Moderate	–	Moderate
Enterprise Heritage Park	Moderate	Moderate	Moderate	–	Moderate
Enterprise Rodeo Grounds	Moderate	Moderate	Moderate	–	Moderate
Joseph Park	Long	Moderate	Moderate	–	Moderate
Milford Community Park	Long	Moderate	Moderate	–	Moderate
Milford Heritage Park	Long	Moderate	Moderate	–	Moderate
Milford Fairgrounds	Long	Low	Moderate	–	Moderate
Minersville Community Park	Long	Moderate	Moderate	–	Moderate
Richfield Ball Fields	Moderate	Moderate	Moderate	–	Moderate
Richfield Lions Park	Long	Moderate	Moderate	–	Moderate
Richfield Park	Long	Moderate	Moderate	–	Moderate
Rocky Ford Reservoir Park	Long	Low	Moderate	–	Moderate

TABLE H-2
VIEWER SENSITIVITY LEVEL SUMMARY

Area	View Duration	Use Volume	Aesthetic Concern	Designated Scenic/ Historic	Overall Sensitivity
Other Sites					
Pine Valley Chapel	Long	Moderate	Moderate	Historic	High
Cove Fort Historic Site	Long	High	High	Historic	High
Jens Larson Lime Kiln Interpretive Site	Long	Low	Moderate	Historic	High
Mountain Meadows Massacre Site National Historic Landmark	Long	Moderate	High	Historic	High
Snow College-Richfield Campus	Moderate	High	Low	–	Moderate
Cove Fort Campground	Long	Moderate	Moderate	–	Moderate
Flying U Campground	Long	Moderate	Moderate	–	Moderate
J.R. Munchies Campground	Long	Moderate	Moderate	–	Moderate
Richfield Kampgrounds of America	Long	Moderate	Moderate	–	Moderate
Cove View Golf Course	Long	Moderate	Moderate	–	Moderate
Milford Golf Course	Long	Low	Moderate	–	Moderate
Hamblin Town Site	Long	Low	Moderate	–	Moderate
Jefferson Hunt Memorial (Old Spanish National Historic Trail)	Moderate	Low	Moderate	–	Moderate
Newcastle Reservoir	Long	Moderate	Moderate	–	Moderate

H.1.3 BLM Visual Resource Inventory Components

Pursuant to the Federal Land Policy and Management Act, the BLM is required to consider scenic values of public lands as a resource that merits management and preservation as determined through the land use planning process. As a response to the Federal Land Policy and Management Act, the BLM devised the VRM system, with the primary objective of managing public lands in a manner that will protect the quality of the scenic (visual) values of these lands (Information Bulletin No. 98-135). In this regard, the VRM system (BLM Handbook H-8410-1) provides guidance relating to the visual resource inventory methodology the BLM applies to inventory scenic values, as well as to assess potential effects on such resources based on the analysis of visual contrast.

Consistent with procedures and concepts described previously, VRI data were collected and/or developed when appropriate per BLM Handbook H-8410-1 (Visual Resource Inventory). The primary VRI includes scenic quality, distance zones, and visual sensitivity, which are combined to develop VRI Classes, and are described in the following.

H.1.3.1 Scenic Quality

Scenic quality is a measure of the aesthetic value of landscape scenery based on analysis of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. The size of SQRUs may vary from several thousand acres to one hundred or less acres, depending on the homogeneity of the landscape features and the detail desired in the inventory. Generally, landscapes with a greater diversity of these features receive a higher scenic quality rating.

On BLM lands, scenic quality was provided by the Fillmore, Cedar City, and St. George Field Offices. Scenic quality for the Richfield Field Office was inventoried as part of the previously described Project-level assessment.

H.1.3.2 Sensitivity Level Rating Units

SLRUs determine the level of concern the public would express toward modifications in the landscape. They are defined by the types of users, amount of use, public interest, adjacent land uses, special management areas, and other factors (BLM 1986). The BLM has assigned land a high, medium, or low sensitivity level. These units often share a boundary with SQRUs but can be split based on a change in one of the previously listed factors.

On BLM lands, SLRUs were provided by the Cedar City and St. George Field Offices. In these field offices within the visual resource study area, sensitivity ranges from low to high. Developed recreation sites, historic sites, and areas adjacent to these sites generally possess a high sensitivity; moderate sensitivity areas are located primarily in mountainous terrain with dispersed recreation; and low sensitivity occurs in areas with little topographic relief and recreation. The Richfield and Fillmore Field Offices did not have this data. For the purpose of this Project-level study, SLRUs were inventoried through the description of sensitive viewers (Section H.1.2.4).

H.1.3.3 Distance Zones

Distance zones are subdivided areas of the landscape, based on the perception of scenery from viewing locations. Detail in the landscape or objects being viewed depend on the proximity to the viewers. The BLM uses three distance zones for the purposes of VRI, which are primarily based on how landscapes are viewed. The three distance zones are foreground-middleground, background, and seldom seen. The foreground-middleground distance zone includes areas seen from highways, rivers, or other viewing locations less than 5 miles away. Areas seen beyond the foreground-middleground distance zone, but less than 15 miles away, are in the background zone. Areas not seen within the foreground-middleground or background distance zones are in the seldom seen distance zone.

On BLM lands, distance zones were provided by the Cedar City and St. George Field Offices. The Richfield and Fillmore Field Offices did not have this data. A Project-level analysis of distance zones, as part of the sensitive viewer study, was conducted to describe distance zones in these field offices.

H.1.4 Federal Agency Visual Management Objectives

H.1.4.1 Bureau of Land Management

BLM-administered public land in the study area is managed under the Richfield Field Office RMP, Cedar/Beaver/Garfield/Antimony RMP, Warm Springs Resource Area RMP, and St. George Field Office RMP. The study area is predominately designated as VRM Class IV. Limited occurrences of VRM Class III designated lands that would be traversed by the Project. Class III lands are located along the east side of the Pahvant Range, through the Mineral Mountains, and south of the Red Butte Substation.

H.1.4.2 U.S. Forest Service

USFS-administered lands in the study area are managed under the Fishlake and Dixie Land and Resource Management Plans (and amendments). The SIO data for the Fishlake National Forest is at an inventory level, but will be used to determine compliance for the Project as directed by the USFS. The Project primarily crosses Moderate SIO-designated lands associated with the Fishlake National Forest designated utility window along I-70. Inventory SIO data for the Dixie National Forest were prepared as part of the Project (refer to Dixie National Forest SIO Report included at the end of Appendix H). Based on the SIO analysis, the Project would traverse primarily high SIO-designated lands. Moderate SIOs were primarily designated adjacent to SR 18.

H.2 Impact Methodology

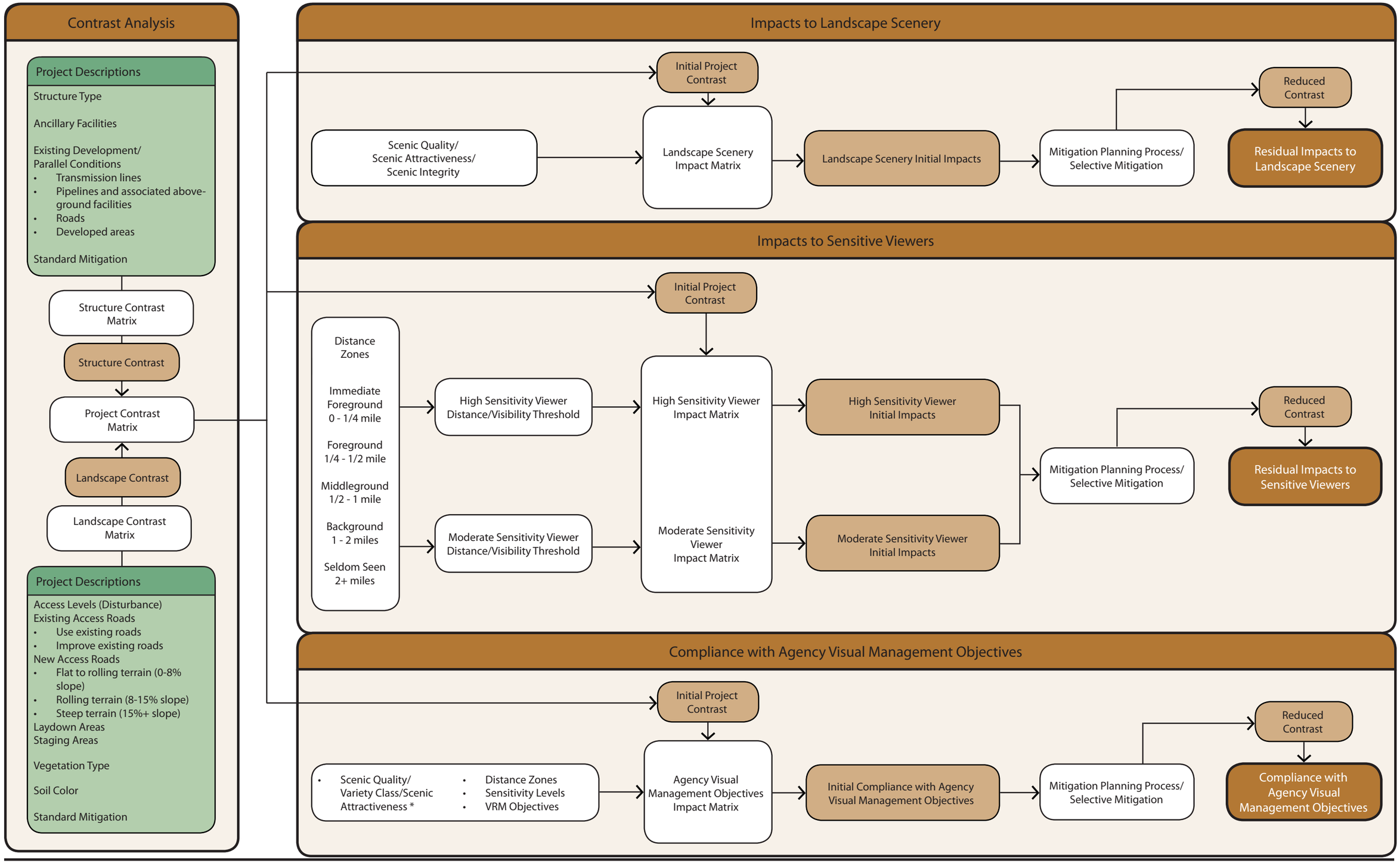
The methodology used to identify and characterize impacts considered is consistent with the BLM VRM and USFS SMS systems. Contrast, or the level of visual change, was measured in the context of landscape scenery, sensitive viewers, and compliance with established visual agency management objectives (Figure H-3).

H.2.1 Contrast

The visual contrast assessment was performed by evaluating visual elements (form, line, color, and texture) in the existing landscape with the visual elements associated with the proposed Project, including new transmission structures and conductors, partial clearing of the right-of-way depending on vegetation community, and the construction of permanent access roads. In this regard, landform, vegetation, and structural elements of the landscape were assessed in conjunction with the Project and assigned degrees of change/contrast, ranging from strong, moderate/strong, moderate, weak/moderate, or weak:

- Strong – contrast demands attention and strongly dominates the landscape
- Moderate/Strong – contrast begins to demand attention and is still moderately dominant in the landscape
- Moderate – contrast attracts attention but is co-dominant in the landscape
- Weak/Moderate – contrast begins to attract attention and is moderately subordinate in the landscape
- Weak – contrast can be seen but is subordinate in the landscape

The contrast analysis for the Project considered the visual elements of form, line, color, and texture associated with existing vegetation communities, landform (i.e., slope and topographic variation), and existing utility infrastructure within the Project area. Using aerial imagery, vegetation data, soils data, and information gathered during initial field investigations, changes to landform and vegetation (landscape contrast) and the introduction of structures to the landscape (structure contrast) resulting from the Project were assessed and mapped (digitized accordingly). Using GIS, landscape and structure contrast were combined into a project contrast model that served as a baseline of landscape change (contrast) along each alternative in its entirety. Using GIS, project contrast was combined with a scenic quality/scenic attractiveness rating to assess impacts on scenery. Similarly, project contrast was combined with the visibility analysis associated with sensitive viewers to determine impacts associated with sensitive viewers. Consistent with VRM Handbook 8431-1 – Visual Resource Contrast Rating, using worksheet 8400-1, contrast ratings were performed from each agency-approved KOP during field investigations to verify the impact model and document visual contrast resulting from the Project. These contrast ratings



Sigurd to Red Butte No. 2
345kV Transmission Project
Figure H-3 Visual Impact Model

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also were used to assess VRM class conformance for BLM-administered public lands. Applying this methodology resulted in a consistent characterization and documentation of visual resource impacts across all alternative routes being assessed for the Project.

H.2.1.1 Landscape Contrast

Landscape contrast was identified by evaluating access levels with vegetation cover (Table H-3). An access model was developed for the Project that estimated required road construction, which would result in permanent disturbance (access levels). Access levels (1, 2, 3, 4, or 5) were assigned along the Project reference centerline (refer to Chapter 2 for detailed information on access levels) and verified during field investigations as appropriate.

TABLE H-3
LANDSCAPE CONTRAST MATRIX

Vegetation Component	Access Level				
	1 Use Existing Access	**2 Improve Existing Access**	**3 New Access (0 to 8 percent slopes)**	**4 New Access (8 to 15 percent slopes)**	**5 New Access (Greater than 15 percent slopes)**
Group 1: grassland, sagebrush, and agriculture (vegetation under 12 feet)	Weak	Weak	Weak	Weak/ Moderate	Moderate
Group 2: pinyon-juniper and woodland (vegetation over 12 feet)	Weak	Weak/ Moderate	Weak/ Moderate	Moderate	Moderate/ Strong

H.2.1.2 Structure Contrast

Structure contrast was determined based on the visual characteristics of the proposed structures compared to the visual characteristics of the existing corridor, including form, line, and color. Based on the proposed structures (H-frame self-weathering steel), moderate/strong structure contrasts would result from the introduction of transmission line structures in areas where currently none are present, and weak structure contrasts would result from the introduction of transmission line structures where similar ones already exist. Table H-4 on the following pages provides the results of the structure contrast assessment.

TABLE H-4
STRUCTURE CONTRAST

Number	Landscape Unit	Existing Corridor	Proposed Corridor	Structure Contrast			
				Form	Line	Color	Overall
1	Sagebrush Basin Sagebrush Valley Foothills Clear Creek Canyon Pahvant Range Tushar Mountains Juniper Hills Atchinson Mountains Bull Valley Mountains	None	110’ Proposed 345kV	M/S	M/S	M/S	**M/S**
2	Sagebrush Valley	Interstate	800’ 110’ Proposed 345kV Interstate	M/S	M/S	M/S	**M/S**
3	Sagebrush Basin Foothills	Pipeline	1,500’ 110’ Proposed 345kV Pipeline	M/S	M/S	M/S	**M/S**
4	Sagebrush Basin Foothills	Pipeline	70’ 110’ Proposed 345kV Pipeline	M/S	M/S	M/S	**M/S**
5	Sagebrush Basin	Industry	1,500’ 110’ Proposed 345kV Industry	M/S	M/S	M	**M/S**
6	Mineral Mountains Juniper Hills	46kV	≈200’ 110’ Proposed 345kV 46kV	M/S	M	M/S	**M/S**

TABLE H-4
STRUCTURE CONTRAST

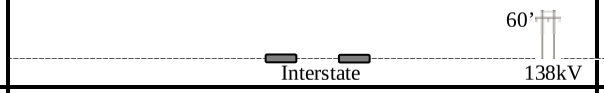
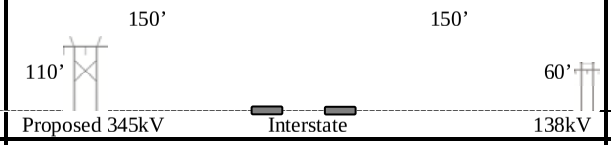
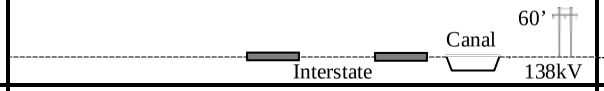
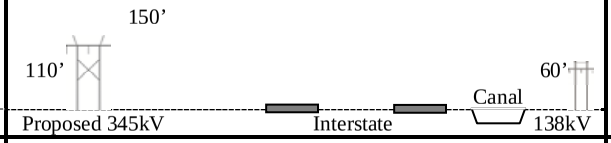
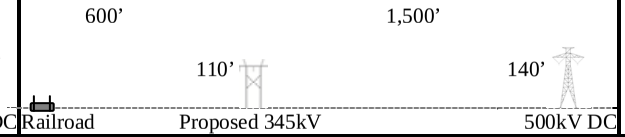
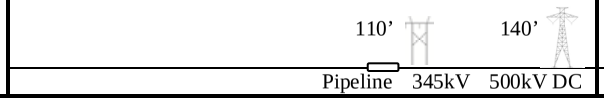
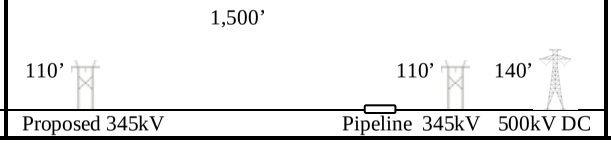
Number	Landscape Unit	Existing Corridor	Proposed Corridor	Structure Contrast			
				Form	Line	Color	Overall
7	Sagebrush Valley			M	M	M/S	**M**
8	Sagebrush Valley			M	M	M/S	**M**
9	Sagebrush Valley			M	W/M	M/S	**M**
10	Sagebrush Basin			M/S	M	W/M	**M**
11	Sagebrush Basin			M/S	M	W/M	**M**
12	Sagebrush Basin			M/S	M	W/M	**M**
13	Foothills Sagebrush Basin			W/M	M	M	**W/M**

TABLE H-4
STRUCTURE CONTRAST

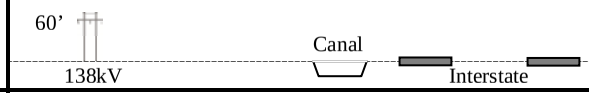
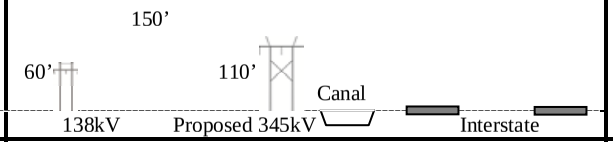
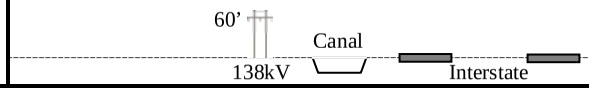
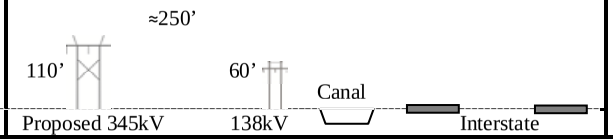
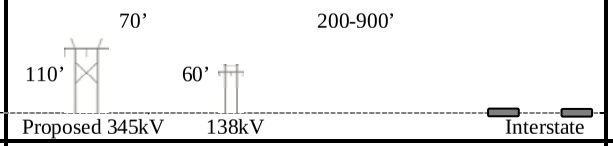
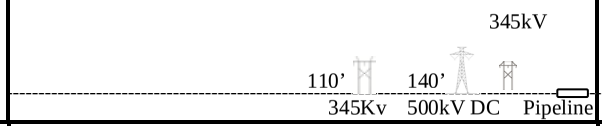
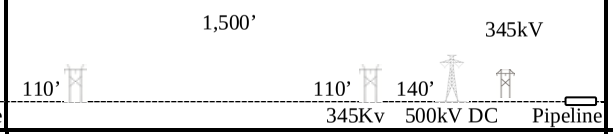
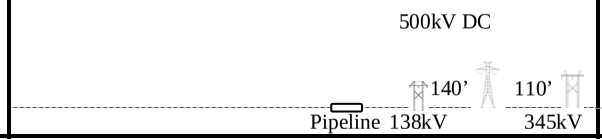
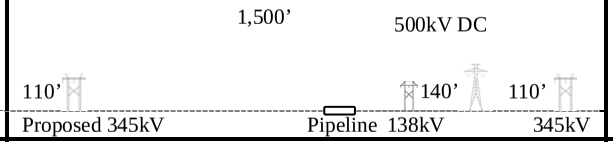
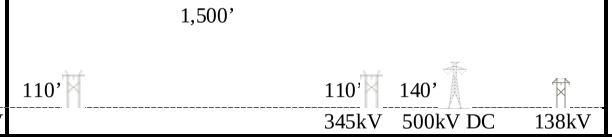
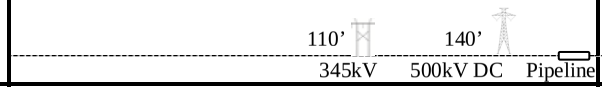
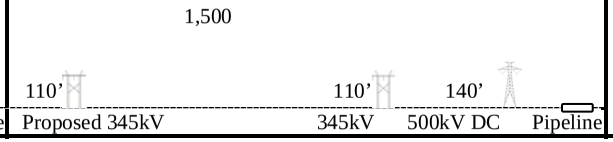
Number	Landscape Unit	Existing Corridor	Proposed Corridor	Structure Contrast			
				Form	Line	Color	Overall
14	Sagebrush Valley			W/M	W/M	M	**W/M**
15	Sagebrush Valley			W/M	W/M	M	**W/M**
16	Pahvant Range Tushar Mountains			W/M	W/M	M	**W/M**
17	Sagebrush Basin Foothills Atchinson Mountains			W/M	W/M	M	**W/M**
18	Sagebrush Basin Foothills			W/M	W/M	M	**W/M**
19	Sagebrush Basin Foothills			W/M	W/M	M	**W/M**
20	Foothills Sagebrush Basin			W/M	W/M	M	**W/M**

TABLE H-4
STRUCTURE CONTRAST

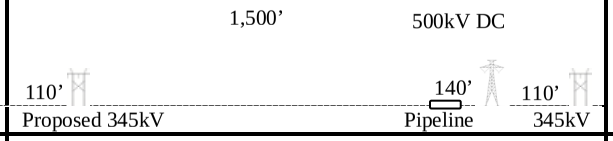
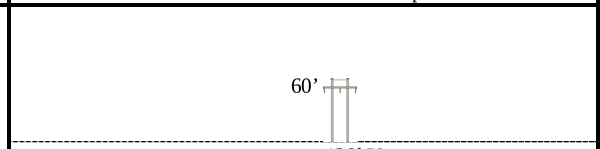
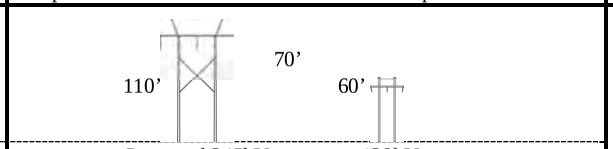
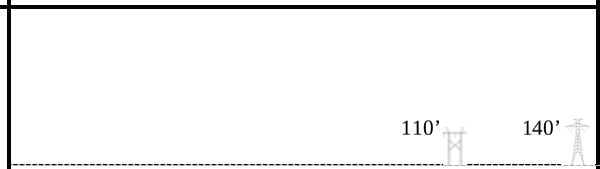
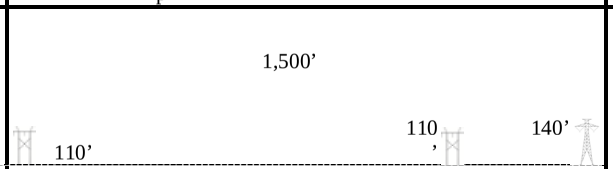
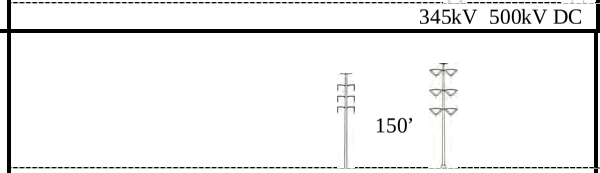
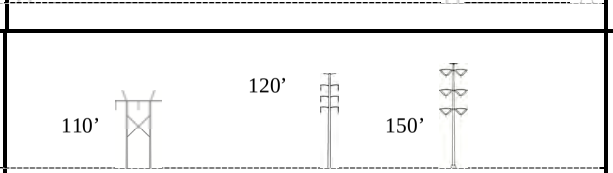
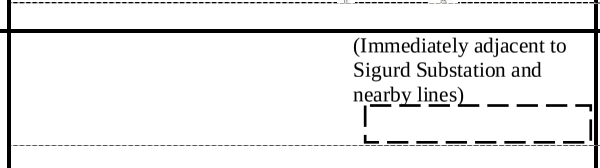
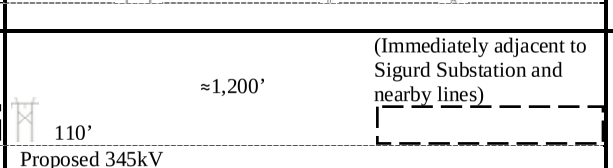
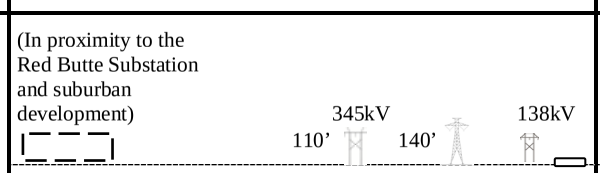
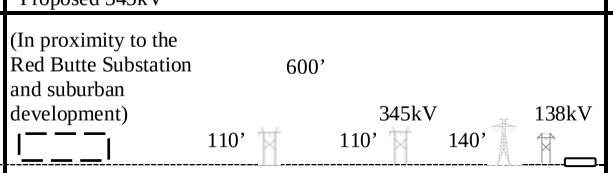
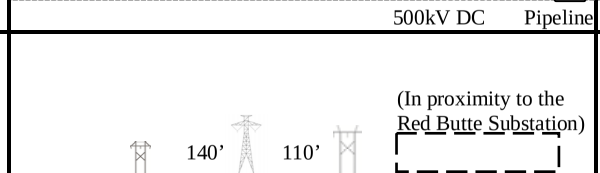
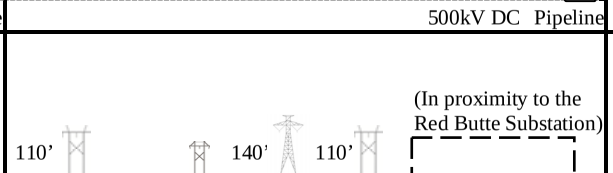
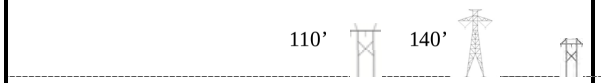
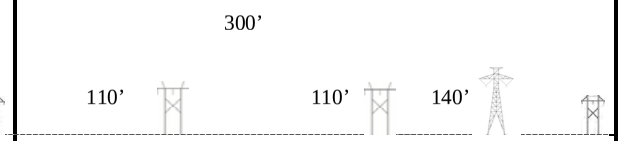
Number	Landscape Unit	Existing Corridor	Proposed Corridor	Structure Contrast			
				Form	Line	Color	Overall
21	Foothills Sagebrush Basin			W/M	W/M	M	**W/M**
22	Juniper Hills Tushar Mountains Clear Creek Canyon			W/M	W/M	M	**W/M**
23	Sagebrush Basin			W/M	W/M	M	**W/M**
24	Juniper Hills Sagebrush Basin			W/M	W	W	**W**
25	Sagebrush Valley			W/M	W	W	**W**
26	Foothills			W	W	W	**W**
27	Foothills			W	W	W	**W**

TABLE H-4
STRUCTURE CONTRAST

Number	Landscape Unit	Existing Corridor	Proposed Corridor	Structure Contrast			
				Form	Line	Color	Overall
28	Foothills Sagebrush Valley			W	W	W	**W**

NOTES:
DC = Direct Current
kV = Kilovolt
M = Moderate
M/S = Moderate/Strong
W = Weak
W/M = Weak/Moderate

H.2.1.3 Project Contrast

Landscape and structure contrast were combined using GIS to identify and map project contrast for all alternatives (Table H-5). In that regard, project contrast provides the foundation for impact assessment of the Project based on concepts consistent with the VRM and SMS systems.

TABLE H-5
PROJECT CONTRAST MATRIX

Structure Contrast	Landscape Contrast			
	Weak	Weak/Moderate	Moderate	Moderate/Strong
Weak	Weak	Weak	Weak/Moderate	Moderate
Weak/Moderate	Weak/Moderate	Weak/Moderate	Moderate	Moderate
Moderate	Weak/Moderate	Moderate	Moderate	Moderate/Strong
Moderate/Strong	Moderate	Moderate	Moderate/Strong	Moderate/Strong

H.2.2 Impacts on Landscape Scenery

To determine landscape scenery impacts, project contrast (Section H.2.1.3) was evaluated in context with inventoried landscapes (and associated scenic quality ratings) that would be crossed by the Project (Table H-6). Developed landscapes (i.e., commercial, industrial, etc.) do not have a scenic quality rating and therefore were not evaluated from a scenery standpoint. After initial impacts on landscape scenery were determined, selective mitigation was applied for residual impact analysis. For example, if a section of moderate project contrast crosses a Class B landscape, the initial impact on landscape scenery would be moderate. After employing appropriate mitigation measures, residual impacts on landscape scenery would be reduced to a low/moderate level based on a decrease in project contrast.

TABLE H-6
LANDSCAPE SCENERY MAP IMPACT MATRIX

Scenic Quality Rating	Project Contrast			
	Weak	Weak/Moderate	Moderate	Moderate/Strong
A	Low/Moderate	Moderate	Moderate	Moderate/High
B	Low/Moderate	Low/Moderate	Moderate	Moderate
C	Low	Low/Moderate	Low/Moderate	Moderate

H.2.3 Project Visibility Thresholds and Viewing Conditions

For this Project, a review of previous studies in similar geographical, topographical, and environmental settings was performed, and relevant Project visibility thresholds were established for 345 kV transmission line facilities and related access roads (Jones and Jones 1976). Typical height for the proposed 345kV (H-frame and lattice) towers is between 80 and 140 feet and was assumed at 110 feet for analysis. Permanent access roads were assumed to be 14 feet wide.

H.2.4 Impacts on Sensitive Viewers

Initial sensitive viewer impacts were determined by evaluating Project visibility thresholds (Section H.2.3) for moderate and high sensitivity viewers with project contrast. Initial impacts were verified and documented as appropriate during field investigations and revised as needed (Tables H-8 and H-9). Selective mitigation measures also were employed in the context of initial sensitive viewer impacts, which would reduce initial impacts. Sensitive viewer impacts also were verified using visual simulations based on agency approved KOPs (refer to Appendix I for Visual Simulations).

TABLE H-8
HIGH SENSITIVITY VIEWER IMPACT MATRIX

Project Visibility Thresholds (miles)	Project Contrast			
	Weak	Weak/Moderate	Moderate	Moderate/Strong
0 to 0.25	Low/Moderate	Moderate	Moderate	Moderate/High
0.25 to 0.5	Low/Moderate	Moderate	Moderate	Moderate/High
0.5 to 1.0	Low/Moderate	Low/Moderate	Moderate	Moderate
1.0 to 2.0	Low	Low/Moderate	Low/Moderate	Moderate
Over 2.0	Low	Low	Low/Moderate	Low/Moderate

TABLE H-9
MODERATE SENSITIVITY VIEWER IMPACT MATRIX

Project Visibility Thresholds (miles)	Project Contrast			
	Weak	Weak/Moderate	Moderate	Moderate/Strong
0 to 0.25	Low	Low/Moderate	Low/Moderate	Moderate
0.25 to 0.5	Low	Low/Moderate	Low/Moderate	Moderate
0.5 to 1.0	Low	Low	Low/Moderate	Low/Moderate
1.0 to 2.0	Low	Low	Low	Low/Moderate
Over 2.0	Low	Low	Low	Low/Moderate

H.2.5 Visual Resource Management Compliance

H.2.5.1 Visual Resource Management Class Compliance – BLM

Compliance with VRM classes and their associated objectives was based on anticipated change in the landscape (project contrast) to existing landscape conditions as seen from agency-approved KOPs. A moderate/strong project contrast would comply with designated VRM Class IV lands because “the level of change to the characteristic landscape can be high,” (BLM 1986b) or management activities may contrast *strongly* with the existing character of the landscape. Similarly, in a Class III Objective VRM area, change to the characteristic landscape should be moderate; therefore, *moderate* project contrast resulting from management activities (the Project) would be compliant. VRM class compliance was documented using form 8400-4 – Visual Contrast Rating Worksheet.

H.2.5.2 Scenic Integrity Objectives Compliance - USFS

Consistency with designated SIOs was based on an evaluation of project contrast in terms of SIO designations. Minimum levels of scenic integrity for a given landscape are defined by forest planning documents and the comparison of project contrast with these minimum levels was used to determine compliance with the forest plan.

Scenic Attractiveness Rating Sheets (USFS)

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Atchinson Mountains
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	37.41097, -113.53986

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*		**4**			
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The forms of these mountains are prominent from the south while they transition from the surrounding foothills more smoothly to the north and east. Lines created by the ridgeline are rugged with curving lines created by lower peaks. The presence of surface water is limited to the spring runoff and snow capped peaks for a portion of the year. Vegetation primarily consists of pinyon-juniper woodlands with pockets of mountain mahogany, with aspen on the high elevations and sagebrush at low elevations. Color contrast is moderate due to the dark greens in the junipers with grey and tan rocks, and snowcapped peaks during the winter months. Landscape character deviations are limited since the majority of the landscape lies within Inventoried Roadless Areas, except for a major utility corridor along the western margin of the landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Bull Valley Mountains
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	37.48008, -113.72918

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*		**4**			
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The form of these mountains is prominent in the north end while they smoothly transition into the foothills in the south. Lines created by the ridgelines are undulating and angular in some locations. Due to the elevation of these mountains, snow covers the higher peaks for part of the year and spring runoff creates many small streams. Vegetation includes sagebrush and oaks at low elevations, pinyon-junipers at high elevations with pockets of mountain mahogany. Textures range from coarse in the scattered juniper communities and rock outcropping, to medium textures in the dense juniper and sagebrush area. Color contrast is moderate due to the variety of greens in vegetation, whites, tans, and reds in the rocks and exposed soils. Landscape character deviations are limited since the majority of the landscape lies within Inventoried Roadless Areas, there are a few microwave facilities but they do not dominate the landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Clear Creek Canyon
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	38.560371, -112.368605

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	5	4	**3**	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	4	**3**	2	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	4	**3**	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	4	**3**	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

This canyon forms the boundary between the Pahvant Range to the north and the Tushar Mountains to the south. The form of the canyon walls change throughout the unit with areas where the walls are bold and prominent rising above the canyon floor to other areas where the form is indistinct except for the occasional escarpment. Clear Creek runs through the center of the unit with side canyons which contain smaller streams with water occurring only during spring runoff. Due to limited influence of these smaller streams, vegetation is not as modified as in other comparable landscapes. Vegetation varies from pinyon-juniper on the canyon walls to grasses, sagebrush, forbs, and riparian vegetation on the floor. Color contrast is high in some areas with red and tan rocks, variety of greens in vegetation, and the blues in the creek while other areas are more muted with only tan rocks and a few varieties of vegetation. The numerous historic and cultural sites establish a strong sense of place within the canyon. Landscape character deviations include Interstate 70, existing transmission lines, and other access roads.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Foothills
SCENIC ATTRACTIVENESS CLASS RATING	B (11)
PHOTOGRAPH LOCATION	37.56161, -113.52688

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	5	4	**3**	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	4	3	**2**	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	4	**3**	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	4	**3**	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The moderately steep forms associated with this landscape contrasts with the more rugged forms of the adjacent mountains and the indistinct forms of the adjacent basins. There is limited influence of surface water in this landscape and is primarily in the form of snow fall during the winter with small streams forming during the spring runoff. Vegetation is dominated by pinyon and juniper through most of the unit with sagebrush along the lower elevations and oak communities at high elevations and in draws. Textures range from medium textured dense pinyon-juniper areas to coarse textured areas with scattered vegetation and rock outcroppings. Color contrast is moderate due to the variety of greens in the different vegetations, red and tan rock outcroppings, and snow cover during the winter months. Landscape character deviations include a major utility corridor and chained areas. Areas within this unit that have been chained were designed in a manner that they repeat form, line, color, and texture of the surrounding landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Juniper Hills
SCENIC ATTRACTIVENESS CLASS RATING	B (10)
PHOTOGRAPH LOCATION	37.59259, -113.52301

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*				**2**	
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

This landscape is characterized by moderately to steeply undulating, rounded, low hills. There is a limited influence of water in this landscape, winter snowfall creates seasonal streams that flow through this landscape. Vegetation is uniformly dominated by pinyon-juniper, although in some instances they appear mottled due to populations of sagebrush, grass, and forbs interspersed between stands of pinyon-juniper. Textures in the vegetation are typically medium to coarse, while color diversity is limited to dark green, isolated pockets of lighter greens, and tans (seasonally). The juniper-dominated vegetation, typical of the landscape, moderately contrasts with the adjacent basin landscape. Landscape character deviations include a major utility corridor and chained areas. Areas within this unit that have been chained were designed in a manner that they repeat form, line, color, and texture of the surrounding landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Marysvale Canyon
SCENIC ATTRACTIVENESS CLASS RATING	A (16)
PHOTOGRAPH LOCATION	38.569888, -112.252962

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	5	**4**	3	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	**4**	3	2	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	**4**	3	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	**4**	3	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The forms created by the canyon walls are bold and rise prominently from the canyon floor. The Sevier River is the focus of this landscape as it flows through the canyon. The influence of the river is dramatic as the canyon walls are dry with grasses, sagebrush, and junipers while the area adjacent to the river contains a variety of riparian vegetation. Textures range from coarse texture on the canyon walls to fine textured grasses along the river and moderately coarse cottonwoods and other riparian plants. Color contrast is moderate due to the variety of greens in the vegetation, the blue-green water, and tans and reds in the rocks. The historic rail corridor and related signage generate a sense of place which contributes to the quality of the landscape. Deviations to the existing landscape character are limited to US Highway 89 which runs through the center of the landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Pahvant Range
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	37.56161, -113.52688

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	5	**4**	3	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	4	3	**2**	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	4	**3**	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	4	**3**	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The Pahvant Range has layers of undulating lines that become more jagged on the highest peaks, which contrast with the adjacent flat valley/basins. Surface water is primarily in the form of snow fall and small water courses formed by the spring runoff. Vegetation ranges from pinyon-juniper at the base to alpine vegetation on the high summits. Color diversity is high due to the range of greens in the vegetation, reds and greys in the exposed rocks, white snowcapped peaks, and the variety of colors present in the deciduous vegetation during autumn. Landscape character deviations include existing transmission lines and ATV trails.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Pine Valley Mountains
SCENIC ATTRACTIVENESS CLASS RATING	A (16)
PHOTOGRAPH LOCATION	37.45316, -113.47529

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	**5**	4	3	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	4	**3**	2	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	**4**	3	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	**4**	3	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The form created by the mountains is bold and in strong contrast to the surrounding basin and foothills. Lines created by the ridgelines are jagged and complex which stand out against the rolling lines created by the foothills. Due to the high elevation of these mountains, snow caps the mountains for a majority of the year and there are a few perennial streams that flow from the mountains including the Santa Clara River. In addition to these streams, there are a few natural springs located in the landscape. Vegetation is very diverse with pinyon-junipers occurring at middle elevations, while aspens, spruce, and fir grow at the high elevations. Textures range from coarse textured rock outcropping and scattered junipers to medium textured dense junipers and deciduous trees. Color contrast is high due to the variety of greens in the vegetation, tans and greys in the rock outcroppings, and white snowcapped peaks. Seasonal color also increases interest within the deciduous tree communities at high elevations. Landscape character deviations are limited in this landscape due to the majority of the unit lying within the Pine Valley Mountain Wilderness area and adjacent Inventoried Roadless Areas.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Sagebrush Basin
SCENIC ATTRACTIVENESS CLASS RATING	C (7)
PHOTOGRAPH LOCATION	37.47727, -113.63208

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*					**1**
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*					**1**
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*				**2**	
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The largely horizontal form of this landscape is defined and enhanced by adjacent foothill and mountain landscapes. There is little to no influence of water for the majority of the year except for snowfall during periods of the winter. Though vegetation is generally dominated by sagebrush, grasses are found interspersed throughout and often dominate pasture lands. Additionally, junipers are occasionally scattered at the edge of this landscape at its interface with adjacent foothill and mountain landscapes. Textures range from uniformly medium textured sagebrush dominated areas, to medium and fine textures where grasses and sagebrush are co-dominate, or in locations where grasses dominate. Color contrast, largely created by vegetation, is low with a mixture of greens, grey-greens, and browns (when grasses go dormant). Cultural features in this landscape includes historic ranching operations and historical sites. The primary landscape character deviation is a major utility corridor.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Sevier River
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	38.624688, -112.205911

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	5	4	3	2	**1**
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	**5**	4	3	2	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	4	**3**	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	4	**3**	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The forms of this landscape are horizontal due to the floodplain generated by the Sevier River. Undulating lines are also formed as the river flows through the surrounding sagebrush-dominated landscapes. This river is of uncommon size within the Basin and Range and has a strong affect on the character of this landscape due to the presence of water year-round. Vegetation is varied with riparian plants dominating the river edge, and sagebrush and grasses occurring away from the water. Color contrast is expressed through a moderate variety of greens within riparian and surrounding vegetation, reds occurring seasonally in the stems of dogwoods, tans and browns in the soil and rocks, and blue-green water. Landscape character deviations are limited to bridge crossings within the Fishlake National Forest.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Tushar Mountains
SCENIC ATTRACTIVENESS CLASS RATING	B (14)
PHOTOGRAPH LOCATION	38.560371, -112.368605

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*		**4**			
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*			**3**		
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*		**4**			
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The Tushars are a distinct mountain range in central Utah and contain some of the highest peaks in the state. The higher peaks contain a unique environment which is located outside of the project study area. These mountains create a prominent form, which is increased due to the indistinct adjacent basin. The lines created by the highest peaks are jagged while the majority of the mountains form undulating lines including the mountains in the study area. Vegetation is diverse, which changes with altitude, from pinyon-juniper, mountain brush, fir, spruce, to aspen. There is a major influence of water in the landscape with the mountains remaining snow capped for a majority of the year and numerous perennial creeks flowing through the landscape. Color contrast is high due to the variety of greens in the vegetation, tans in the exposed soil and rocks, white snowcapped peaks, and seasonal color in the fall. Landscape character deviations include existing transmission lines, access roads, communication sites, and Interstate 70.

PHOTOGRAPH

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Scenic Quality Rating Sheets (BLM)

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 1	Pahvant Range	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The Pahvant Range has layers of undulating lines that become more jagged on the highest peaks. Vegetation consists of pinyon-juniper at the base of the range and transitions to alpine vegetation on the high summits. Textures range from coarse textured escarpments on the east side of the mountains to medium textures where dense juniper and deciduous trees occur. There are several perennial streams within this landscape, but are not noticeable through most of the unit. Color diversity is high due to the range of greens in the vegetation, reds and greys in the exposed rocks, and the white snowcapped peaks. There is fall seasonal color change in the higher elevations within the aspens and other deciduous trees. The undulating form of these mountains contrast with the adjacent flat valley/basins which enhance the contrast between the two landscapes. This landscape is distinct but typical for the two physiographic sections it crosses; Great Basin and High Plateaus of Utah. There are few cultural modifications except for campgrounds, trails, and access roads.

3. Score

	Rating	Rationale
a. Landform	4	Undulating to jagged mountains
b. Vegetation	3	Pinyon-juniper to alpine
c. Water	1	Several perennial streams but not noticeable
d. Color	4	High variety and seasonal variation
e. Adjacent Scenery	3	Flat basins
f. Scarcity	3	Typical for region
g. Cultural Modification	0	Gravel roads and recreation
Total	18	B

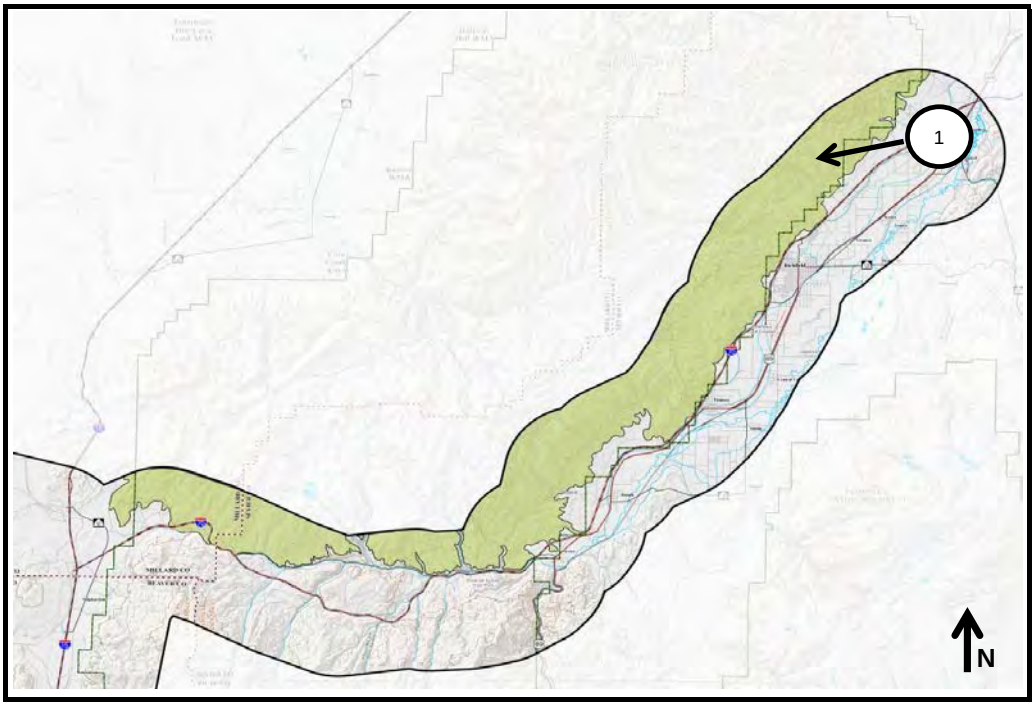
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Steep	Scattered	N/A
Line	Undulating to jagged	Horizontal	N/A
Color	Red, grey, tan	Greens and tans	N/A
Texture	Rough	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 1 Views from Interstate 70

Date:	Time:	Location:	
11/10/2009	12:54	38.840139	-112.023202

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 2	Tushar Mountains	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Richfield, Fillmore, and Cedar City	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The forms created by the highest peaks are jagged, while the majority of the mountains create undulating forms. Vegetation is diverse, which changes with altitude, from pinyon-juniper, mountain brush, fir, and spruce to aspen. Textures range from coarse, scattered junipers to medium textured deciduous trees, fine textured grasses, and snow fields. Water in this landscape consists of mountains, which remain snowcapped for a majority of the year, and numerous perennial streams flowing through the landscape. These streams are not noticeable in the majority of the landscape. Color contrast is high due to the variety of greens in the vegetation, tans in the exposed soil and rocks, white snowcapped peaks, and seasonal color in the fall. These mountains create a prominent form, which is increased by the indistinct adjacent basin. This landscape is unique for the area but common within the regional area. Cultural modifications include access roads, trails, and campgrounds.

3. Score

	Rating	Rationale
a. Landform	4	Prominent range
b. Vegetation	3	Pinyon-juniper, oak, fir, spruce, aspen
c. Water	1	Perennial streams, not noticeable in the majority of landscape
d. Color	4	Variety of greens, seasonal color
e. Adjacent Scenery	3	Flat basins
f. Scarcity	3	Unique for area but common in region
g. Cultural Modification	0	Gravel roads and recreation
Total	18	B

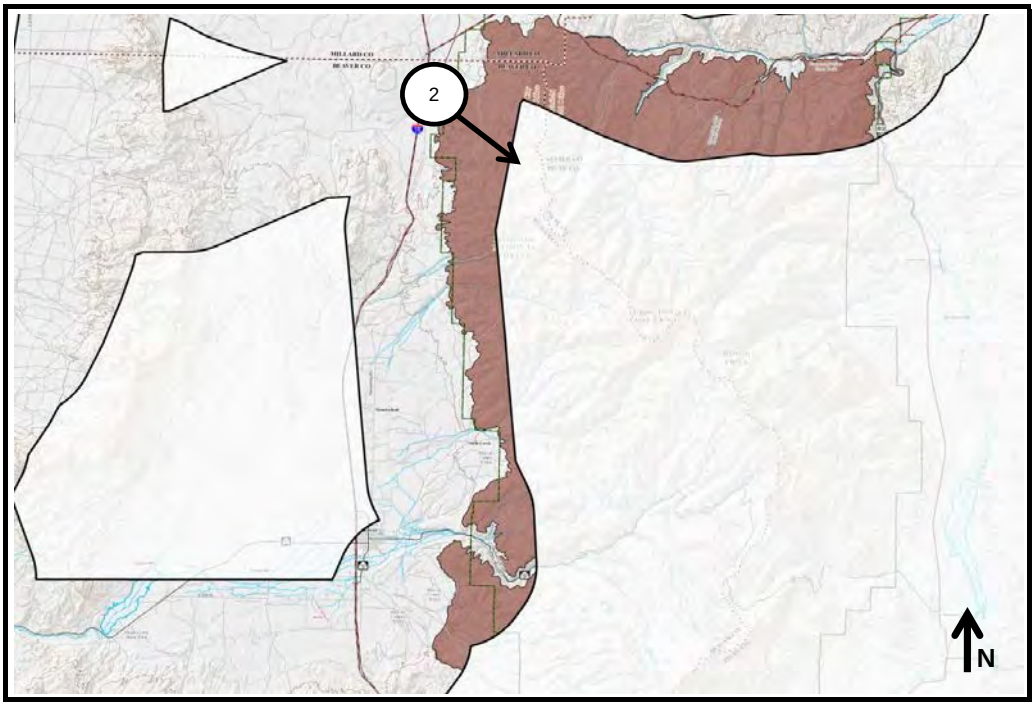
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Rugged	Dense, irregular	N/A
Line	Bold	Horizontal	N/A
Color	Tans and white	Tans and greens	N/A
Texture	Rough	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 2 Views from road parallel to Interstate 15

Date:	Time:	Location:	
11/17/2009	14:11	38.53096	-112.60543

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 3	Mineral Mountains	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Cedar City and Fillmore	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The Mineral Mountains are a rugged and highly eroded landform that lie in the northeast portion of Beaver County and the southeastern corner of Millard County. Vegetation transitions from sagebrush at the lower elevations, to pinyon-juniper on high elevations with oak communities on the higher peaks. The spring thaw creates several streams within this landscape unit, but this introduction of water is brief. Color contrast is moderate with white rock outcroppings, a variety of greens in the vegetations, and tans in the exposed soils. The form of the mountains is also defined further by the flat basins, which make this landscape appear even stepper. The ruggedness of these mountains make them unique for the area, but their overall character is common in the Great Basin. Cultural modifications include access roads and recreation.

3. Score

	Rating	Rationale
a. Landform	4	Rugged mountains, highly eroded
b. Vegetation	3	Sage/grass, pinyon/juniper, oak
c. Water	1	Minor streams and a few springs
d. Color	3	White rock, variety of greens, tans
e. Adjacent Scenery	3	Flat basins
f. Scarcity	3	Unique for area but common in region
g. Cultural Modification	0	Gravel roads and recreation
Total	17	B

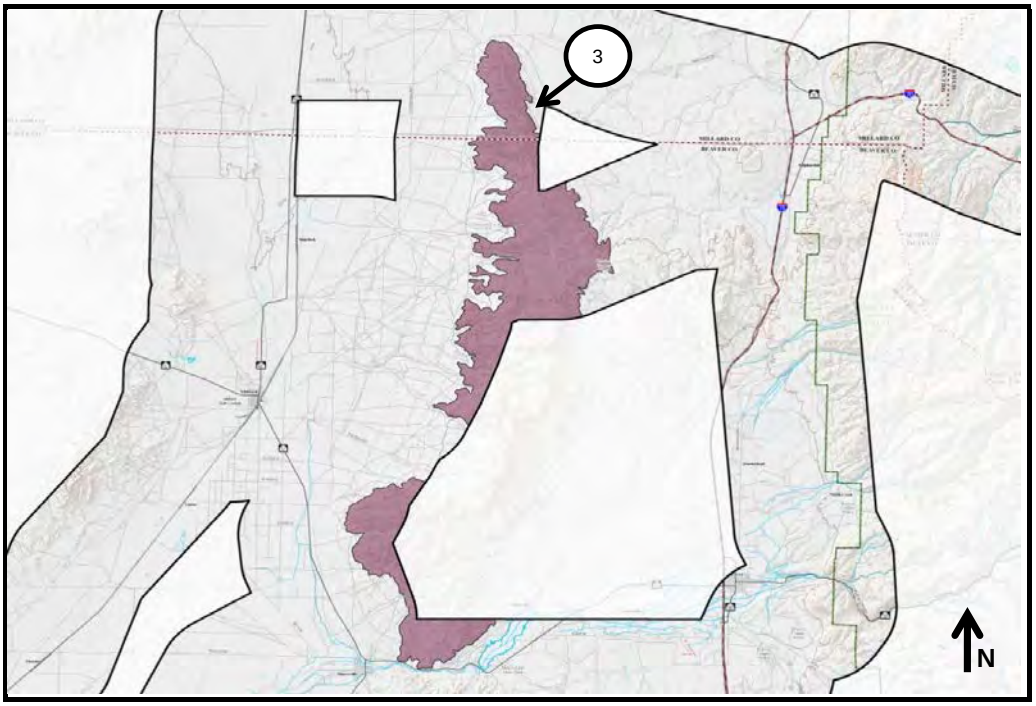
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Jagged	Irregular and patchy	N/A
Line	Bold	Horizontal	N/A
Color	Tans and white	Tans and greens	N/A
Texture	Rough	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 3 Views from Black Rock Road

Date:	Time:	Location:	
11/11/2009	13:00	38.635653	-112.771306

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 4	Sagebrush Valley	SQ Rating: C

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

This landscape is defined by the flat terrain, which slopes upward to meet adjacent landforms. Vegetation is dominated by sagebrush, with isolated patches of grasses and isolated junipers along the perimeter. There is little influence of surface water in the landscape except for periods of snow cover in the winter. Color variety is low since there is little contrast between the tans and greens in the landscape. The horizontal form of this landscape is defined and enhanced by adjacent mountains and plateaus. This landscape is common within the High Plateaus of Utah. Cultural modifications include range improvements, roads, scattered residences, and oil and gas facilities.

3. Score

	Rating	Rationale
a. Landform	1	Flat terrain, little topographic relief
b. Vegetation	2	One dominant vegetation, some variety at margins
c. Water	0	Little influence
d. Color	2	Seasonal change, monotone in summer
e. Adjacent Scenery	3	Mountains and plateaus
f. Scarcity	2	Common
g. Cultural Modification	0	Roads, grazing, isolated areas of industry
Total	10	C

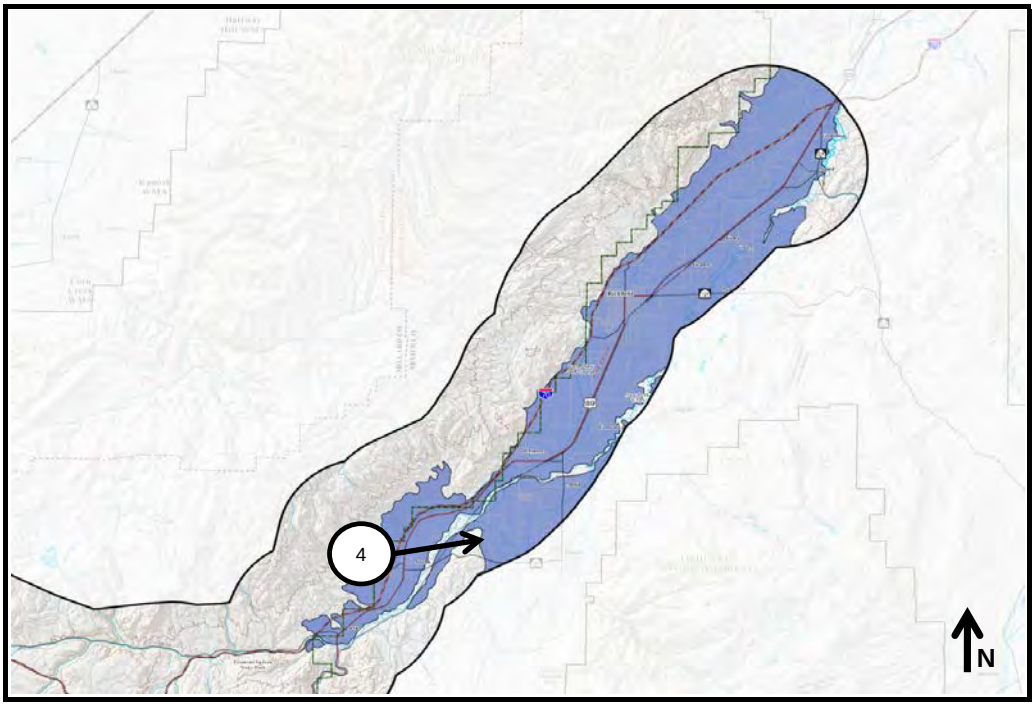
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Sloping, flat	Uniform	Fencing
Line	Horizontal	Horizontal	Straight
Color	Tans	Pale greens, tans	Tan & grey
Texture	Smooth	Moderate	Moderate

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 4 Views from Joseph Mountain Road

Date:	Time:	Location:	
11/10/2009	15:08	38.628555	-112.243535

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 5	Sagebrush Basin	SQ Rating: C

Date last revised: 7/6/2010 **Field Office(s):** Cedar City, Fillmore, and St. George	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

This landscape is defined by flat, horizontal form, which begins to lift at the edges as it transitions to adjacent landforms. Though vegetation is generally dominated by big sagebrush, grasses are interspersed throughout and often dominate pasture lands. Additionally, junipers are occasionally scattered at the edge of this landscape at its interface with adjacent foothill and mountain landscapes. There is little influence of water in this landscape except for snow cover in the winter. Color contrast, largely created by vegetation, is low with a mixture of greens, grey-greens, and browns (when grasses go dormant). The largely horizontal form of this landscape is defined and enhanced by adjacent foothill and mountain landscapes. This landscape is common within the Basin and Range. Cultural modifications found within the landscape include access roads, scattered homes, and ranching operations.

3. Score

	Rating	Rationale
a. Landform	1	Flat, horizontal
b. Vegetation	2	Sagebrush, grasses, and desert scrub
c. Water	0	Little influence
d. Color	2	Weak contrast in tans and greens
e. Adjacent Scenery	3	Mountains and foothills
f. Scarcity	2	Common
g. Cultural Modification	0	Ranching, homes, roads
Total	10	C

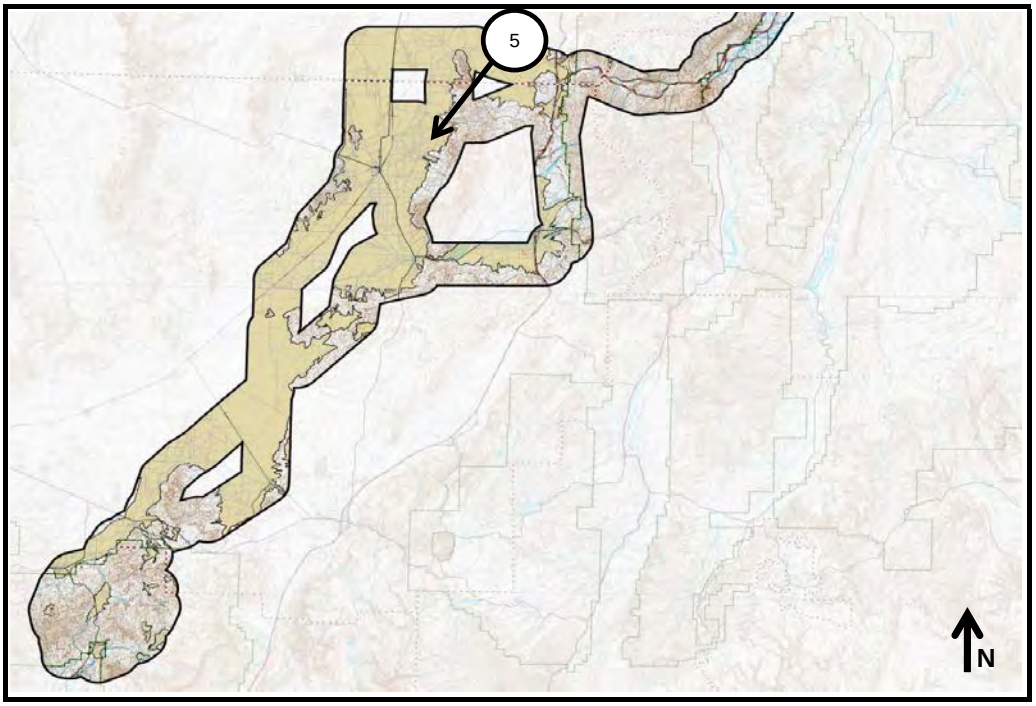
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Flat	Low, uniform	Fencing
Line	Horizontal	Horizontal	Straight
Color	Tans	Tans and greens	Tan and grey
Texture	Smooth	Moderate	Moderate

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 5 Views from Black Rock Road

Date:	Time:	Location:	
11/11/2009	13:00	38.635372	-112.771051

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 6	Sevier River	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The Sevier River creates an undulating line as it winds through the surrounding sagebrush-dominated basin landscape. Vegetation is moderately complex with riparian plants occupying the river edge, and sagebrush and grasses occurring away from the water. The character of this landscape is focused on the presence of surface water, which directly modifies the vegetation types along its banks. Color contrast is expressed through a moderate variety of greens within riparian and surrounding vegetation, reds occurring seasonally in the stems of riparian vegetation, tans and browns in the soil and rocks, and blue-green water. The adjacent basin and mountains increase the quality of this landscape. The Sevier River is a river of uncommon size within the region and is a unique landscape. Cultural modifications include roads, residences, canals, and bridge crossings of the river.

3. Score

	Rating	Rationale
a. Landform	1	Flat floodplain around river
b. Vegetation	2	Riparian vegetation including cottonwoods and dogwoods
c. Water	4	Major river for region
d. Color	3	Variety of color, seasonal change
e. Adjacent Scenery	3	Mountains on either side
f. Scarcity	4	Unique in region
g. Cultural Modification	0	Bridges crossing unit
Total	17	B

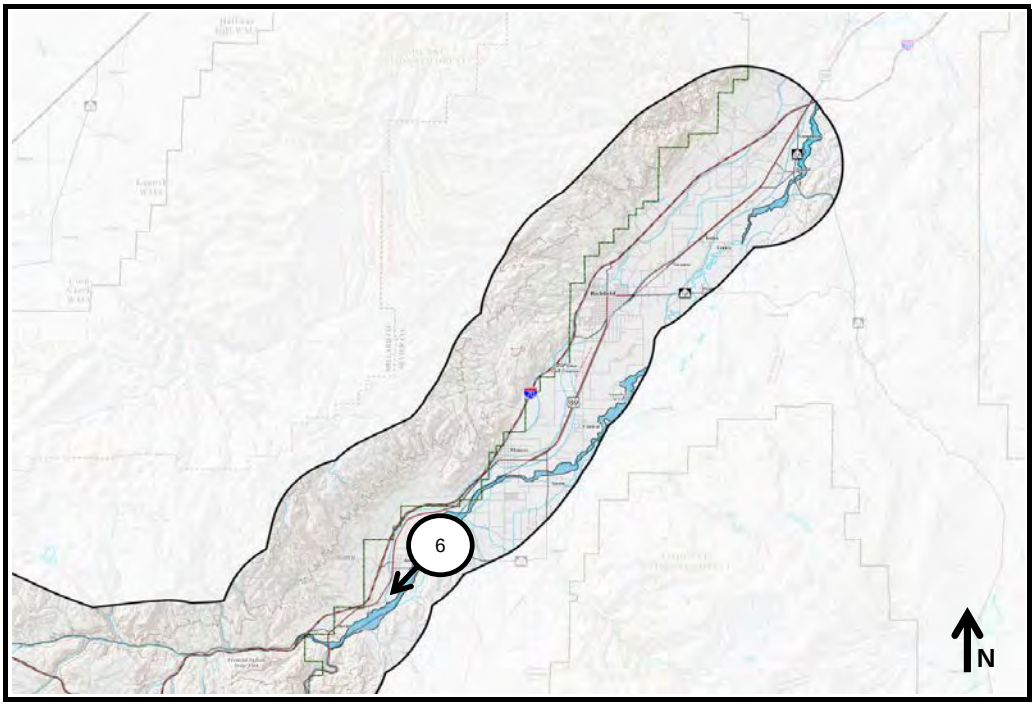
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Flat	Vertical and layered	N/A
Line	Horizontal	Irregular, broken	N/A
Color	Blues and tans	Greens, reds, tans	N/A
Texture	Smooth	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 6 Views from SR 118

Date:	Time:	Location:	
11/10/2009	15:29	38.624688	-112.205911

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 8	Marysvale Canyon	SQ Rating: A

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The forms created by the canyon walls are bold and prominent, which contrasts with smooth, curving form created by the Sevier River. Vegetation consists of grasses, junipers, and riparian plants. Textures range from coarse texture on the canyon walls, to fine textured grasses along the river moderately coarse cottonwoods and other riparian plants. The influence of the river is dramatic as the canyon walls are dry with grasses, sagebrush, and junipers, while the area adjacent to the river contains a variety of riparian vegetation. Color contrast is moderate due to the variety of greens in the vegetation, the blue-green water, and tans and reds in the rocks. The adjacent mountains increase the drama within this landscape and improve the scenic quality. This landscape is typical in the region but has a higher quality than more common canyon landscapes. Cultural modifications include US 89, residences, and a non-motorized trail which follows an old rail line.

3. Score

	Rating	Rationale
a. Landform	4	Steep canyon walls
b. Vegetation	3	Grasses, juniper, riparian plants
c. Water	4	Fast flowing river with rapids
d. Color	3	Greens in vegetation, tans and reds in rock and soil
e. Adjacent Scenery	3	Mountains
f. Scarcity	3	Typical but not common
g. Cultural Modification	0	Highway, residences, recreation
Total	20	A

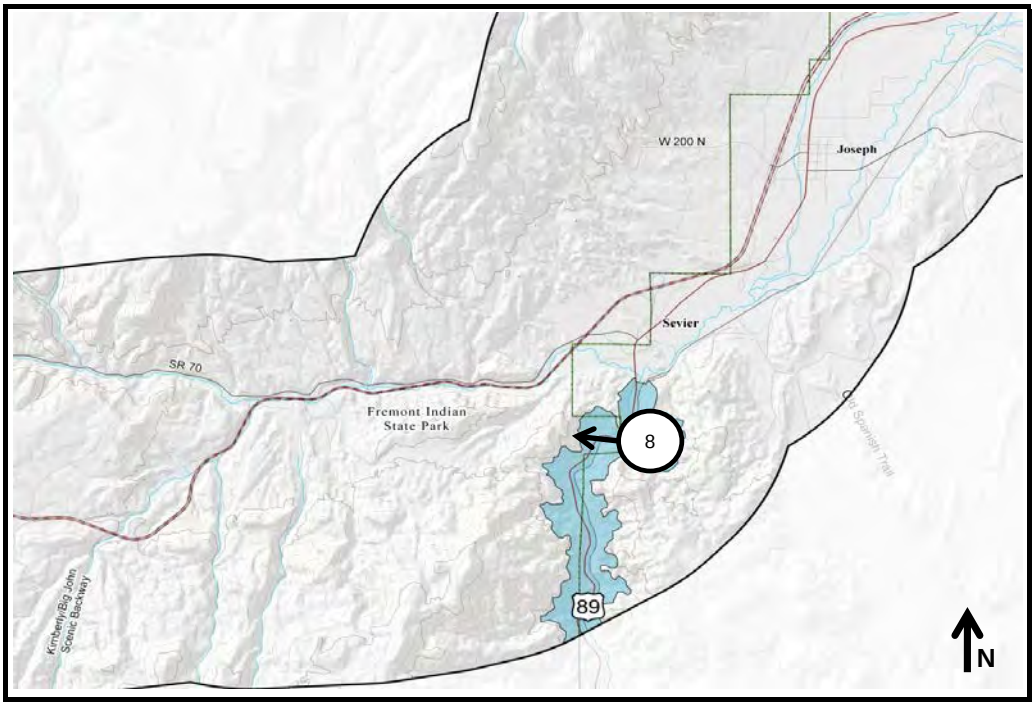
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Rugged	Irregular	N/A
Line	Rounded	Vertical, broken	N/A
Color	Tans, greys, reds	Variety of greens	N/A
Texture	Rough	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 8 Views from US 89

Date:	Time:	Location:	
11/10/2009	15:47	38.569888	-112.252962

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 9	Juniper Hills	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Cedar City, Fillmore, and St. George	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

This landscape is characterized by moderate to steep undulating, rounded, low foothills. Vegetation is uniformly dominated by juniper, although in some instances they appear mottled due to populations of sagebrush, grass, and forbs interspersed between stands of juniper. Vegetation is typically medium to coarse textured, while color diversity is limited to dark green, isolated pockets of lighter greens, and tans (seasonally). There is little influence of water within this landscape except during snow cover in winter. The adjacent scenery includes steep mountains and flat basins with increase the quality of this landscape. This landscape is common in the Great Basin. Cultural modifications to this landscape include roads, residences, and cattle operations.

3. Score

	Rating	Rationale
a. Landform	3	Moderate steep, undulating
b. Vegetation	2	Sage/grasses and juniper
c. Water	0	Little influence
d. Color	2	Tans and greens
e. Adjacent Scenery	3	Mountains and basins
f. Scarcity	2	Common
g. Cultural Modification	0	Cattle operations, residences, roads
Total	12	B

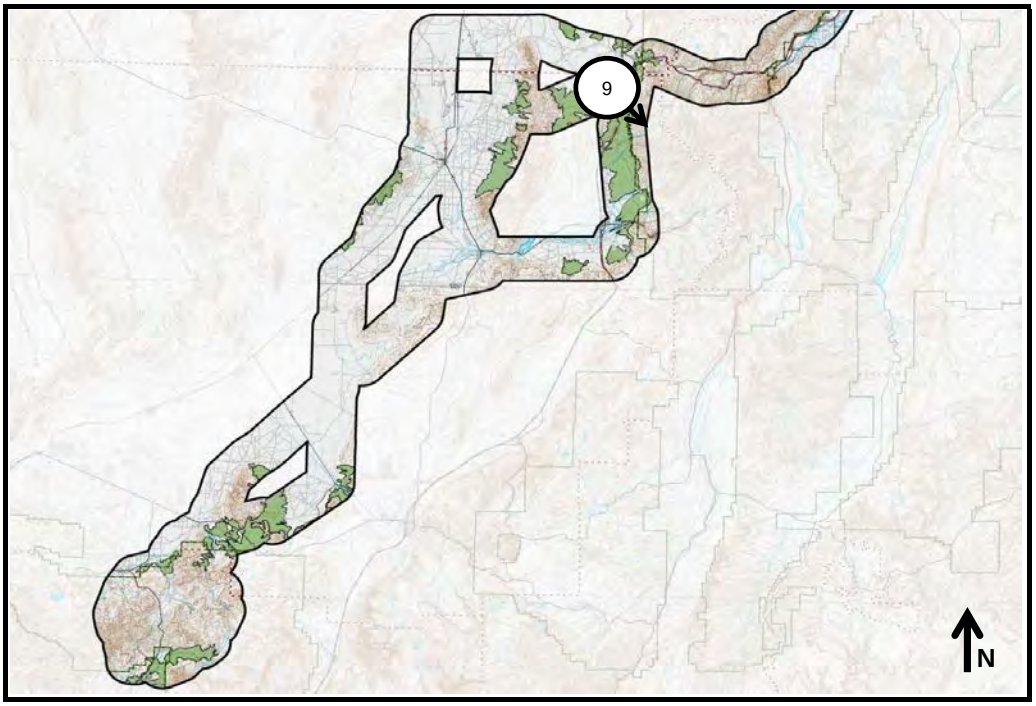
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Rolling	Smooth, regular	N/A
Line	Undulating	Flowing, soft	N/A
Color	Tan to red	Dark green	N/A
Texture	Smooth	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 9 Views from road adjacent to Sulphurdale

Date:	Time:	Location:	
11/17/2009	14:03	38.562824	-112.588551

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 10	Arid Juniper Hills	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

This unit is characterized by the steep edge of the landform and the undulating terrain within the unit. This landscape often appears mottled due to populations of sagebrush, shrubs, grass, and forbs interspersed between stands of pinyon and juniper that dominate this landscape. Vegetation patterns exhibit medium to coarse textures. There is little to no apparent water in this landscape. Colors in this landscape include muted tans and greens in the vegetation while the soil and rock layers create layers of red, tan, and white. The adjacent mountains and valleys have a minor influence on this landscape. This landscape is common within the High Plateaus of Utah. Cultural modifications are limited to gravel roads which cross the edges of the landscape.

3. Score

	Rating	Rationale
a. Landform	3	Steep, undulating
b. Vegetation	2	Sagebrush and grasses
c. Water	0	Little influence
d. Color	3	Variety in landform, vegetation colors limited
e. Adjacent Scenery	2	Mountains and flat valleys
f. Scarcity	2	Common
g. Cultural Modification	0	Gravel roads
Total	12	B

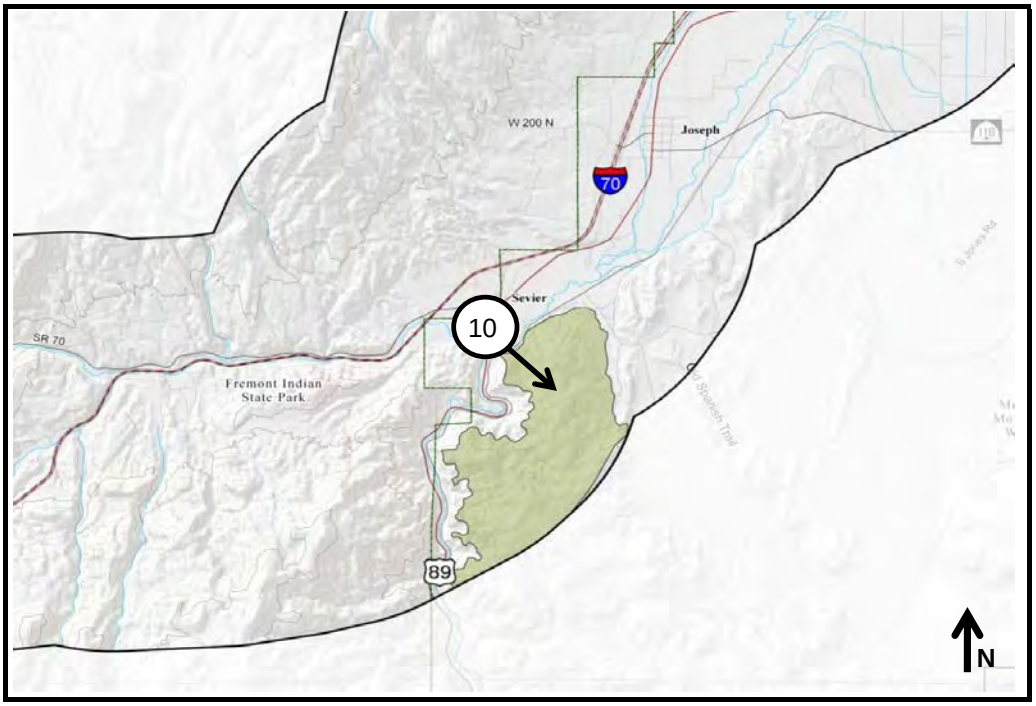
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Undulating, rolling	Indistinct	N/A
Line	Converging, angular	Irregular, broken	N/A
Color	Tans, reds	Muted greens	N/A
Texture	Rough	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 10 Views from US 89

Date:	Time:	Location:	
11/10/2009	15:53	38.58881	-112.258186

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 11 **Sagebrush Hills (Colorado Plateau)** **SQ Rating: C**

Date last revised: 7/6/2010 **Field Office(s):** Richfield	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The Sagebrush Hills are defined by rolling terrain which is finely dissected and resembles badlands in some portions. Vegetation consists mostly of sagebrush with scattered grasses, junipers, and areas of bare soil. The hills have smooth textured grasses and uniform sagebrush with scattered junipers that create coarser textures in the draws. There is little influence of water in this landscape except for snow cover in the winter. Color contrast is low due to similar colors between the vegetation and the soil; there is little seasonal change except for snow cover which introduces white into the landscape. The undulating lines created by this landscape contrast with the more jagged lines in the adjacent mountains and horizontal lines in the adjacent basins. This landscape is common in the High Plateaus of Utah. Cultural modifications are limited to paved and gravel roads.

3. Score

	Rating	Rationale
a. Landform	2	Rolling terrain, finely dissected
b. Vegetation	2	Scattered sagebrush, grasses, and junipers
c. Water	0	Little influence
d. Color	2	Mostly tan, small areas of red
e. Adjacent Scenery	2	Flat valley and mountains
f. Scarcity	2	Common
g. Cultural Modification	0	Gravel and paved roads
Total	10	C

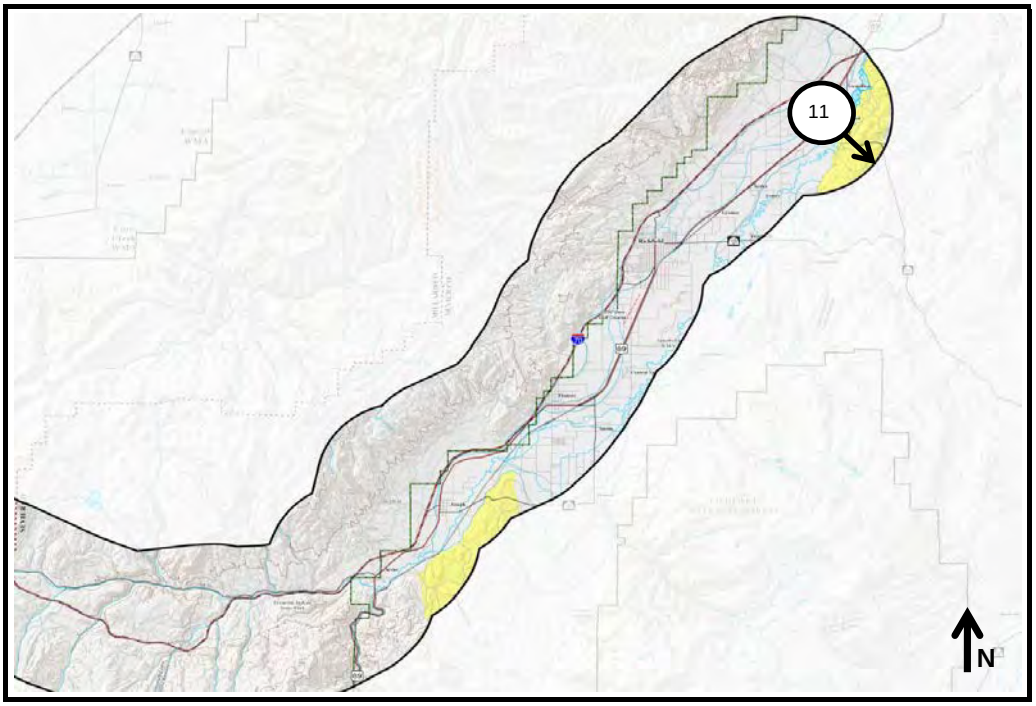
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Rolling	Low, short	N/A
Line	Undulating	Irregular	N/A
Color	Tans, reds	Pale greens	N/A
Texture	Moderate	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 11 Views from SR 24

Date:	Time:	Location:	
11/10/2009	12:15	38.826431	-111.958541

DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 12 **Sagebrush Hills (Basin and Range)** **SQ Rating: C**

Date last revised: 7/6/2010 **Field Office(s):** Cedar City	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

This landscape is defined by rolling terrain which rises above the flat, adjacent basins. Vegetation is dominated by big sagebrush, grasses, and forbs. Textures are uniformly moderate, except where exposed soils create fine textures or rock outcroppings generate coarse textures. There is little influence of water in this landscape except for snow cover in the winter. Color contrast is low due to the limited color range between the green and tan shrubs and the tan soil. Undulating to jagged lines formed by this landform contrast with the flat surrounding landscape which enhance the landform contrast. This landscape is common in the Great Basin. Cultural modifications include mining operations and access roads.

3. Score

	Rating	Rationale
a. Landform	2	Rolling hills
b. Vegetation	2	Sagebrush and grasses
c. Water	0	Little influence
d. Color	2	Greens, tans
e. Adjacent Scenery	2	Flat basins
f. Scarcity	2	Common
g. Cultural Modification	0	Gravel roads, isolated mining
Total	10	C

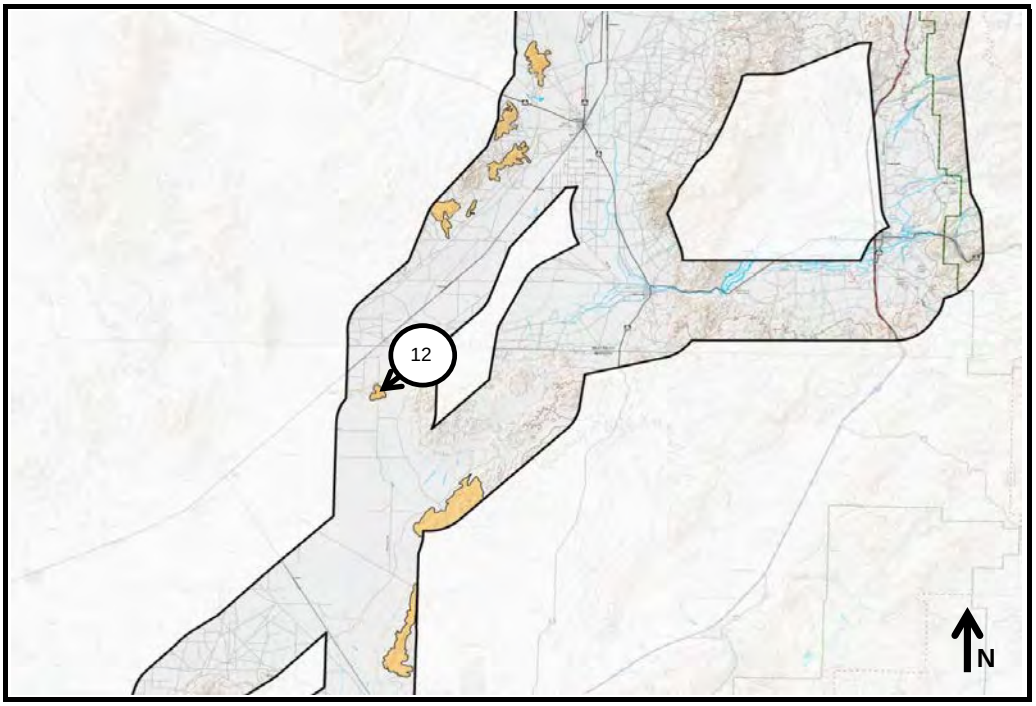
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

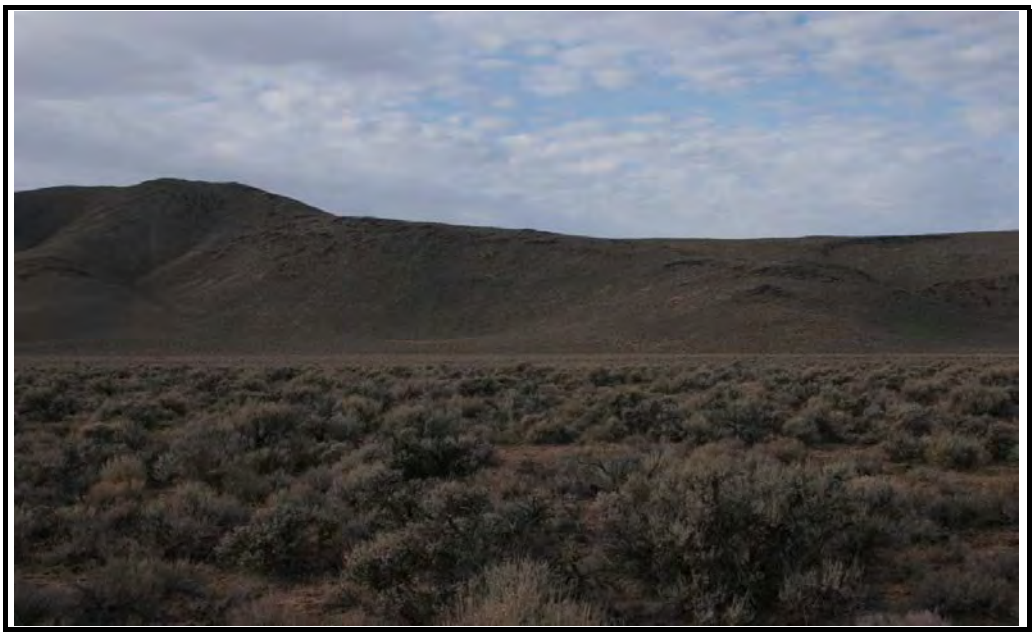
	A. Landform/Water	B. Vegetation	C. Structures
Form	Rolling	Smooth	N/A
Line	Curving	Regular	N/A
Color	Tans	Tans and pale greens	N/A
Texture	Moderate	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 12 Views from IPP Access Road

Date:	Time:	Location:	
11/12/2009	8:42	38.107846	-113.242431



DRAFT SCENIC QUALITY RATING WORKSHEET (VRM)
(Note: This form is a modified version of BLM Form 8400-1)

SQRU ID: 13	Foothills	SQ Rating: B

Date last revised: 7/6/2010 **Field Office(s):** Cedar City and St. George	Sigurd to Red Butte No.2 345kV Transmission Line Project

1. Evaluators:

M. Schwartz, K. Rauhe

2. Narrative:

The foothill landscapes in the project study area have moderately steep and undulating forms. Vegetation is dominated by pinyon and juniper through most of the units, with sagebrush along the lower elevations and oak communities at high elevations and in draws. Textures range from medium texture in dense pinyon-juniper areas to coarse textures areas with scattered vegetation. There is limited influence of surface water in this landscape and is primarily in the form of snow cover during the winter. Color contrast is moderate due to the variety of greens in the different vegetations, red and tan rock outcroppings, and snow cover during the winter months. The forms created by this landscape contrast with the more rugged forms of the adjacent mountains and the indistinct forms of the adjacent basins. This landscape is common in the Great Basin and occurs throughout the project area. Cultural modifications include access roads, mining operations, and residences.

3. Score

	Rating	Rationale
a. Landform	3	Moderately steep
b. Vegetation	3	Pinyon-juniper, sage, oak
c. Water	0	Little influence
d. Color	3	Greens, red and tans in rock outcroppings
e. Adjacent Scenery	3	Mountains and basins
f. Scarcity	2	Common
g. Cultural Modification	0	Residences, roads, mining operations
Total	14	B

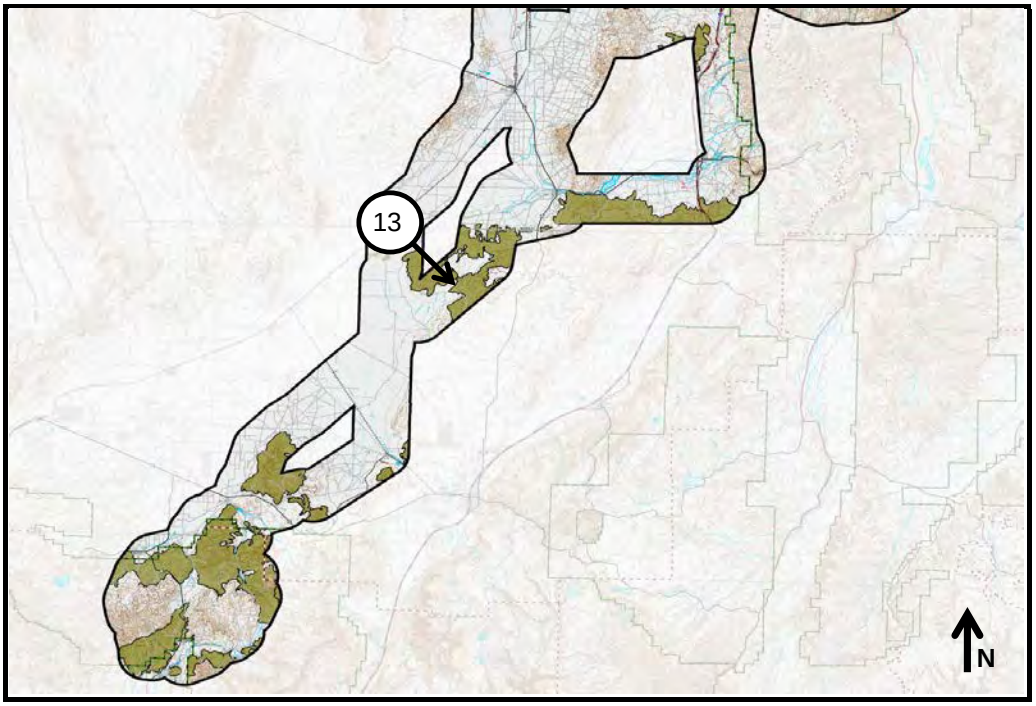
Scenic Quality Classification A=19 or more B=12-18 C=11 or less

Comments:

4. Landscape Character (Features)

	A. Landform/Water	B. Vegetation	C. Structures
Form	Rolling to steep	Rounded to indistinct	N/A
Line	Diagonal, undulating	Irregular	N/A
Color	Tan	Tan to green	N/A
Texture	Moderate	Moderate	N/A

5. SQRU Location Map and IOP Locations



6. SQRU Photo - IOP 13 Views from IPP Access Road

Date:	Time:	Location:	
5/12/2009	8:36	38.107846	-113.242431

Dixie National Forest
Inventory SIO Report

Sigurd to Red Butte No. 2
345kV Transmission Project
Scenic Integrity Objective Development
Dixie National Forest

DRAFT

Prepared for:

By:

Environmental Planning Group
208 East 800 South
Salt Lake City, Utah 84111

December 9, 2010

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List of Acronyms and Abbreviations

EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
Forest	Dixie National Forest
IRA	Inventoried Roadless Area
Project	Sigurd to Red Butte No. 2 – 345kV Transmission Line Project
ROS	Recreation Opportunity Spectrum
SIO	Scenic Integrity Objective
SMS	Scenery Management System
USFS	U.S. Forest Service
USGS	U.S. Geological Survey

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1.0 INTRODUCTION

This report was prepared in response to a letter received from the Dixie National Forest (Forest) landscape architect, dated April 29, 2010 (Attachment A), regarding the Sigurd to Red Butte No. 2 – 345kV Transmission Project (Project) Environmental Impact Statement (EIS). The letter stated that Forest lands not assigned with current Scenic Integrity Objective (SIO) designations within the EIS study area (Figure 1 in Attachment B) should be assessed for use within the EIS analysis for visual resources. After further consultation with the Forest, direction was provided to update existing SIOs within the entire EIS study area associated with the Forest. The study area for the requested SIO update includes Forest-managed lands within 3 miles of the proposed alternative centerlines for the Project. The entire study area occurs within the Pine Valley Ranger District of the Forest managed under the Dixie National Forest 1986 Land and Resource Management Plan.

The Forest Land and Resource Management Plan was amended in June 2000 with the Scenery Management System (SMS) Environmental Assessment/Finding of No Significant Impact (FONSI). The development and approval of the SIOs described within this report and used for the EIS would not require a plan amendment as per by the second reason within the FONSI:

> The Proposed Action provides programmatic direction for future projects, so that each project does not need to amend the Forest Plan as part of a project-level decision. I believe the effects to resources would not be significant, since we have been implementing on a project-by-project basis without significant effects, and the new standards and guidelines are consistent with the current Forest Plan. Disclosure of the site-specific effects and public participation will occur prior to the project decision for any specific resource activity. (USFS 2000)

Included in this report is an overview of inventory methods and results for analyzing and preparing SIOs. The inventory focused on the identification and analysis of landscape character (scenic attractiveness and scenic integrity) and landscape visibility (sensitive viewers and distance zones). These inventory components were combined to derive scenic classes, which were subsequently used to prepare SIOs as described in this report.

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2.0 METHODOLOGY

The U.S. Forest Service (USFS) SMS is used to evaluate and qualify the value of scenery on National Forest System lands for planning and management purposes. The methodology described below was based on the USFS SMS. The details of the process are described in *Landscape Aesthetics: A Handbook for Scenery Management*, which was adopted by the USFS in 1995. In summary, the SMS process consists of analyzing landscape character (scenic attractiveness and scenic integrity) and landscape visibility associated with sensitive viewers. The results of the analyses are used to assign a scenic class rating, which is subsequently reviewed by Forest visual resource managers. Based on future desired conditions and other resource considerations, a Final SIO level is assigned. Per direction from the Forest landscape architect, the process was modified to conform to the specific needs and goals of the Forest (see section 2.4 for specifics regarding updated processes).

2.1 Landscape Character

Landscape character consists of physical, biological, and cultural attributes that make a landscape identifiable or unique or give it a memorable sense of place (USFS 1995). To develop and delineate landscape character units, this study implemented an approach consistent with the USFS SMS direction using the attributes of landform, rock form, water form, vegetation, and cultural features as well as the *Ecological Subregions of the United States: Section Description* (USFS 1994) and *Physiography of Western United States* (Fenneman 1931) in determining regional context for landscape character. Within each of these landscape character units, scenic integrity and scenic attractiveness descriptions and ratings were developed.

2.1.1 Scenic Integrity

Scenic integrity is a measure of the intactness associated with the visual elements that define a particular landscape character unit and can range from very high to unacceptably low. A landscape character unit with minimal visual disruption is considered to have high scenic integrity. Those landscape character units occupied by landscape deviations modify the landscape character of a particular unit and have diminished scenic integrity. Other landscape features can be compatible with the landscape character (e.g., Forest trails, campgrounds, picnic areas, chained areas) and can contribute to or enhance scenic integrity through increasing landscape variety and developing a sense of place. Scenic integrity is expressed by the USFS as very high, high, moderate, low, very low, and unacceptably low. Table 1-1 provides the range of integrity levels and their associated definitions as described in the SMS handbook.

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TABLE 1-1 – UNITED STATES FOREST SERVICE SCENIC INTEGRITY LEVELS	
Level	**Description**
Very High	The valued landscape character "is" intact with only minute if any deviations. The existing landscape character and sense of place is expressed at the highest possible level.
High	The valued landscape character "appears" intact. Deviations may be present but must repeat form, line, color, texture, and pattern common to the landscape character so completely and at such scale that they are not evident.
Moderate	The valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.
Low	The valued landscape character "appears moderately altered." Deviations begin to dominate the valued landscape character being viewed but they borrow valued attributes such as size, shape, edge effect and pattern of natural openings, vegetation type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.
Very Low	The valued landscape character "appears heavily altered." Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, edge effect and pattern of natural opening, vegetation type changes or architectural styles within or outside the landscape being viewed. However deviations must be shaped and blended with the natural terrain (landforms) so that elements such as unnatural edges, roads, landings, and structures do not dominate the composition.
Unacceptably Low	The valued landscape being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should only be used to inventory existing integrity.
SOURCE: USFS 1995	

Existing scenic integrity was mapped for this study using an approach adopted from the SMS visual resource inventory procedures. The results of the scenic integrity evaluation were factored into the development of landscape character. Scenic integrity was mapped through review of aerial imagery, United States Geological Survey (USGS) topographic maps, Inventoried Roadless Areas (IRAs), Recreation Opportunity Spectrum (ROS), and field investigation. Through consultation with the Forest, direction was given to place the highest importance on scenic integrity within the analysis.

2.1.2 Scenic Attractiveness

Scenic attractiveness measures the aesthetic value inherent in a landscape character unit and is based on the following landscape features: landform patterns and features, surface water characteristics, vegetation patterns and land use patterns, and cultural features (USFS 1995). In general, landscapes that exhibit a diversity of landscape features receive a high scenic attractiveness rating. Conversely, those landscapes that are more uniform or homogenous, with

low topographical and vegetation diversity, typically receive lower rankings. Following are the three ratings the USFS applies to landscapes as defined by the SMS:

- Class A – landscapes with distinctive or outstanding scenic quality or interest
- Class B – landscapes with typical or common diversity or interest
- Class C – landscapes with indistinctive or weak diversity or interest

The evaluation of scenic attractiveness for the Project was based on SMS visual resource inventory procedures. Scenic attractiveness rating sheets were developed for the study to record scenic attractiveness (Attachment C). Also, scenic attractiveness ratings were developed in the context of the entire ecoregion and not just the study area. Scenic attractiveness was mapped through review of aerial imagery, Southwest Region Gap Analysis Project landcover data, USGS topographic maps, and field investigation.

2.2 Landscape Visibility

Landscape visibility is a measure of discernable detail in the landscape relative to the location of the viewer and associated viewing conditions. Landscape visibility consists of a combination of sensitive viewers (constituents), concern or sensitivity of viewers (concern levels), and distance zones. Using the sensitive viewers identified for the Project (see Table 1-2), a map was prepared depicting distance zone buffers. Distance zones are described in Table 1-3 and are specific to the study area of the proposed action and not to the general landscape (i.e., the distance zones will be limited to the 6-mile-wide visual study boundary). The distance zone buffers were then assigned a value of 1 or 2, which corresponds with high and moderate sensitivity ratings, respectively. All other areas are valued at 3. Where buffers overlap, Figure 4-1 in the SMS manual was referenced (i.e., Mg1 is more sensitive than Fg2). The distance zone analysis resulted in a map divided into polygons with values Fg1, Fg2, Mg1, Mg2, Bg1, Bg2, Bg3. Based on direction from the Forest, landscape visibility was inventoried per SMS procedures and will aid in the development of SIOs but will not directly influence the inventoried SIOs as indicated in the SMS manual.

2.2.1 Sensitive Viewers

Viewer sensitivity, termed “concern levels” in the USFS SMS, pertains to the degree of concern for changes to the landscape setting or a particular viewshed. The sensitivity rating is based primarily on interest in scenery, as well as level of use. In general, viewers that have a high interest in scenery are associated with areas of national importance. Those viewers that have a moderate concern for aesthetics are generally associated with areas of local importance. Scenic or historic status may increase the amount and duration of use for viewers, thereby increasing their concern for changes to the landscape. There may also be a higher concern for aesthetics in special management areas or designations. Table 1-2 presents the sensitive viewers identified.

TABLE 1-2 – VIEWER SENSITIVITY	
High Sensitivity Viewers	**Moderate Sensitivity Viewers**
Residences	Hardscrabble Trail
Old Spanish Trail Corridor (National Historic Trail)	Shinbone Trail
Pine Valley Wilderness	Cemetery Trail
Mountain Meadow Massacre Site NHL	Indian Hollow Spring Trail
Goat Spring Trail (access to Pine Valley Wilderness)	State Route 18
Summit/Rock Springs Trail (access to Pine Valley Wilderness)	Forest Road 007
Water Canyon Trail (access to Pine Valley Wilderness)	Forest Road 009
Pinto Spring Trail (access to Pine Valley Wilderness)	Forest Road 011
Forest Road 035 (access to Pine Valley Wilderness)	Forest Road 014
Forest Road 375 (access to Mountain Meadow Massacre Site NHL)	Forest Road 255
	Forest Road 565

2.2.2 Distance Zones

Viewer perceptions of form, line, color, texture, and other visual elements in the landscape that vary with distance. In general, the ability to recognize details of form, line, color, and texture diminish as the distance from the viewpoint increases. The USFS SMS identifies three distance zones for general resource management planning as shown in Table 1-3: Foreground (0 to 0.5 mile), Middleground (0.5 to 4.0 miles), and Background (4+ miles) (USFS 1995). The distance zones identified by the USFS for general resource management planning are based on visibility thresholds associated with viewing typically forested landscapes (as described in the table below).

TABLE 1-3 – LANDSCAPE VISIBILITY DISTANCE ZONES		
Distance Zone	**Distance**	**Description**
Foreground	0 to 0.5 miles	Details of landscape elements are discernable and obvious. Texture, color, and reflectivity are perceived at this distance and can be dominant in the landscape.
Middleground	0.5 to 4 miles	At this distance zone, landscape elements begin to be less discernable. Textures are not evident but the overall context of the landscape is apparent.
Background	4 miles to horizon	At this distance zone the colors of the landscape become subdued. Textures are not evident and only large features are discernable (mountains, lakes, etc.).

2.2.2 Visibility

A viewshed analysis was performed using all sensitive viewers to determine those locations in the study area that would not be visible to any sensitive viewer. This analysis was used to confirm whether views from the sensitive viewers are appropriate for increasing the sensitivity of a given landscape.

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2.3 Scenic Class

Scenic classes are comprised of landscape visibility (sensitive viewers and distance zones) and scenic attractiveness. They are used to determine the relative values of discrete landscape areas. Mapped scenic classes are typically used for forest planning efforts to compare the value of scenery with other resources, such as timber, wildlife, forest, or minerals. There are seven scenic class levels, which are determined by the USFS Scenic Class Matrix (Table 1-4). Generally, Scenic Classes 1–2 have high public value, Classes 3–5 have moderate value, and Classes 6–7 have low value (USFS 1995).

TABLE 1-4 – USFS SCENIC CLASS MATRIX

	Distance Zones and Concern Levels								
Scenic Attractiveness Rating	**Fg1**	**Mg1**	**Bg1**	**Fg2**	**Mg2**	**Bg2**	**Fg3**	**Mg3**	**Bg3**
A	1	1	1	2	2	2	2	3	3
B	1	2	2	2	3	4	3	5	5
C	1	2	3	2	4	5	5	6	7

2.4 Scenic Integrity Objectives

SIOs are developed to establish the future desired condition of a given landscape area. SIO levels range from very high where only minute modifications are acceptable, to very low where deviations may strongly dominate the landscape. Scenic Classes are the baseline for determining SIOs, but existing scenic integrity, ROS, IRAs, and management prescriptions are all used in the process for classifying the Final SIOs.

For the development of SIOs, Scenic Class was combined with the Scenic Integrity ratings (Table 1-5). This is in direct response to consultation from the Forest landscape architect that scenic integrity should be the key element in determining SIOs. Using scenic integrity as the primary factor in determining SIOs, while reducing the influence of scenic attractiveness, visibility, and viewers (Scenic Class), is a deviation from the standard SMS policy.

TABLE 1-5 – SCENIC INTEGRITY OBJECTIVES MATRIX

Scenic Class	Very High	High	Moderate	Low
1	Very High	High	High	Moderate
2	Very High	High	Moderate	Moderate

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3.0 RESULTS

The results section includes an inventory of existing landscape character (scenic attractiveness and integrity) and landscape visibility (sensitive viewers and distance zone); and the results of scenic class analysis and SIO levels.

3.1 Landscape Character Units

The study area is located in the southeast portion of the Great Basin and is adjacent to the High Plateaus of Utah (Fenneman 1931). Elevations range from 4,500 feet south of the town of Central, UT to Gardner Peak at 9,488 feet in the Pine Valley Mountains. The following landscape character units were identified in the study area:

- Atchinson Mountains
- Bull Valley Mountains
- Foothills
- Juniper Hills
- Pine Valley Mountains
- Sagebrush Basin

3.1.1 Atchinson Mountains

The Atchinson Mountains landscape character unit is located in the center of the study area and is bordered by foothills to the north and juniper hills to the south. Elevations range from 5,500 to 7,700 feet above sea level.

3.1.1.1 Scenic Integrity

The majority of this landscape character unit lies within IRAs with few landscape character deviations. Due to the high level of intactness in the landscape, the existing scenic integrity is high. There are a few high-clearance and closed roads that deviate from the existing landscape character in terms of form, line, color, and texture but these do not dominate the landscape. The existing patterns of vegetation are well preserved and contribute to the overall integrity of this landscape. Along the west side of the landscape, a major transmission corridor impacts the existing scenic integrity by strongly modifying the form, line, color, texture, and pattern of the surrounding landscape. These areas have a low existing scenic integrity (see Figure 2 in Attachment B).

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3.1.1.2 Scenic Attractiveness

The forms of these mountains are prominent from the south while they transition from the surrounding foothills more smoothly to the north and east. Lines created by the ridgeline are rugged with curving lines created by lower peaks. The presence of surface water is limited to the spring runoff and snow capped peaks for a portion of the year. Vegetation primarily consists of pinyon-juniper woodlands with pockets of mountain mahogany, with aspen on the high elevations and sagebrush at low elevations. Color contrast is moderate due to the dark greens in the junipers with grey and tan rocks and snowcapped peaks during the winter months. This landscape is considered to have a scenic attractiveness rating of B (see Figure 3 in Attachment B).

3.1.1.3 Landscape Visibility

There are few viewers within this landscape character unit; the edges of this landscape would be the most visible based on the viewshed analysis (see Figure 4 in Attachment B). Several roads have foreground and middleground views of this landscape character unit, including Utah State Route 18, Forest Road 011, Forest Road 009, and Forest Road 035. The town of Central and the Mountain Meadow Massacre Site NHL have foreground and middleground views of this landscape.

The majority of this landscape is visible from identified sensitive viewers, except for the interior of the unit and isolated canyons. Areas that are not visible from these identified sensitive viewers would still be seen by dispersed viewers.

3.1.1.4 Scenic Class

The south and west portion of this landscape character unit have a scenic class level of 1 due to the foreground views of high sensitivity viewers, while the majority of the landscape lies within a scenic class level of 2 (see Figure 5 in Attachment B).

3.1.1.5 Scenic Integrity Objectives

The west edge of the landscape character unit, which lies outside of the IRAs, has a SIO of moderate while the majority of the landscape would have a SIO of high (see Figure 6 in Attachment B) based on the high level of existing scenic integrity and the quality of the landscape in terms of scenic attractiveness. The portion of the landscape visible within ½ mile from the Mountain Meadows Massacre Site NHL would also have a SIO of high due to the importance of the viewshed from that site. The high SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character. The moderate SIO level will allow deviations that repeat form, line, color, texture, and pattern common to the landscape and remain visually subordinate to the landscape character.

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3.1.2 Bull Valley Mountains

The Bull Valley Mountain landscape character unit is located in the west portion of the study area and is bordered by foothills to the north and south. Elevations range from 5,800 to 7,200 feet above sea level.

3.1.2.1 Scenic Integrity

The majority of this landscape character unit lies within IRAs with few landscape character deviations. Due to the high intactness of the landscape, the existing scenic integrity is high. There are a few high-clearance roads and microwave facilities that deviate from the existing landscape character in terms of form, line, color, texture, and pattern but these do not dominate the landscape.

3.1.2.2 Scenic Attractiveness

The form of these mountains is prominent in the north end while they smoothly transition into the foothills in the south. Lines created by the ridgelines are undulating and angular in some locations. Due to the elevation of these mountains, snow covers the higher peaks for a portion of the year and spring runoff creates many small streams. Vegetation includes sagebrush and oaks at low elevations and pinyon-junipers at high elevations with pockets of mountain mahogany. Textures range from coarse in the scattered juniper communities and rock outcroppings to medium textures in the dense juniper and sagebrush area. Color contrast is moderate due to the variety of greens in vegetation and whites, tans, and reds in the rocks and exposed soils. This landscape is considered to have a scenic attractiveness rating of B.

3.1.2.3 Landscape Visibility

There are primarily recreation viewers within this landscape character unit and residential viewers along the margins. The Hardscrabble and Shinbone Trails have foreground and middleground views of the landscape. Forest Road 007 also has foreground and middleground views of the landscape. The town of Enterprise has middleground views of the landscape and a single residence in Ox Valley has foreground views of the landscape.

The west portion of this landscape is not visible from identified sensitive viewers while the majority of the eastern side of the landscape is visible except for isolated canyons. Areas that are not visible from these identified sensitive viewers would still be seen by dispersed viewers.

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3.1.2.4 Scenic Class

The area around Ox Valley has a scenic class level of 1 due to the single residence and the eastern margin adjacent to the Old Spanish Trail, while the majority of the landscape lies within a scenic class level of 2.

3.1.2.5 Scenic Integrity Objectives

The entire landscape character unit has a SIO of high. This is due to the high level of existing scenic integrity, the quality of the landscape in terms of scenic attractiveness, and the visibility of the landscape from established trails and dispersed recreation. This SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character.

3.1.3 Foothills

There are three occurrences of the foothills landscape character unit in the study area including an area north of the Bull Valley and Atchinson Mountains (north), south of the Bull Valley Mountains (south), and north of the Pine Valley Mountains (southeast). Each of these areas has similar landscape character. Elevation ranges from 4,500 to 7,000 feet above sea level.

3.1.3.1 Scenic Integrity

A portion of this landscape character unit lies within IRAs with few landscape character deviations. In these IRAs, the level of intactness of the landscape creates a high level of existing scenic integrity. There are a few high-clearance roads that deviate from the existing landscape character in terms of form, line, color, texture, and pattern but these do not dominate the landscape. The existing patterns of vegetation are well preserved and contribute to the overall integrity of this landscape. The north and south occurrences of this landscape character unit have a major transmission corridor crossing, which strongly impact the existing scenic integrity. This corridor modifies the form, line, color, texture, and pattern of surrounding landscape. These areas have a low existing scenic integrity. There are areas that have been chained in the northern occurrence of this landscape character unit, which remain visually subordinate to the overall landscape character but do deviate in terms of form, line, color, texture, and pattern. These areas have a moderate existing scenic integrity. The other areas within the foothill landscape character unit have a high existing scenic integrity due to the limited modifications in the landscape and are limited to high-clearance roads.

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3.1.3.2 Scenic Attractiveness

The moderately steep forms associated with this landscape contrast with the more rugged forms of the adjacent mountains and the indistinct forms of the adjacent basins. There is limited influence of surface water in this landscape and is primarily in the form of snow fall during the winter with small streams forming during the spring runoff. Vegetation is dominated by pinyon and juniper through most of the unit with sagebrush appearing at lower elevations and oak communities at high elevations and in draws. Textures range from medium textured in dense pinyon-juniper areas to coarse textured areas with scattered vegetation and rock outcroppings. Color contrast is moderate due to the variety of greens in the different vegetations, red and tan rock outcroppings, and snow cover during the winter months. This landscape is considered to have a scenic attractiveness rating of B.

3.1.3.3 Landscape Visibility

Several roads have foreground and middleground views of this landscape character unit including Utah State Route 18, Forest Road 011, Forest Road 010, and Forest Road 035. The towns of Enterprise, Central, Pinto, and Pine Valley have foreground and middleground views of this landscape. There are also recreation foreground and middleground views of the landscape including Mountain Meadow Massacre Site NHL, Summit/Rock Springs Trail, Water Canyon Trail, Cemetery Trail, Indian Hollow Spring Trail, and the recreation complex at Pine Valley.

The majority of this landscape is visible from identified sensitive viewers except for isolated canyons. The areas that are not visible from these identified sensitive viewers would still be seen by dispersed viewers.

3.1.3.4 Scenic Class

The areas around Central, Pinto, Pine Valley, and trails that access the Pine Valley Mountain Wilderness and the Old Spanish Trail have a scenic class level of 1, while the majority of the landscape lies within a scenic class level of 2. There is a small area with a scenic class level of 3 along the southwest margin of the landscape, which is due to the limited number of viewers in this landscape character unit.

3.1.3.5 Scenic Integrity Objectives

The majority of the foothill landscape character unit has a SIO of high except for a few inclusions. The area around the major utility corridor that is not in an IRA has a moderate SIO except for land within ½ mile of the Mountain Meadow Massacre Site NHL which would maintain a SIO of high. The areas of chaining that are adjacent to the town of Enterprise have a high SIO due to their high level of visibility. The high SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character. The moderate SIO level will allow deviations that repeat form, line, color, texture, and pattern common to the landscape and remain visually subordinate to the landscape character.

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3.1.4 Juniper Hills

There are three occurrences of the juniper hills landscape character unit in the study area including an area east of Enterprise, south of Newcastle, and between Central and Pine Valley. Each of the juniper hills areas has similar landscape character. Elevation ranges from 5,400 to 6,800 feet above sea level.

3.1.4.1 Scenic Integrity

The majority of this landscape character unit contains areas that have been chained in a manner that does not dominate the valued landscape character but instead remain visually subordinate. This is due to the repetition of form, line, color, texture, and pattern from the overall landscape character. These areas also contain a network of high-clearance and gravel roads. The existing scenic integrity is moderate in this landscape. The occurrence of this landscape character unit east of Enterprise has a major transmission corridor crossing, which strongly alters the existing scenic integrity. This corridor strongly modifies the form, line, color, texture, and pattern of the surrounding landscape. This area has a low existing scenic integrity. The remaining areas within the unit have a high scenic integrity since the existing patterns of vegetation are well preserved and contribute to the overall integrity of the landscape.

3.1.4.2 Scenic Attractiveness

This landscape is characterized by moderately to steeply undulating, rounded low hills. There is a limited influence of water in this landscape; winter snowfall creates seasonal streams that flow through this landscape. Vegetation is uniformly dominated by pinyon-juniper, although in some occurrences they appear mottled due to populations of sagebrush, grass, and forbs interspersed between stands of juniper. Textures in the vegetation are typically medium to coarse while color diversity is limited to dark green, isolated pockets of lighter greens, and tans (seasonally). The juniper-dominated vegetation, typical of the landscape, moderately contrasts with the adjacent basin landscape. This landscape is considered to have a scenic attractiveness rating of B.

3.1.4.3 Landscape Visibility

Forest Road 011 and Forest Road 035 have foreground and middleground views of this landscape character unit. The town of Central and residences east of Enterprise have foreground and middleground views of this landscape.

Almost all of this landscape is visible from identified sensitive viewers including residences, travel routes, and recreation areas.

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3.1.4.4 Scenic Class

The areas around Central, Forest Road 035, and the residences east of Enterprise have a scenic class level of 1, while the majority of the landscape lies within a scenic class level of 2.

3.1.4.5 Scenic Integrity Objectives

The northeast occurrence of the juniper hills landscape character unit would have a SIO of moderate due to the large areas of chaining and the associated road networks, which remain visually subordinate to the landscape. The area around the major utility corridor also would have a moderate inventory SIO due to the modifications to landscape character. The occurrence of this landscape character unit between Central and Pine Valley would have a high SIO due to visibility of this landscape from Forest Road 035, a major recreation destination route in the Forest. The high SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character. The moderate SIO level will allow deviations that repeat form, line, color, texture, and pattern common to the landscape and remain visually subordinate to the landscape character.

3.1.5 Pine Valley Mountains

The Pine Valley Mountains landscape character unit is located in the southeast corner of the study area and is bordered by foothills to the north. Elevations range from 6,300 to 8,700 feet above sea level.

3.1.5.1 Scenic Integrity

The majority of this landscape character unit lies within IRAs or the Pine Valley Mountain Wilderness with very limited landscape character deviations. Due to the intactness of the landscape, the existing scenic integrity is very high for the areas within IRAs and Wilderness. The other portions of the landscape have an existing scenic integrity of high due to a few high-clearance roads that deviate from the existing landscape character in terms of form, line, color, texture, and texture but these do not dominate the landscape. The existing patterns of complex vegetation communities are well preserved and contribute to the overall integrity of this landscape. The trails and high level of recreation opportunities within the unit also increase the integrity of the landscape through the development of a strong sense of place.

3.1.5.2 Scenic Attractiveness

The form created by the mountains is bold and in strong contrast to the surrounding basin and foothills. Lines created by the ridgelines are jagged and complex, which stand out against the rolling lines created by the foothills. Due to the high elevation of these mountains, snow caps the mountains for a majority of the year and few perennial streams, including the Santa Clara

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River and flow from the mountains. In addition to these water sources, a few natural springs are located in the landscape. Vegetation is very diverse with pinyon-junipers occurring at middle elevations and aspens, spruce, and fir at high elevations. Textures range from coarse-textured rock outcroppings and scattered junipers to medium-textured dense junipers and deciduous trees. Color contrast is high due to the variety of greens in the vegetation, tans and greys in the rock outcroppings, and white on the snowcapped peaks. Seasonal color also increases interest within the deciduous tree communities at high elevations. This landscape is considered to have a scenic attractiveness rating of A.

3.1.5.3 Landscape Visibility

Forest Road 035 and Forest Road 011 have middleground views of the landscape. The town of Pine Valley has foreground and middleground views of this landscape. There is also recreation foreground and middleground views of the landscape including Water Canyon Trail, Cemetery Trail, Indian Hollow Spring Trail, Goat Spring Trail, the recreation complex at Pine Valley, and dispersed recreation in the Pine Valley Mountain Wilderness.

The majority of this landscape is visible from identified sensitive viewers except for isolated canyons on the south side of the unit. This is due to the large number of recreation opportunities located in this landscape. The areas that are not visible from these identified sensitive viewers would still be seen by dispersed viewers.

3.1.5.4 Scenic Class

Since the landscape is considered to have a Scenic Attractiveness rating of A, the entire landscape character unit has a scenic class level of 1.

3.1.5.5 Scenic Integrity Objectives

The portions of this landscape within IRAs and Wilderness have a SIO of very high while the remaining areas have a SIO of high. This is due to the high quality of the existing landscape character in terms of both attractiveness and integrity. The very high SIO level will only allow minute deviations in the landscape and is the most restrictive SIO class. The high SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character.

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3.1.6 Sagebrush Basin

There are several occurrences of the sagebrush basin landscape character unit in the study area but they are usually privately owned. Each sagebrush basin area has similar landscape character. Elevation ranges from 5,200 to 6,200 feet above sea level.

3.1.6.1 Scenic Integrity

The majority of this landscape character unit is owned by private land owners but is a defining feature in the experience within the Forest because of its strong historic rural character. This is due to the intactness of the landscape, including Ox Valley and the area around Pinto, Grassy Flat, Grass Valley, and Pine Valley where the existing scenic integrity is high. The juxtaposition of a flat grass-dominated landscape with steep mountainous landscapes creates a strong sense of place in these landscapes. Mountain Meadow is heavily modified along its eastern edge due to the major transmission corridor crossing the unit, which modifies the existing scenic integrity. This corridor strongly modifies the form, line, color, and texture of surrounding landscape. These areas have a low existing scenic integrity. The remainder of Mountain Meadow, due to the rural development that does not decrease integrity, maintains the baseline scenic integrity level of moderate.

3.1.6.2 Scenic Attractiveness

The largely horizontal form of this landscape is defined and enhanced by adjacent foothill and mountain landscapes. There is little to no influence of water for the majority of the year except for snowfall during the winter. Though vegetation is generally dominated by sagebrush, grasses are found interspersed throughout and often dominate pasture lands. Additionally, junipers are occasionally scattered at the edge of this landscape at its interface with adjacent foothill and mountain landscapes. Textures range from uniformly medium textures in sagebrush-dominated areas to medium and fine textures where grasses and sagebrush are co-dominate or in locations where grasses dominate. Color contrast, largely a result of the vegetation, is low with a mixture of greens, grey-greens, and browns (when grasses go dormant). This landscape is considered to have a scenic attractiveness rating of C.

3.1.6.3 Landscape Visibility

Mountain Meadow Massacre Site NHL and the adjacent residences have foreground and middleground views of the landscape. Several roads have foreground and middleground views of this landscape character unit including Utah State Route 18, Forest Road 011, Forest Road 010, and Forest Road 035. The town of Central, Pinto, and Pine Valley have foreground and middleground views of this landscape.

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Almost all of this landscape is visible from identified sensitive viewers including residences, travel routes, and recreation areas. This is due to this landscape being located adjacent to higher elevation landscapes which have superior views.

3.1.6.4 Scenic Class

The areas around Central, Mountain Meadow, Pinto, and Pine Valley have a scenic class level of 1 while the majority of the landscape lies within a scenic class level of 2.

3.1.6.5 Scenic Integrity Objectives

Most of the sagebrush basin landscape character unit has a SIO of high due to the intactness of the landscape and the importance of the landscape to the character of the Forest in creating a rural character of historic ranching operations. This includes Ox Valley, the area around Pinto, Grassy Flat, Grass Valley, and Pine Valley. Most of Mountain Meadow has an inventory SIO of moderate due to the major utility corridor except for areas within a ½ mile of the Mountain Meadow Massacre Site NHL which would have a high SIO in order to preserve views from this site. The high SIO level will only allow deviations that repeat form, line, color, texture, and pattern common to the landscape and are not evident to be out of character. The moderate SIO level will allow deviations that repeat form, line, color, texture, and pattern common to the landscape and remain visually subordinate to the landscape character.

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Attachment A – Letter from U.S. Forest Service

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USDA United States Department of Agriculture | Forest Service | Intermountain Region | 324 25th Street Ogden, UT 84401 801-625-5605

File Code: 2380
Date: April 29, 2010

Cindy Smith
Project Manager
EPG
247 South 500 East
Salt Lake City, UT 84102

Dear Ms. Smith,

On April 22nd, Rick Dustin, Forest Landscape Architect on the Dixie National Forest and myself conducted a field investigation of the visual resource study methodology as proposed for the alternative routes proposed for the Sigurd to Red Butte power line on the Pine Valley Ranger District. Overall, we were much impressed by the depth and scope of the proposed study methodology that you have proposed. Our intention for this field trip was to try to match the process outlined in your study plan to the situation existing with the on-the-ground visual resource, and to identify any needed analysis gaps or potential procedural problem areas. All-in-all, your process is a logical one and covers most of our concerns. The process does not cover analysis of the existing condition and the visual vulnerability of the landscape settings of the Pine Valley Ranger District, but we assume that this will be covered in the actual EIS outside of the scenic resource specialist report.

I will attempt to address our concerns for the visual vulnerability of the landscape settings as well as propose some potential procedures and solutions to protect both the natural and cultural landscape of the Pine Valley Ranger District.

Of the alternatives proposed for the power line to cross the Pine Valley Ranger District, both the east and the west alternatives encompass relatively scenically intact landscapes, with only small-scale human intrusions and developments.

The eastern alternative route, from Newcastle through Pine Valley, crosses a scenically attractive cultural landscape of small ranchlands, alternating with hill slopes of pinyon-juniper. Small-scale, irregularly-shaped irrigated hayfield and pastures follow the twisting valley bottom of Pinto Creek. There is a local power line from Newcastle to Pine Valley, a single wood pole line, typical in scale to much of the rural west, which parallels a gravel road, frequently disappearing into the canyon folds and vegetation along Pinto Creek. The town of Pinto, a small village with a few historic homes, and other, more recent homes of modest size, occupies a small valley setting along Pinto Creek. The overall effect is a working cultural landscape that is visually cohesive, and the scale and type of development seems to fit in well and complement an

attractive pastoral landscape. The presence of the existing, small-scale, electrical line is not a significant visual intrusion.

The western alternative, along the Ox Valley Hills, crosses a relatively pristine, undeveloped landscape, with a predominantly natural setting. There is very little evidence of forced landscape change along this route, with only limited, small human intrusions upon the natural landscape. Only a few minor roads and trails access this area, effectively limiting land use development. The overall visual effect is one of high scenic integrity and high vulnerability to land use changes.

The central route alternative parallels an existing large-scale utility corridor of three major power lines. These three lines all are of different architectural styles and their combined visual impact is a major one. In this relatively open landscape, these three lines can be seen at great distances, particularly the large, steel-towered line, the central of the three, with wire of high reflective characteristics. These three lines have created an adverse impact to the scenic resource, so much so that potential mitigation efforts are not plausible, with the result that the scenic integrity of the landscape has been permanently affected.

As would be expected in a designated (both in the Dixie National Forest Management Plan and the Westwide Corridor EIS) utility corridor, in the central route the existence of a large power line often attracts other industrial land uses, and creates a multi-faceted utility corridor, one that cannot be designed to be subordinate to the natural or cultural landscape. The cumulative impacts of utility corridor expansion, and the addition of other lines and land uses, needs to be carefully considered in this study.

After much discussion and field review, we recommend four actions that we feel will be mutually beneficial to both our agency and the electrical utility. The analysis and subsequent results from these four actions will help protect and enhance the scenic resource.

1. The Dixie National Forest Management Plan has both gaps and inaccuracies in the Scenery Management System values on the Pine Valley Ranger District. It is recommended that your consultant group, with the cooperation of the Forest Service IDT LA and the Dixie Forest LA, analyze and assign Scenic Integrity Objectives to those unassigned areas along all the proposed power line routes.
2. It is our opinion that the protection of the Scenic Resource is primarily based on limiting the changes to landscape character. This project has the potential to change the existing landscape character on a large scale. It is recommended that your consultant group work with the Forest Service IDT LA in analyzing landscape character, focusing on the scale and location of changes for each of the alternatives.
3. Selected areas for visual simulations would be helpful to communicate the scale and appearance of this project to the public. Three areas for simulation were identified.
   a. The Pinto townsite
   b. Four mile Bench along the Santa Clara River near Pine Valley
   c. The bench lands south of the town of Enterprise.
4. An in-depth discussion of cumulative effects on all potential routes, including a realistic look into the future and the potential for additional power line construction in the region.

A thorough review of the visual analysis and land use data that is currently available, combined with the knowledge gained from a field investigation, suggest that your consultant group devote significant time and energy to an in-depth analysis of the potential benefits to the scenic resource of the central route alternative.

We look forward to working with you on this important energy transmission project.

Sincerely,

MICHAEL KANIA
REGIONAL RECREATION PLANNER

cc: Gretchen Merrill, Susan Howle, Bevan Killpack, Liz Close

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Attachment B – Figures

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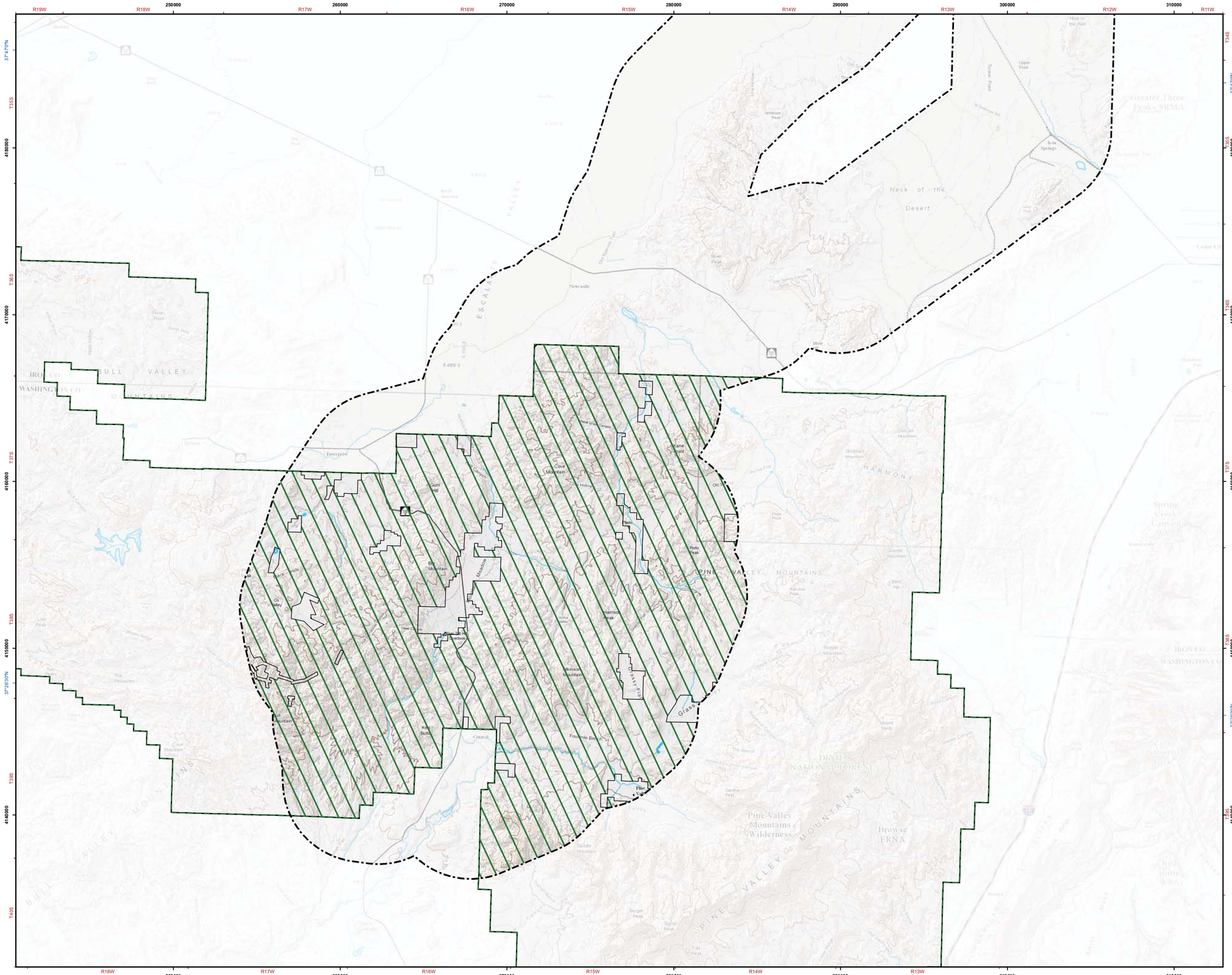


FIGURE 1
STUDY AREA

Legend

Project Features
- Visual Resource Study Area
- SIO Study Area

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

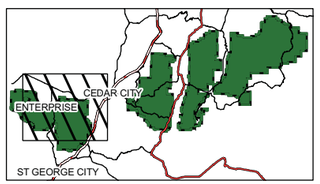
Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

Land Jurisdiction
- USFS Boundary
- Private

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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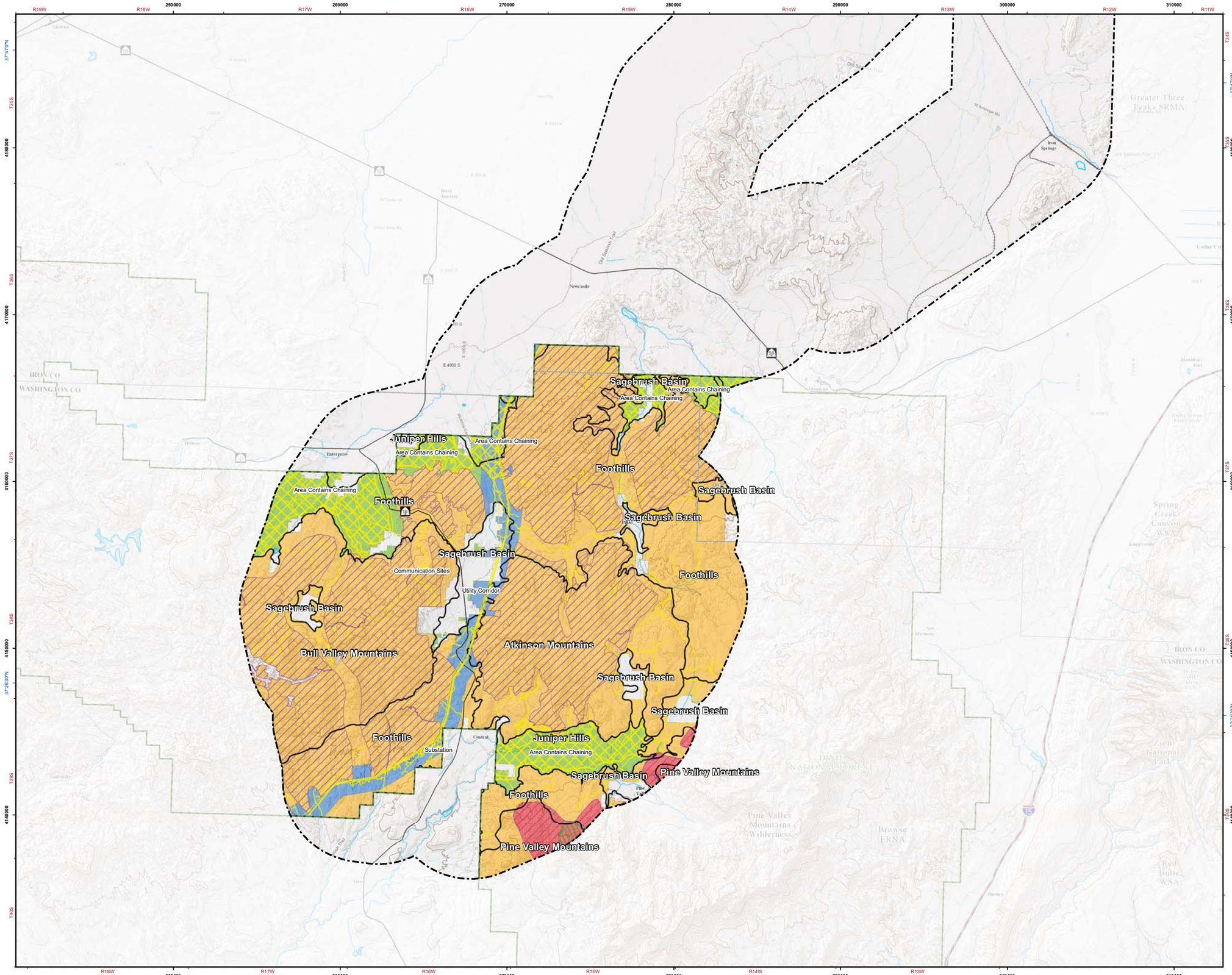


FIGURE 2
EXISTING SCENIC INTEGRITY

Legend

Project Features
- Visual Resource Study Area

Landscape Character
- Landscape Character Unit

Existing Scenic Integrity
- Very High
- High
- Moderate
- Low
- Private

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

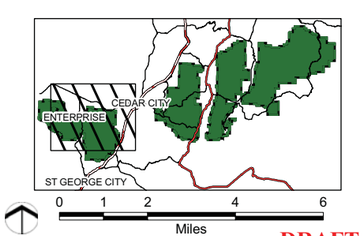
Landscape Character Deviations
- Chained Areas
- Linear Landscape Deviations

Land Jurisdiction
- USFS Boundary
- National Inventoried Roadless Area
- Wilderness Areas

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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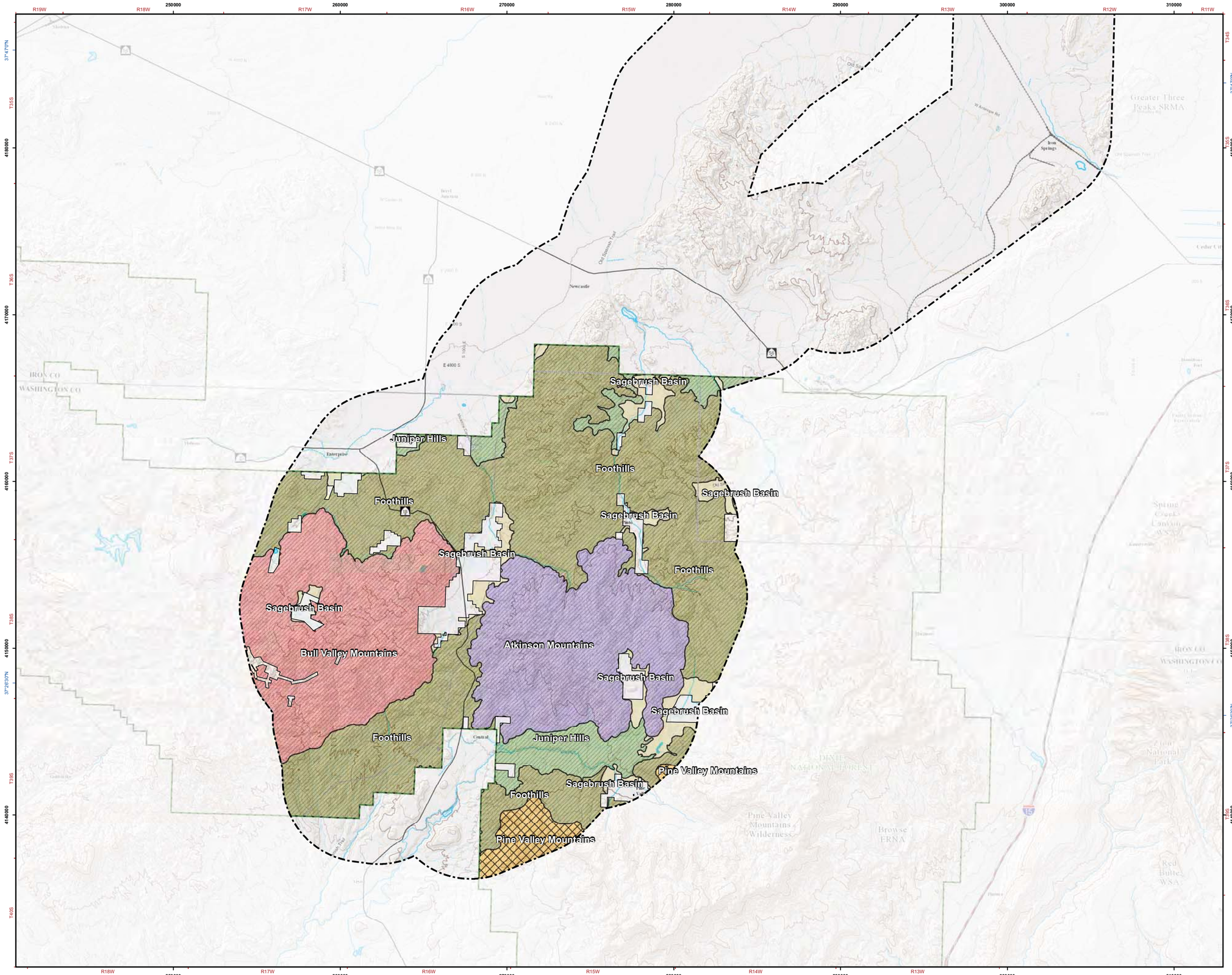


FIGURE 3
SCENIC ATTRACTIVENESS

Legend

Project Features
- Visual Resource Study Area

Landscape Character
- Atkinson Mountains
- Bull Valley Mountains
- Foothills
- Juniper Hills
- Pine Valley Mountains
- Sagebrush Basin

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

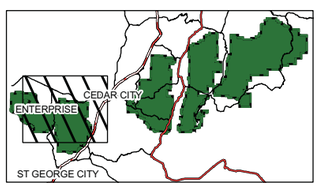
Scenic Attractiveness Rating
- A
- B
- C
- Irrigated Agriculture (B)
- Developed

Land Jurisdiction
- USFS Boundary
- Private

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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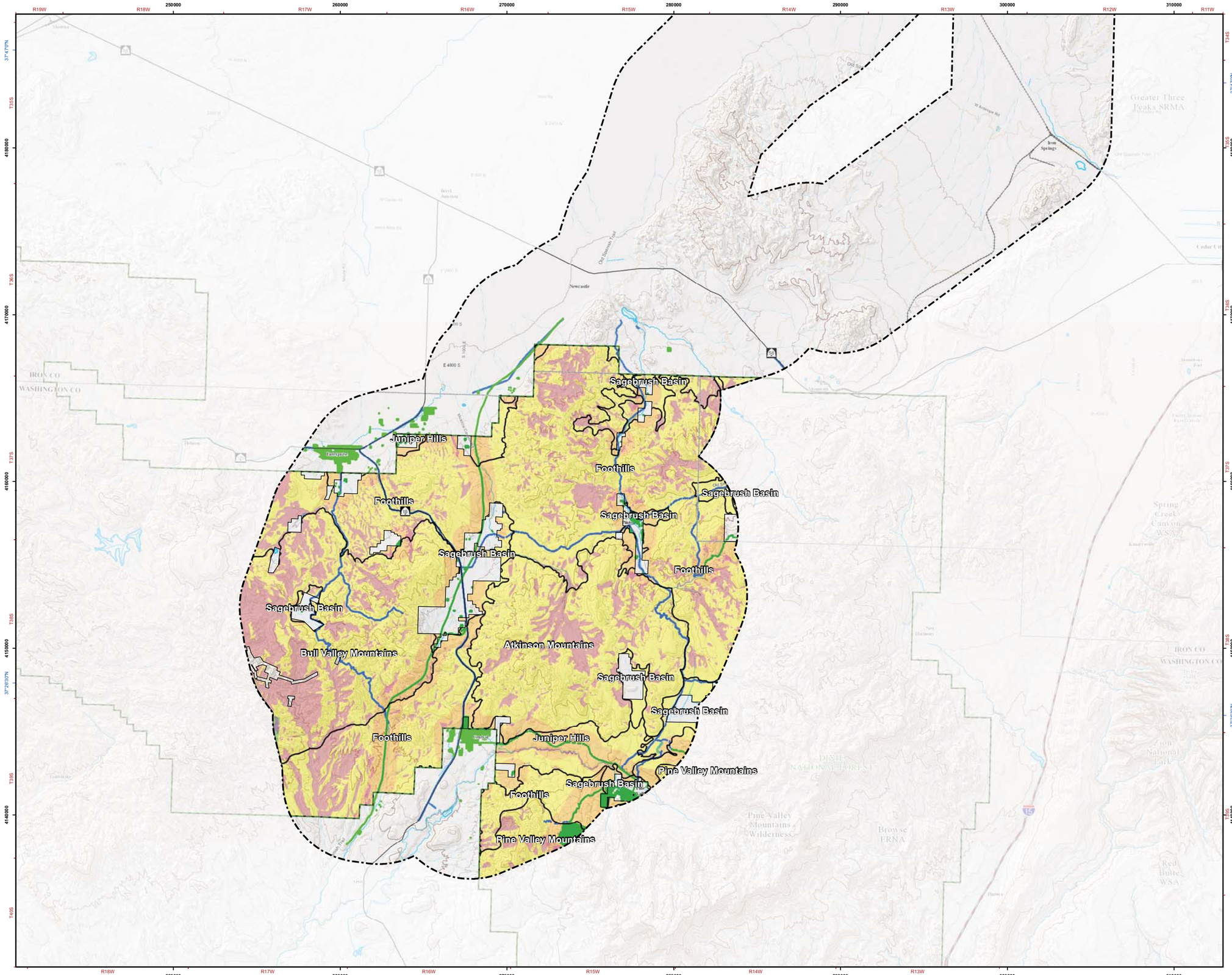


FIGURE 4
LANDSCAPE VISIBILITY

Legend

Project Features
- Visual Resource Study Area

Landscape Character
- Landscape Character Unit

Sensitive Viewer Locations
- High
- Moderate

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

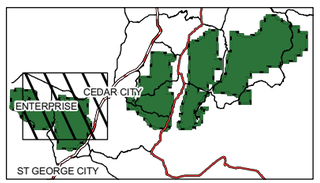
Landscape Visibility
- Fg1
- Mg1
- Mg2
- Not Seen from Sensitive Viewers

Land Jurisdiction
- USFS Boundary
- Private

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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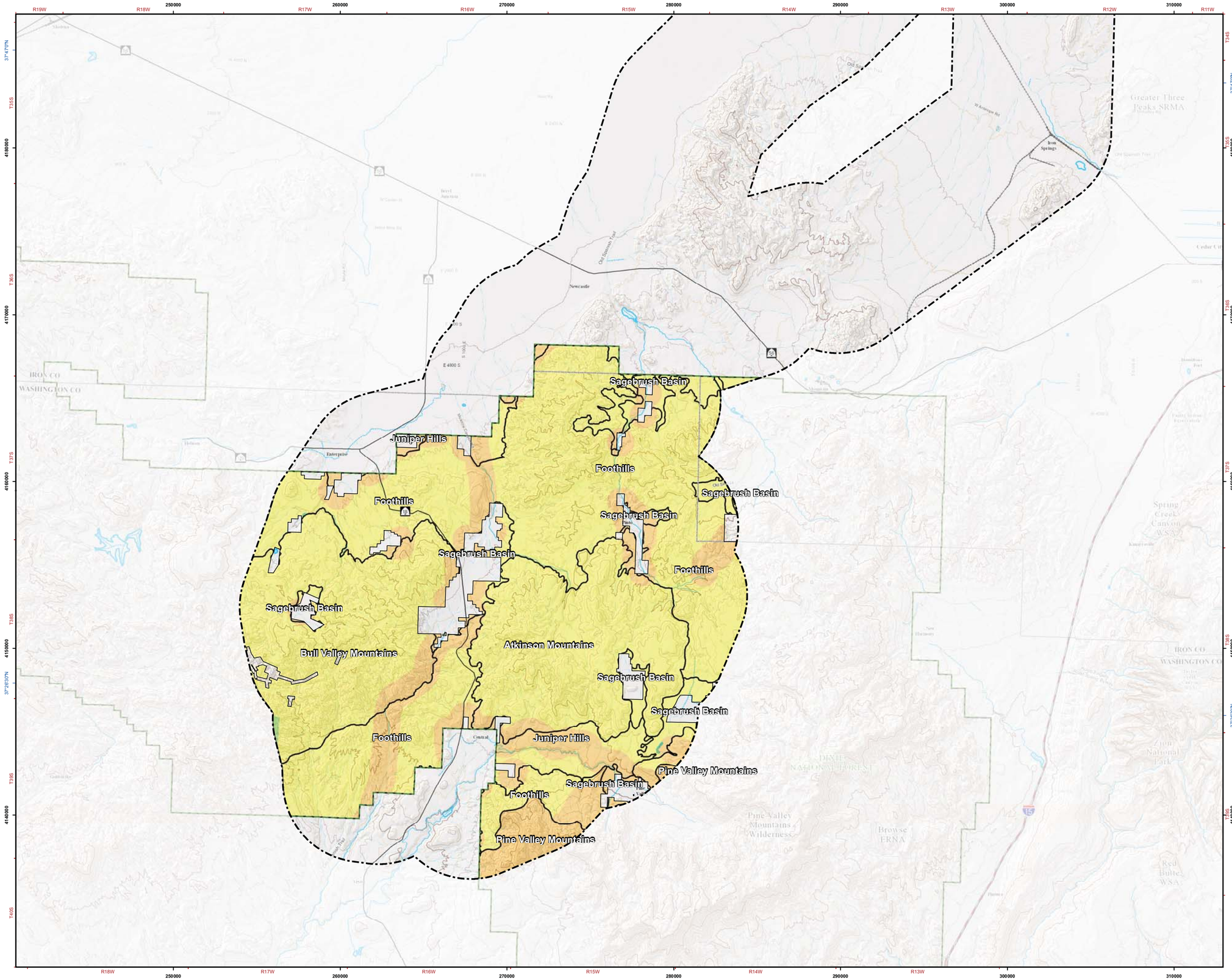


FIGURE 5
SCENIC CLASSES

Legend

Project Features
- Visual Resource Study Area

Landscape Character
- Landscape Character Unit

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

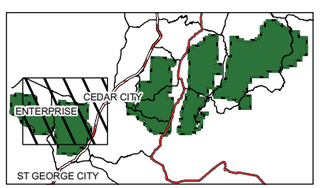
Scenic Class
- 1
- 2
- 3

Land Jurisdiction
- USFS Boundary
- Private

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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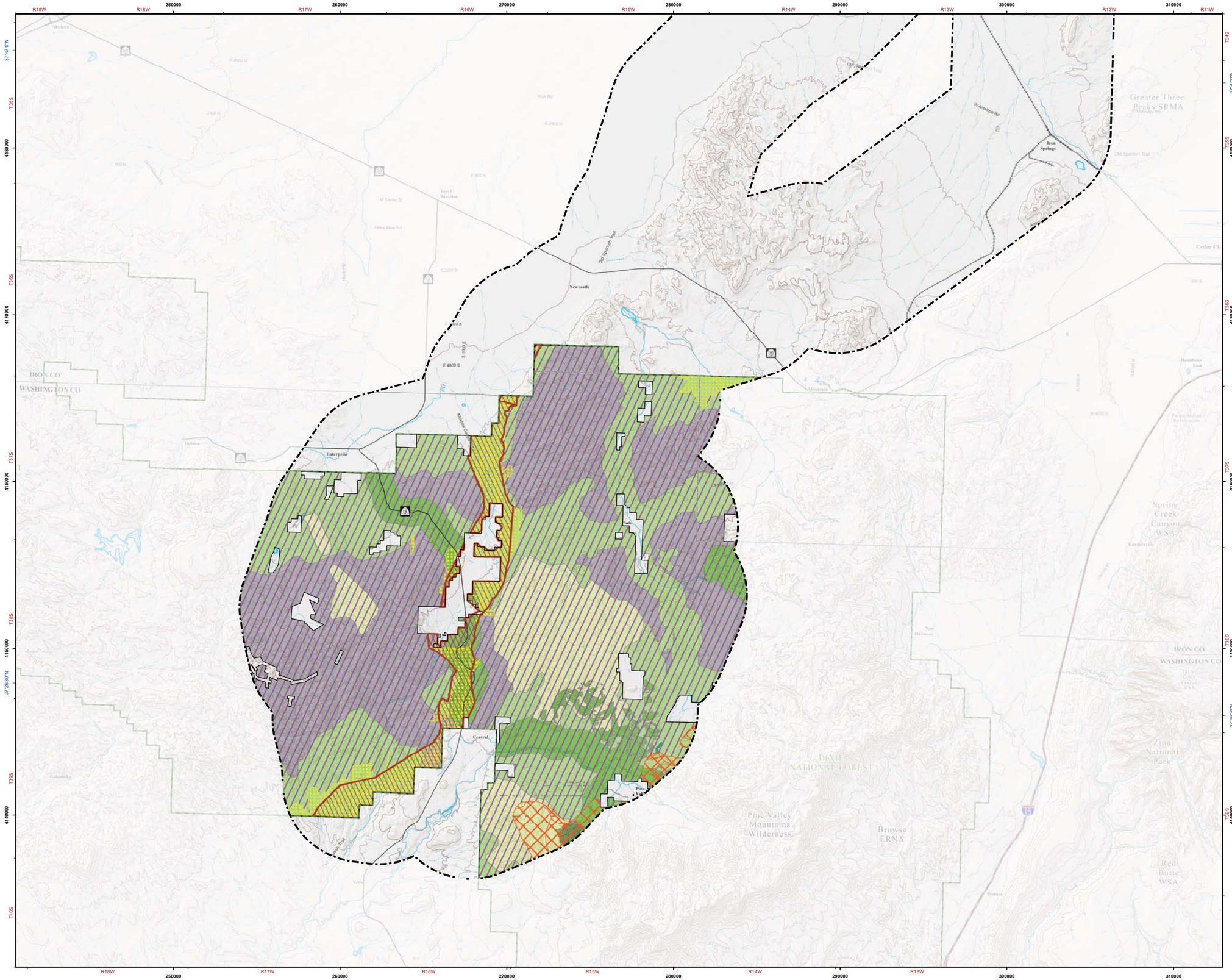


FIGURE 6
INVENTORY AND EXISTING SCENIC INTEGRITY OBJECTIVES

Legend

Project Features
- Visual Resource Study Area

Transportation Features
- Interstate Highway
- US Highway
- State Highway
- Railroad
- Airport Runway

Topographic Features
- Index Contour (500 Meter Interval)
- Index Contour (100 Meter Interval)
- Contour (50 Meter Interval)

Utility Corridors
- West-Wide Energy Corridor

Inventory SIOs
- Very High
- High
- Moderate

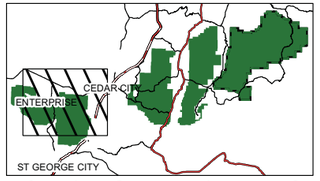
Existing SIOs
- Very High
- High
- Moderate
- Low
- Unassigned

Land Jurisdiction
- USFS Boundary
- Private

Hydrologic Features
- Perennial River or Stream
- Intermittent River Stream
- Canal, Ditch, or Pipeline
- Lake, Pond, or Reservoir
- Swamp or Marsh
- Intermittent Lake or Pond

Administrative Boundaries
- County Boundary

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT



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SCENIC INTEGRITY OBJECTIVE DEVELOPMENT
DIXIE NATIONAL FOREST

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Attachment C – Scenic Attractiveness Rating Sheets

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SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Atchinson Mountains
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	37.41097, -113.53986

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*		**4**			
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The forms of these mountains are prominent from the south while they transition from the surrounding foothills more smoothly to the north and east. Lines created by the ridgeline are rugged with curving lines created by lower peaks. The presence of surface water is limited to the spring runoff and snow capped peaks for a portion of the year. Vegetation primarily consists of pinyon-juniper woodlands with pockets of mountain mahogany, with aspen on the high elevations and sagebrush at low elevations. Color contrast is moderate due to the dark greens in the junipers with grey and tan rocks, and snowcapped peaks during the winter months. Landscape character deviations are limited since the majority of the landscape lies within Inventoried Roadless Areas, except for a major utility corridor along the western margin of the landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Bull Valley Mountains
SCENIC ATTRACTIVENESS CLASS RATING	B (12)
PHOTOGRAPH LOCATION	37.48008, -113.72918

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*		**4**			
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The form of these mountains is prominent in the north end while they smoothly transition into the foothills in the south. Lines created by the ridgelines are undulating and angular in some locations. Due to the elevation of these mountains, snow covers the higher peaks for part of the year and spring runoff creates many small streams. Vegetation includes sagebrush and oaks at low elevations, pinyon-junipers at high elevations with pockets of mountain mahogany. Textures range from coarse in the scattered juniper communities and rock outcropping, to medium textures in the dense juniper and sagebrush area. Color contrast is moderate due to the variety of greens in vegetation, whites, tans, and reds in the rocks and exposed soils. Landscape character deviations are limited since the majority of the landscape lies within Inventoried Roadless Areas, there are a few microwave facilities but they do not dominate the landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Foothills
SCENIC ATTRACTIVENESS CLASS RATING	B (11)
PHOTOGRAPH LOCATION	37.56161, -113.52688

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*			**3**		
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The moderately steep forms associated with this landscape contrasts with the more rugged forms of the adjacent mountains and the indistinct forms of the adjacent basins. There is limited influence of surface water in this landscape and is primarily in the form of snow fall during the winter with small streams forming during the spring runoff. Vegetation is dominated by pinyon and juniper through most of the unit with sagebrush along the lower elevations and oak communities at high elevations and in draws. Textures range from medium textured dense pinyon-juniper areas to coarse textured areas with scattered vegetation and rock outcroppings. Color contrast is moderate due to the variety of greens in the different vegetations, red and tan rock outcroppings, and snow cover during the winter months. Landscape character deviations include a major utility corridor and chained areas. Areas within this unit that have been chained were designed in a manner that they repeat form, line, color, and texture of the surrounding landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Juniper Hills
SCENIC ATTRACTIVENESS CLASS RATING	B (10)
PHOTOGRAPH LOCATION	37.59259, -113.52301

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*				**2**	
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*				**2**	
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*			**3**		
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

This landscape is characterized by moderately to steeply undulating, rounded, low hills. There is a limited influence of water in this landscape, winter snowfall creates seasonal streams that flow through this landscape. Vegetation is uniformly dominated by pinyon-juniper, although in some instances they appear mottled due to populations of sagebrush, grass, and forbs interspersed between stands of pinyon-juniper. Textures in the vegetation are typically medium to coarse, while color diversity is limited to dark green, isolated pockets of lighter greens, and tans (seasonally). The juniper-dominated vegetation, typical of the landscape, moderately contrasts with the adjacent basin landscape. Landscape character deviations include a major utility corridor and chained areas. Areas within this unit that have been chained were designed in a manner that they repeat form, line, color, and texture of the surrounding landscape.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Pine Valley Mountains
SCENIC ATTRACTIVENESS CLASS RATING	A (16)
PHOTOGRAPH LOCATION	37.45316, -113.47529

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*	**5**	4	3	2	1
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*	5	4	**3**	2	1
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*	5	**4**	3	2	1
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*	5	**4**	3	2	1

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The form created by the mountains is bold and in strong contrast to the surrounding basin and foothills. Lines created by the ridgelines are jagged and complex which stand out against the rolling lines created by the foothills. Due to the high elevation of these mountains, snow caps the mountains for a majority of the year and there are a few perennial streams that flow from the mountains including the Santa Clara River. In addition to these streams, there are a few natural springs located in the landscape. Vegetation is very diverse with pinyon-junipers occurring at middle elevations, while aspens, spruce, and fir grow at the high elevations. Textures range from coarse textured rock outcropping and scattered junipers to medium textured dense junipers and deciduous trees. Color contrast is high due to the variety of greens in the vegetation, tans and greys in the rock outcroppings, and white snowcapped peaks. Seasonal color also increases interest within the deciduous tree communities at high elevations. Landscape character deviations are limited in this landscape due to the majority of the unit lying within the Pine Valley Mountain Wilderness area and adjacent Inventoried Roadless Areas.

PHOTOGRAPH

SCENIC ATTRACTIVENESS RATING WORKSHEET (SMS)

LANDSCAPE CHARACTER DESCRIPTION	Sagebrush Basin
SCENIC ATTRACTIVENESS CLASS RATING	C (7)
PHOTOGRAPH LOCATION	37.47727, -113.63208

SCENIC ATTRACTIVENESS CLASSIFICATION RATING

	5	4	3	2	1
LANDFORM PATTERNS AND FEATURES *Landforms, rock features & their juxtaposition to one another.*					**1**
SURFACE WATER CHARACTERISTICS *Occurrence & characteristics of rivers, streams, lakes, & wetlands.*					**1**
VEGETATION PATTERNS *Occurrence & characteristics of potential vegetative communities & the patterns formed by them.*				**2**	
LAND USE PATTERNS & CULTURAL FEATURES *Visible elements of historic & present land use contributing to image & sense of place.*			**3**		

SCENIC ATTRACTIVENESS CLASSIFICATION LEGEND: A = 15 or more B = 10 - 14 C = 9 or less

NARRATIVE LANDSCAPE DESCRIPTION

The largely horizontal form of this landscape is defined and enhanced by adjacent foothill and mountain landscapes. There is little to no influence of water for the majority of the year except for snowfall during periods of the winter. Though vegetation is generally dominated by sagebrush, grasses are found interspersed throughout and often dominate pasture lands. Additionally, junipers are occasionally scattered at the edge of this landscape at its interface with adjacent foothill and mountain landscapes. Textures range from uniformly medium textured sagebrush dominated areas, to medium and fine textures where grasses and sagebrush are co-dominate, or in locations where grasses dominate. Color contrast, largely created by vegetation, is low with a mixture of greens, grey-greens, and browns (when grasses go dormant). Cultural features in this landscape includes historic ranching operations and historical sites. The primary landscape character deviation is a major utility corridor.

PHOTOGRAPH

Appendix I – Visual Simulations

APPENDIX I – VISUAL SIMULATIONS

I.1 Introduction

Visual simulations were developed to demonstrate the potential impacts and associated contrast caused by the addition of the Sigurd to Red Butte No. 2 – 345-kilovolt (kV) Transmission Project (Project) in a variety of landscape conditions. The landscapes crossed by the Project range from flat, sagebrush-dominated basins to steep, densely vegetated mountains. Fifteen simulations were prepared at twelve viewpoints throughout the Project study area including residential areas, travel routes, and recreation areas. The simulated condition includes both standard mitigation as well as selective mitigation measures as proposed.

Three additional simulations were added to this Environmental Impact Statement (EIS) based on comments received on the Draft EIS. Several comments expressed concern about the potential modification of the viewshed from the Mountain Meadows Massacre Site National Historic Landmark (NHL). The new simulation, Figure I-14, is located adjacent to the Mountain Meadows Massacre Site NHL on the valley floor. The second simulation, Figure I-12, was added to describe the potential impacts from Alternative S7-A in comparison to the other alternative routes adjacent to the Mountain Meadows Massacre Site NHL on Dan Sill Hill. The third simulation is from Utah State Route 18 at the north edge of the town of Central, Figure I-15, and was added due to comments on the Draft EIS to further describe impacts to this community.

A visual contrast worksheet (Bureau of Land Management Form 8400-4) was prepared for each agency approved key observation point to describe the visual contrast generated by the Project. These sheets were prepared for all viewpoints regardless of jurisdiction crossed. The methodology used to determine project contrast is defined in Appendix H – Visual Resources Supporting Data.

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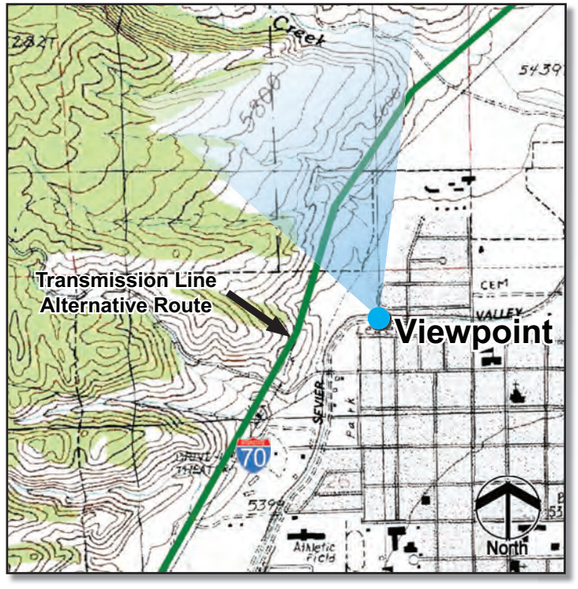
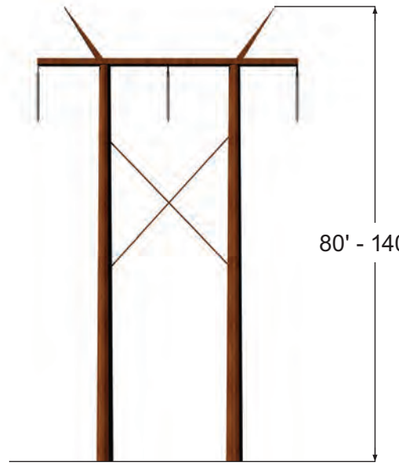
Existing Condition – View looking northwest from the Richfield Canal Trail, north of 600 North, in a residential area in Richfield



View Location: Community of Richfield looking northwest toward Interstate 70. Approximate distance of transmission line from photo location is 0.2 mile.

Simulated Condition – View of alternative routes N1, N2, N2-A, N3, N4, N5, and N6 for the 345kV transmission line



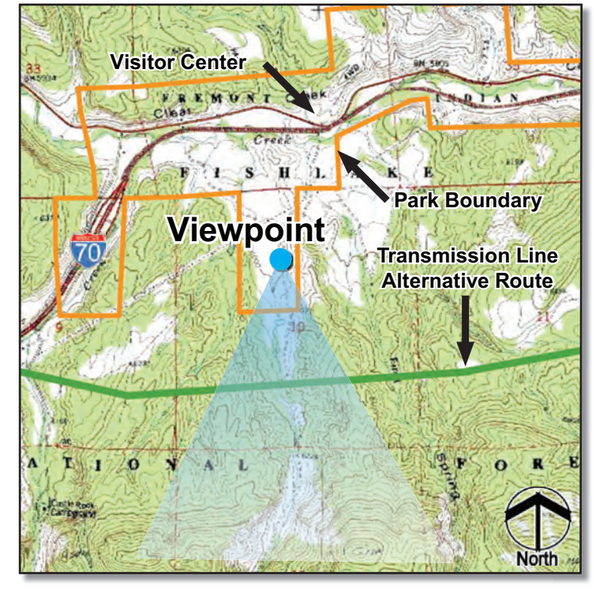
Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 12-18-09 Time: 12:15 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

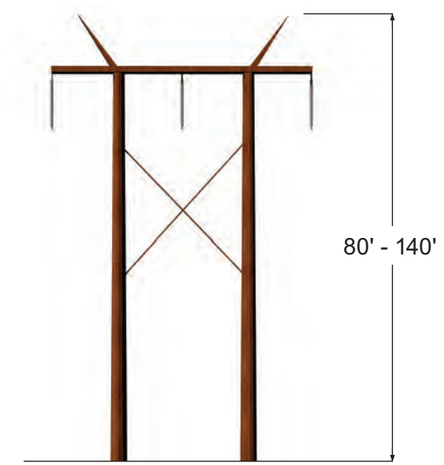
Figure I-1
October 2012

Existing Condition – View looking south from Paiute ATV Trail No. 1 in the Fremont Indian State Park



View Location: Paiute ATV Trail No. 1 south of Fremont Indian State Park Visitor Center looking south. Approximate distance of transmission line from photo location is 0.5 mile.

Simulated Condition – View of alternative routes N1, N2, N2-A, N3, N4, N5, and N6 for the 345kV transmission line in the Fishlake National Forest



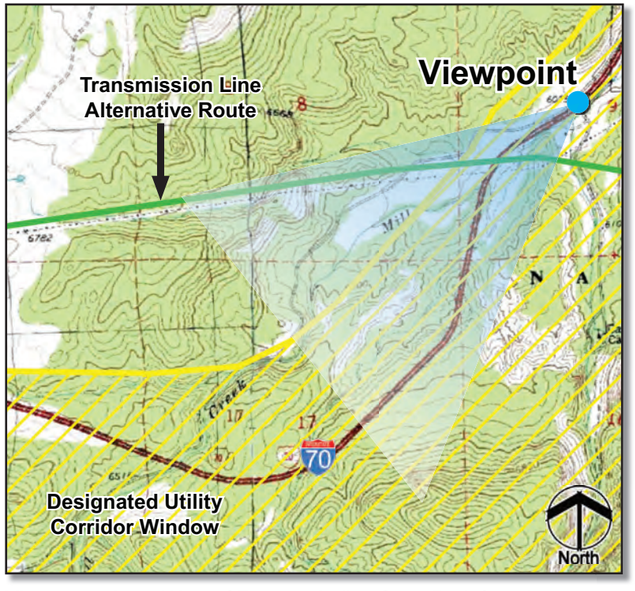
Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-22-10 Time: 11:59 a.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

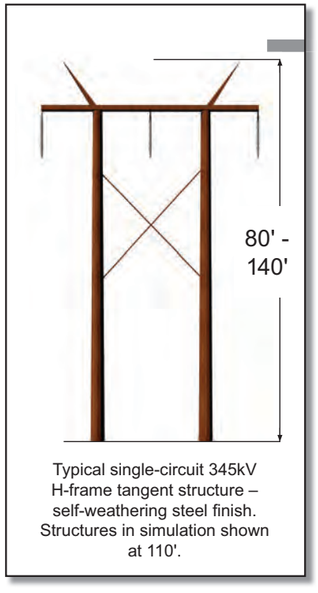
Figure I-2
October 2012

Existing Condition – View looking southwest from westbound Interstate 70 toward the location where the transmission line would leave the designated utility corridor window in the Fishlake National Forest

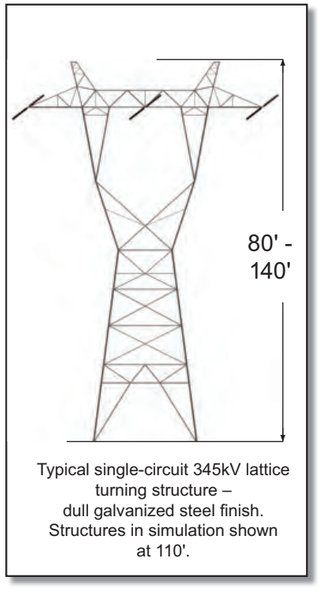


View Location: West of Fremont Indian State Park from Interstate 70. Approximate distance of transmission line from photo location is 0.3 mile.

Simulated Condition – View of alternative routes N1, N2, N2-A, N3, N4, N5, and N6 for the 345kV transmission line in the Fishlake National Forest



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



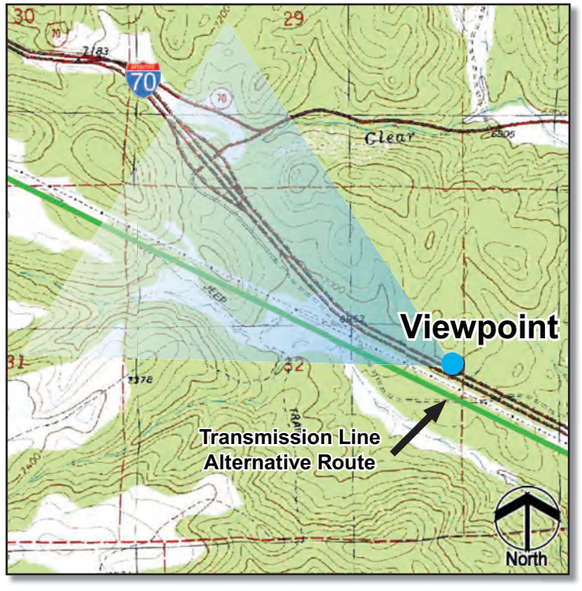
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-22-10 Time: 12:31 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

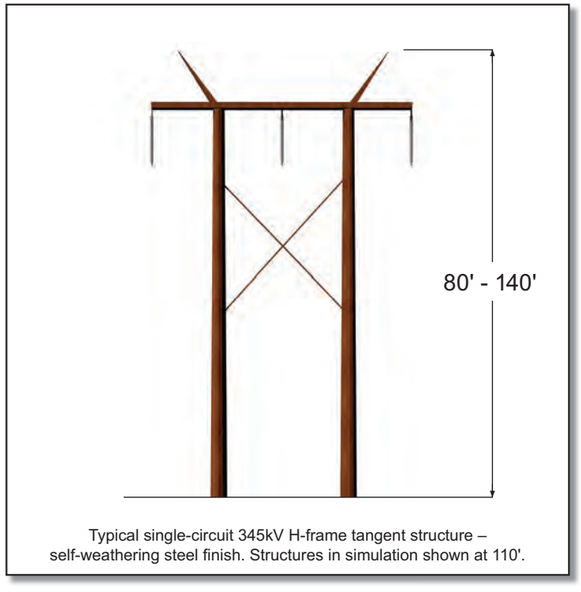
Figure I-3
October 2012

Existing Condition – View looking northwest from westbound Interstate 70



View Location: East of Clear Creek Canyon Road Exit on Interstate 70 looking northwest. Approximate distance of transmission line from photo location is 0.7 mile.

Simulated Condition – View of alternative routes N1, N2, N2-A, N3, N4, N5, and N6 for the 345kV transmission line in the Fishlake National Forest



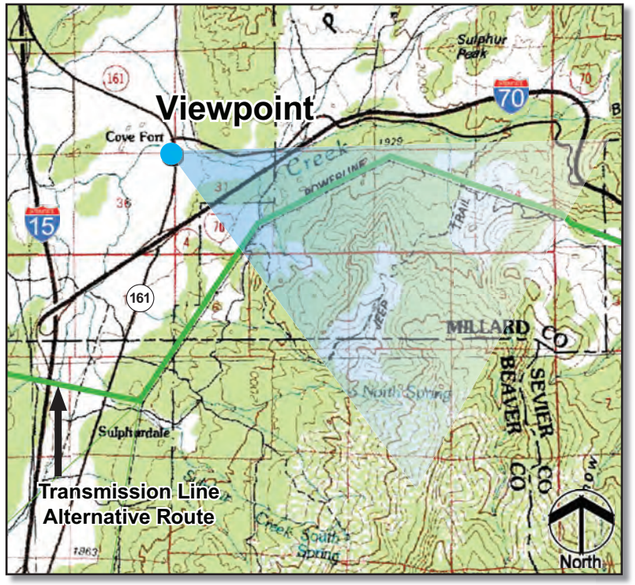
Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-22-10 Time: 12:57 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

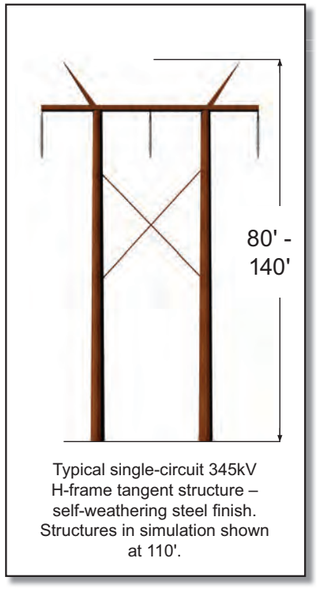
Figure I-4
October 2012

Existing Condition – View looking southeast from State Route 161 just south of Cove Fort Historic Site

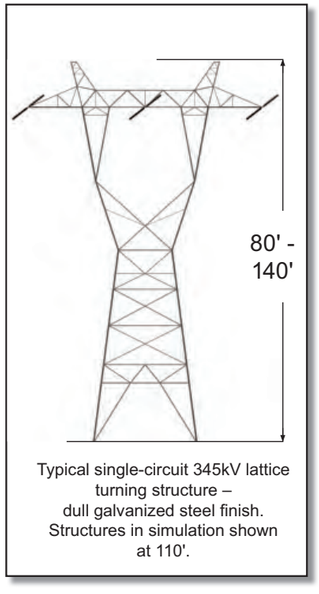


View Location: Cove Fort Historic Site looking southeast towards the Tushar Mountains. Approximate distance of transmission line from photo location is 1.0 mile.

Simulated Condition – View of alternative routes N1, N2, N2-A, N3, N4, N5, and N6 for the 345kV transmission line in the Fishlake National Forest



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



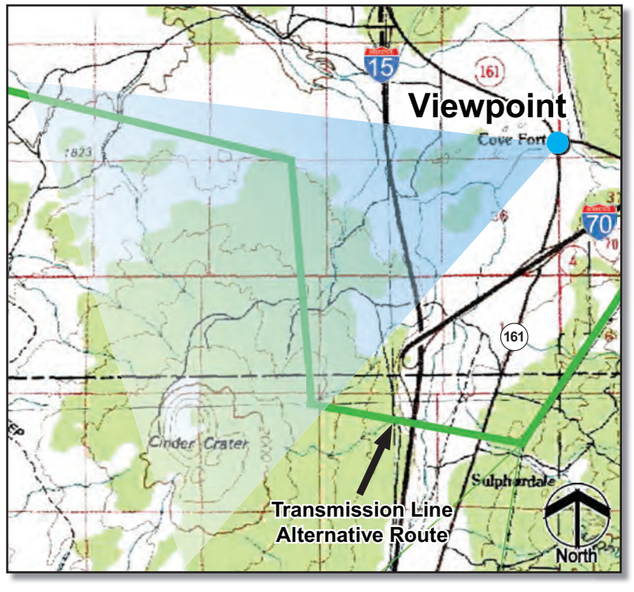
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-22-10 Time: 2:34 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

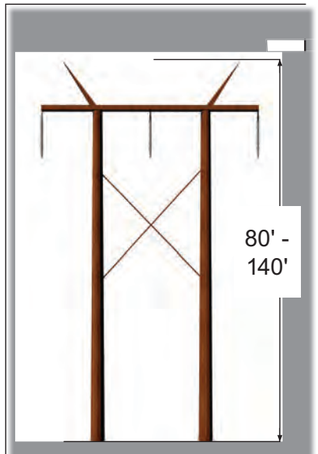
Figure I-5
October 2012

Existing Condition – View looking southwest from Cove Fort Historic Site

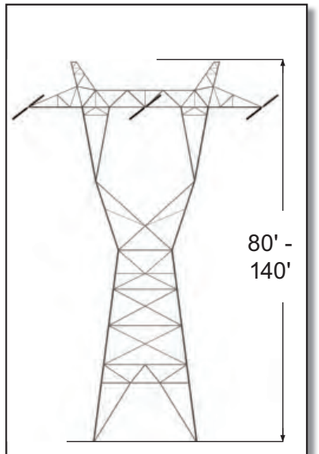


View Location: Cove Fort Historic Site looking southwest towards ancient cinder cone. Approximate distance of transmission line from photo location is 2.5 miles.

Simulated Condition – View of alternative routes N1, N2, N2-A, and N3 for the 345kV transmission line



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



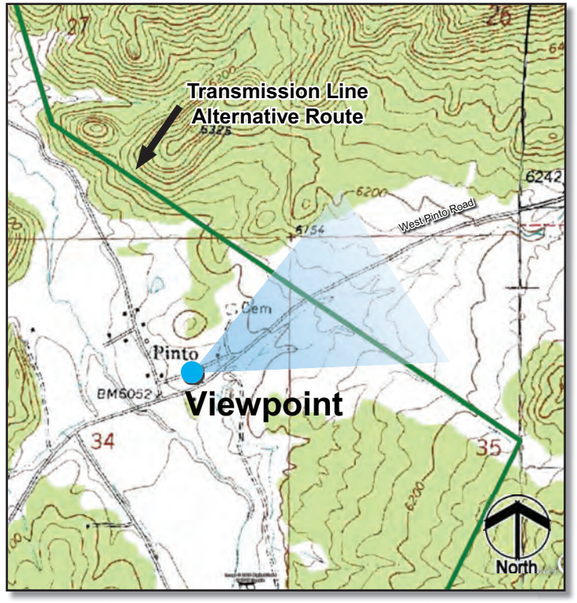
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-22-10 Time: 3:59 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

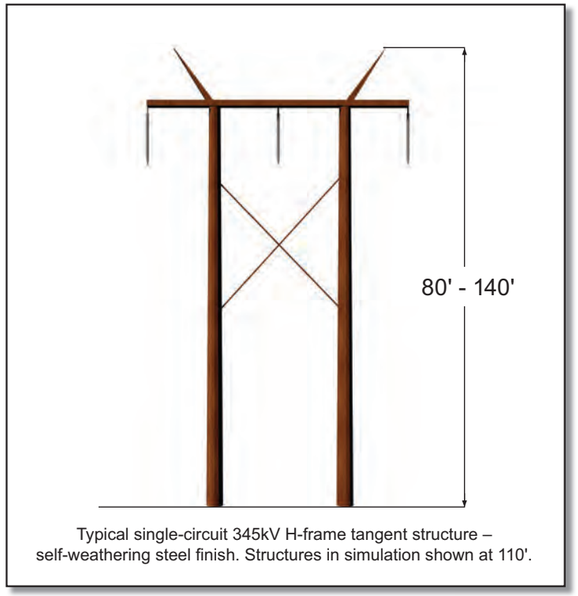
Figure I-6
October 2012

Existing Condition – View looking northeast from the community of Pinto along West Pinto Road



View Location: Pinto Community looking northeast along West Pinto Road. Approximate distance of transmission line from photo location is 0.3 mile.

Simulated Condition – View of alternative routes S1 and S5 for the 345kV transmission line crossing West Pinto Road



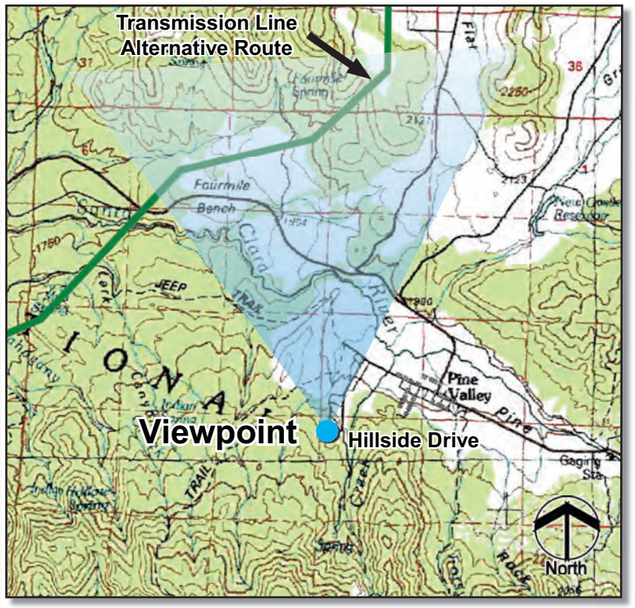
Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

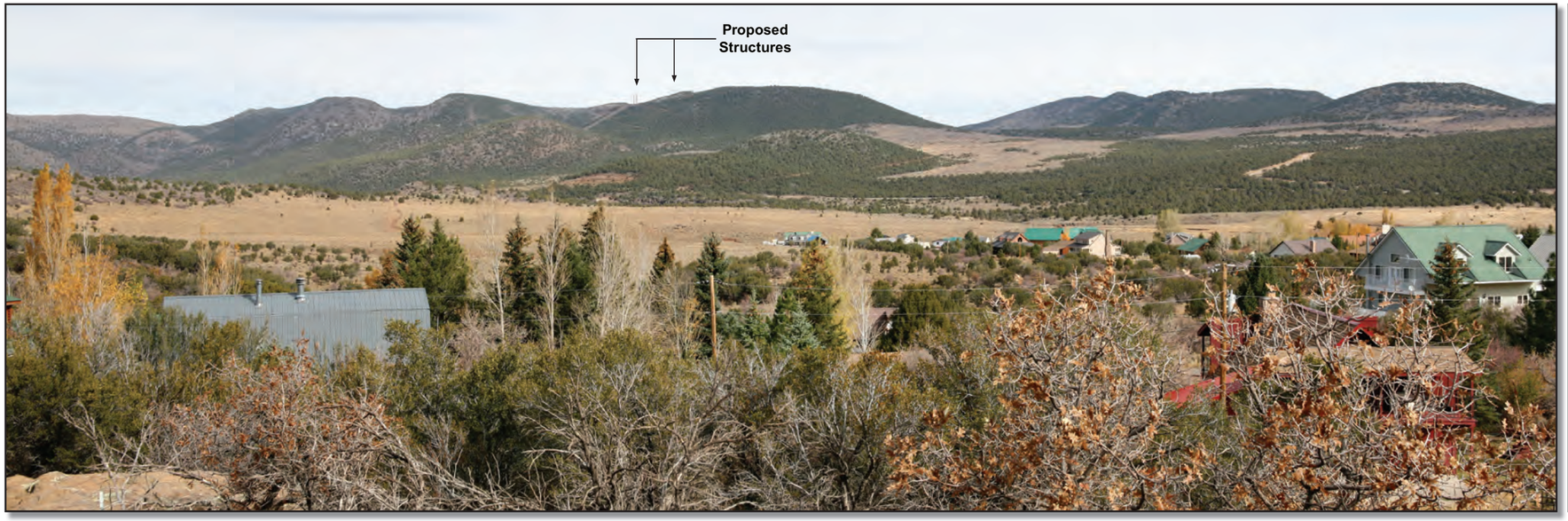
Photo Date: 10-23-09 Time: 9:16 a.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

Figure I-7
October 2012

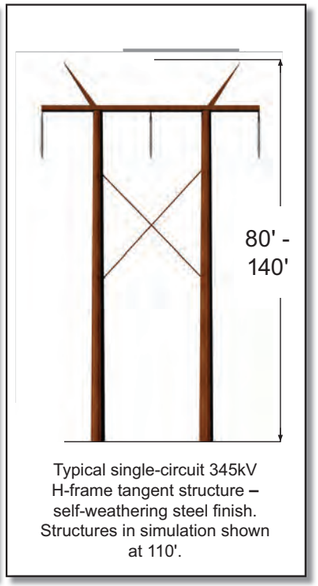
Existing Condition – View looking north from Hillside Drive in Pine Valley community toward the Dixie National Forest



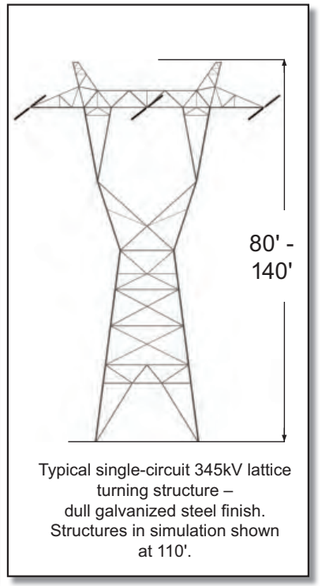
View Location: Pine Valley residential area looking north toward the Dixie National Forest. Approximate distance of transmission line from photo location is 2.7 miles.



Simulated Condition – View of alternative routes S1 and S5 for the 345kV transmission line in the Dixie National Forest



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



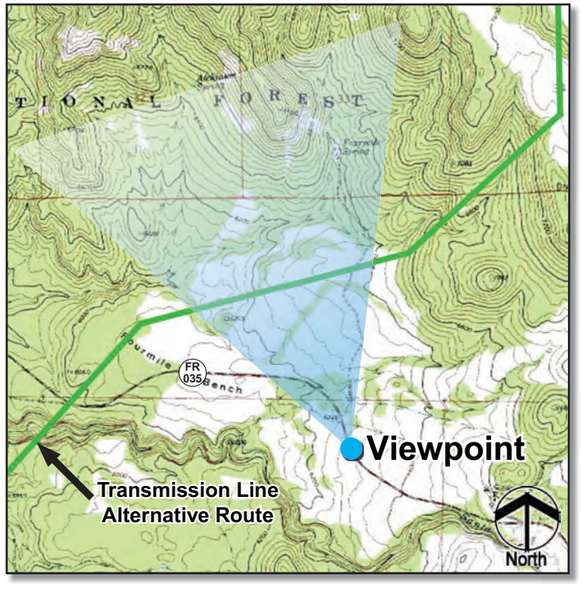
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 10-23-09 Time: 11:19 a.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

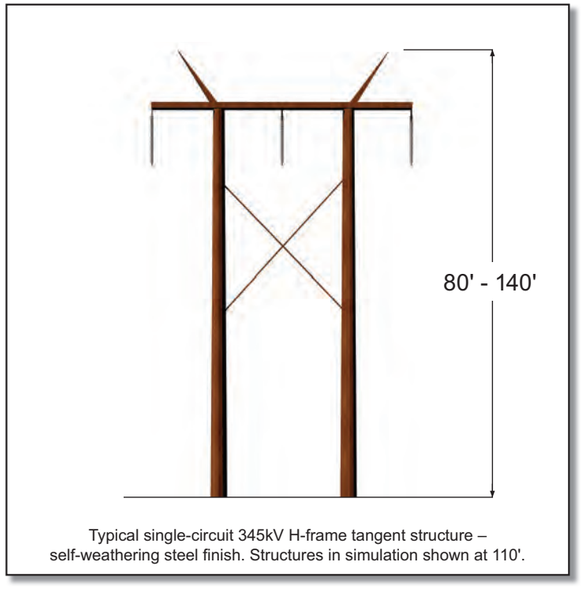
Figure I-8
October 2012

Existing Condition – View looking north-northwest from westbound Forest Road 035



View Location: Looking north-northwest from Forest Road 035 west of Pine Valley toward Atchinson Mountain. Approximate distance of transmission line from photo location is 0.8 mile.

Simulated Condition – View of alternative routes S1 and S5 for the 345kV transmission line in the Dixie National Forest

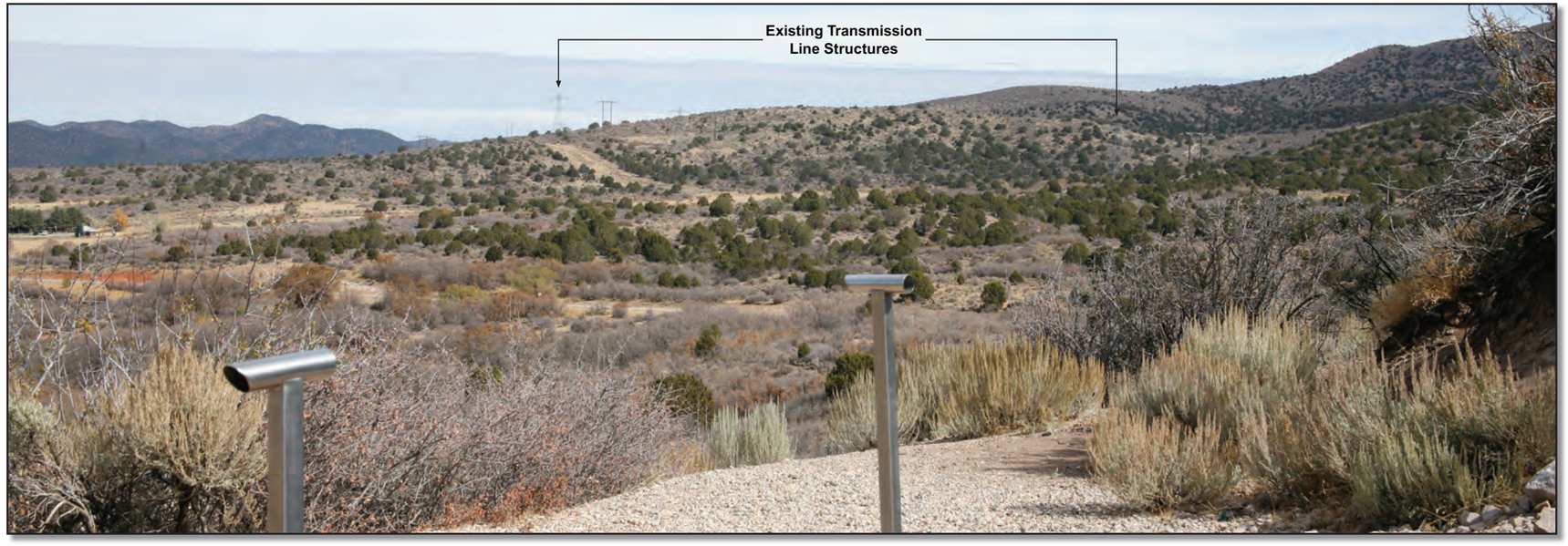


Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

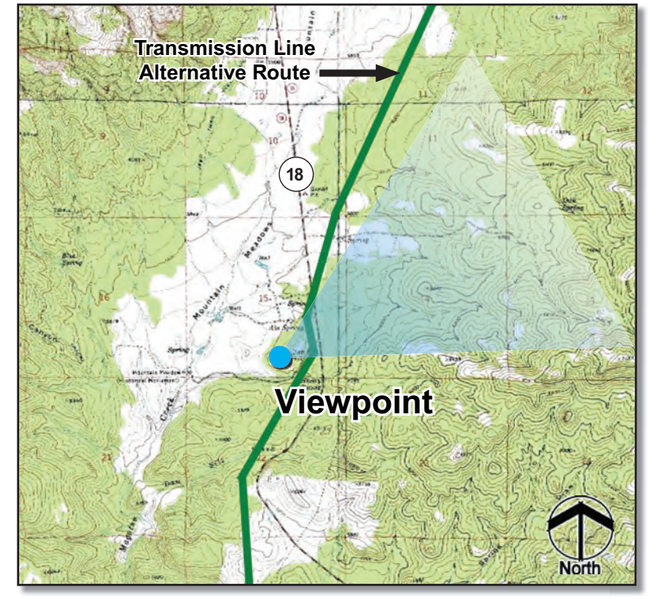
Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-23-10 Time: 11:44 a.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

Figure I-9
October 2012

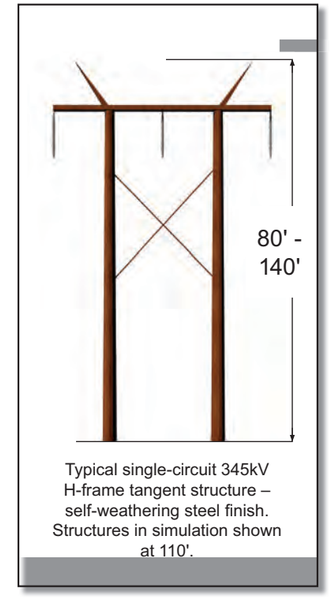


Existing Condition – View looking northeast from the overlook and memorial for the Mountain Meadows Massacre Site NHL, toward the existing Intermountain Power Project transmission line and State Route 18

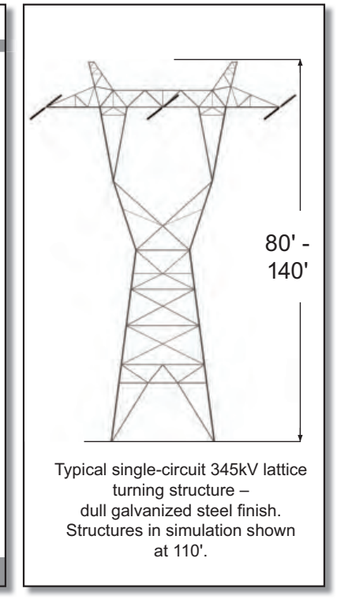


View Location: Mountain Meadows Massacre Site NHL overlook and memorial looking northeast. Approximate distance of transmission line from photo location is 0.3 mile.

Simulated Condition – View of alternative routes S2 for the 345kV transmission line west of the existing Intermountain Power Project transmission line



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



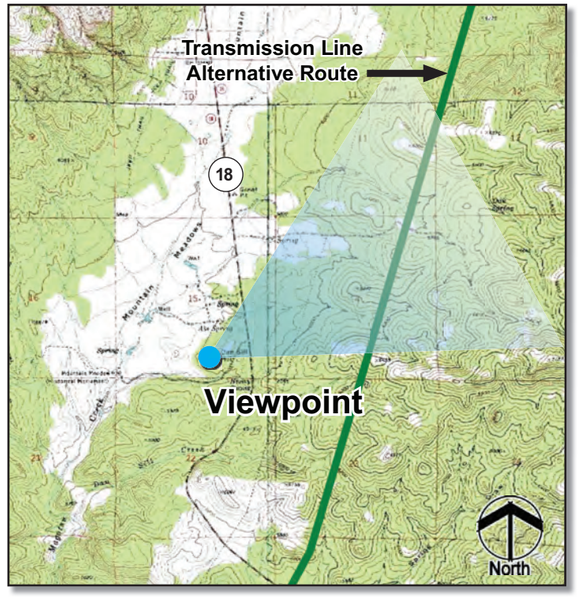
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 10-23-09 Time: 12:45 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

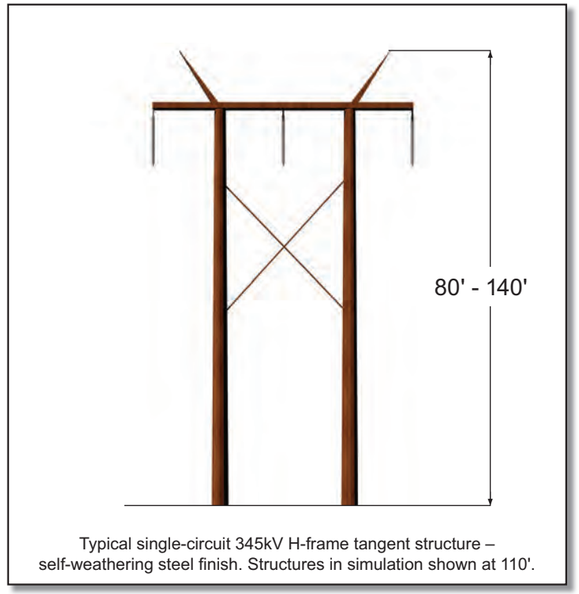
Figure I-10
October 2012

Existing Condition – View looking northeast from the overlook and memorial for the Mountain Meadows Massacre Site NHL, toward the existing Intermountain Power Project transmission line and State Route 18



View Location: Mountain Meadows Massacre Site NHL overlook and memorial looking northeast. Approximate distance of transmission line from photo location is 1.4 miles.

Simulated Condition – View of alternative routes S4 and S7 for the 345kV transmission line east of the existing Intermountain Power Project transmission line



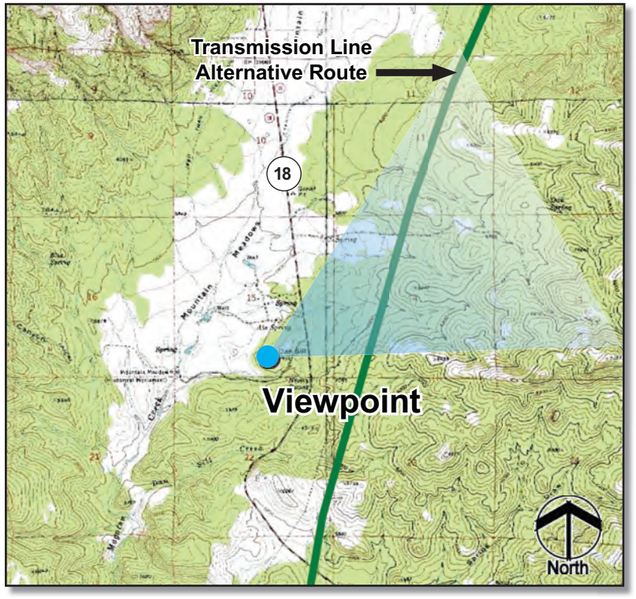
Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 10-23-09 Time: 12:45 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

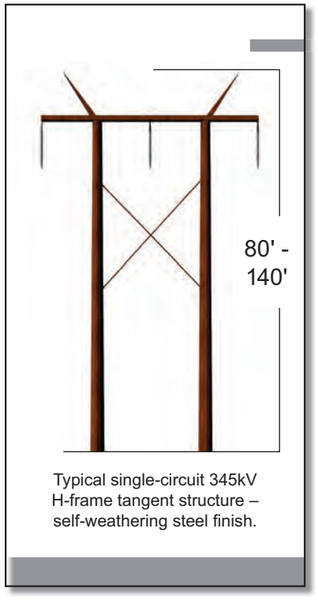
Figure I-11
October 2012

Existing Condition – View looking northeast from the overlook and memorial for the Mountain Meadows Massacre Site NHL, toward the existing Intermountain Power Project transmission line and State Route 18

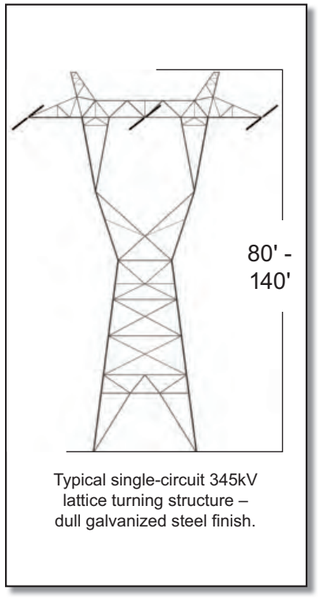


View Location: Mountain Meadows Massacre Site NHL overlook and memorial looking northeast. Approximate distance of transmission line from photo location is 0.9 mile.

Simulated Condition – View of alternative route S7-A for the 345kV transmission line east of the existing Intermountain Power Project transmission line



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish.



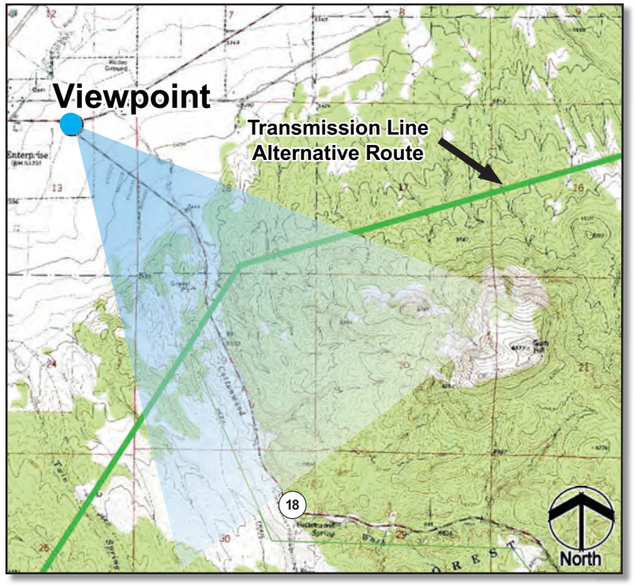
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 10-23-09 Time: 12:45 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

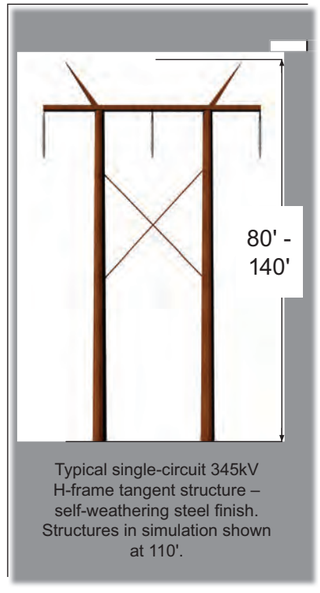
Figure I-12
October 2012

Existing Condition – View looking southeast from State Route 18 adjacent to Heritage Park in Enterprise, Utah

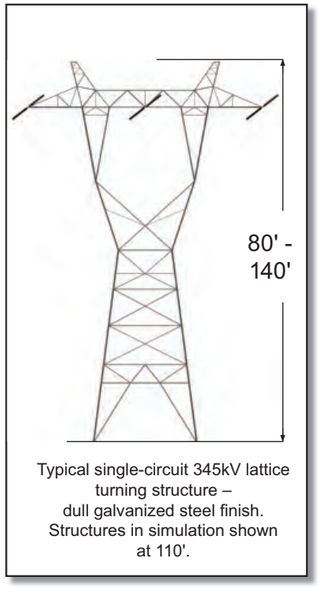


View Location: State Route 18 in Enterprise, Utah looking southeast. Approximate distance of transmission line from photo location is 1.25 miles.

Simulated Condition – View of alternative routes S3 and S6 for the 345kV transmission line in the Dixie National Forest



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.

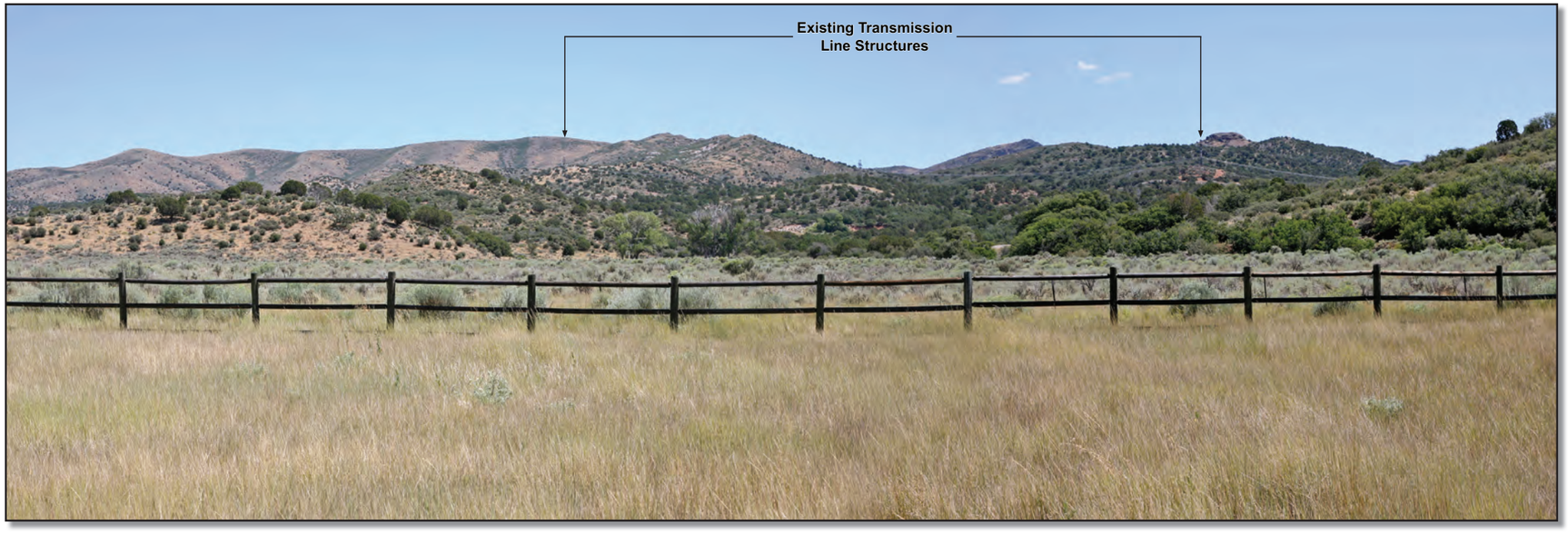


Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

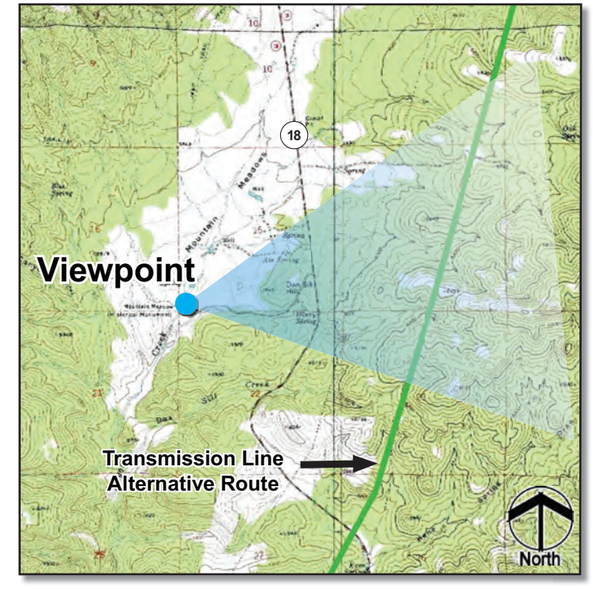
Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 7-23-10 Time: 12:20 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

Figure I-13
October 2012

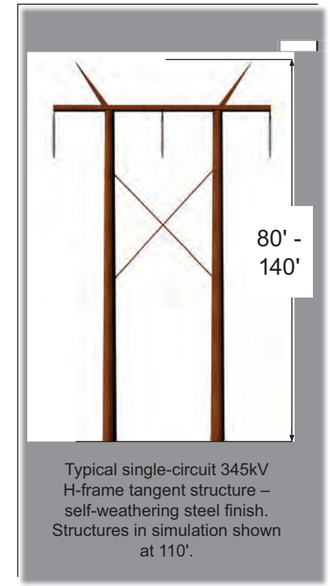


Existing Condition – View looking east from the Mountain Meadows Massacre Site NHL

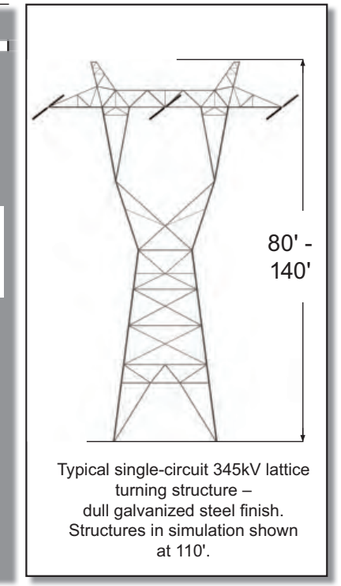


View Location: Mountain Meadows Massacre Site NHL looking east toward State Route 18. Approximate distance of transmission line from photo location is 1.5 miles.

Simulated Condition – View of alternative routes S4 and S7 for the 345kV transmission line



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



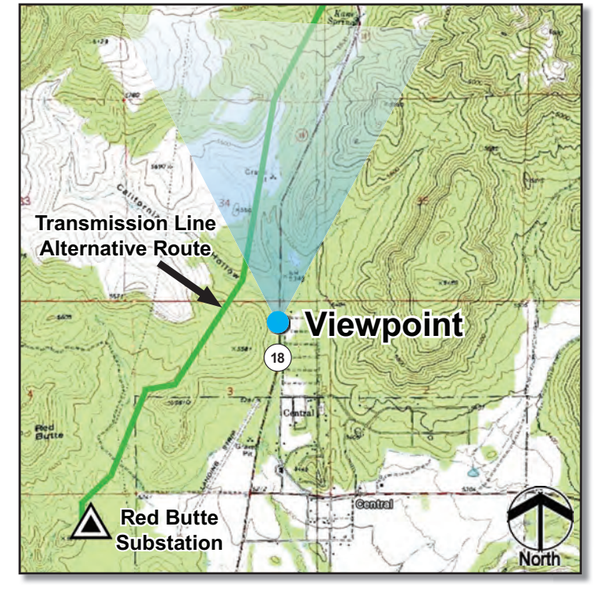
Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 8-17-11 Time: 12:29 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

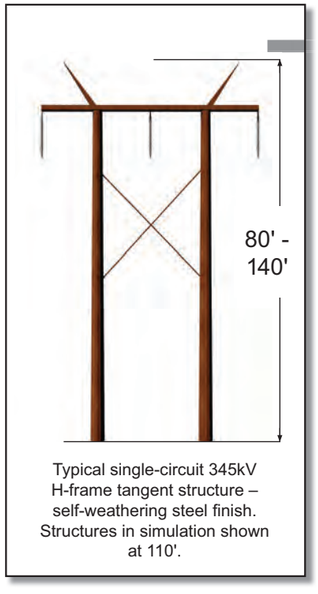
Figure I-14
October 2012

Existing Condition – View looking north from northbound State Route 18 adjacent to the community of Central, Utah

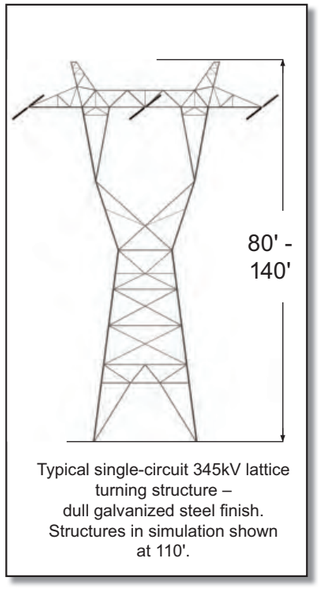


View Location: Adjacent to Central, Utah, on State Route 18 looking north. Approximate distance of transmission line from photo location is 0.4 mile.

Simulated Condition – View of alternative routes S2, S4, S7, and S7-A for the 345kV transmission line



Typical single-circuit 345kV H-frame tangent structure – self-weathering steel finish. Structures in simulation shown at 110'.



Typical single-circuit 345kV lattice turning structure – dull galvanized steel finish. Structures in simulation shown at 110'.

Sigurd to Red Butte No. 2 - 345kV Transmission Project Final EIS

Photo Date: 8-17-11 Time: 12:15 p.m.
Structure models that were used in the simulations were created using diagrams provided by Rocky Mountain Power. This simulation represents a schematic concept design that will be refined and finalized. Actual final structure sizes, heights, materials, conductor sag, vegetation clearing, and access roads will vary on a case-by-case basis.

Figure I-15
October 2012

Visual Contrast Rating Worksheets

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
District: Color District
Resource Area: BLM – Richfield Field Office
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 1 – Richfield	Township 23S	
VRM Class: III	Range 3W	
	Section 26	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Steep (background)	Scattered (foreground) Scattered (background)	Short, vertical
Line	Horizontal (foreground) Undulating (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Red, tan (foreground) Red, tan (background)	Browns, tans, greens (foreground) Greens (background)	Brown
Texture	Fine (foreground) Moderate (background)	Fine to coarse (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Horizontal (foreground) Undulating (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Red, tan (foreground) Red, tan (background)	Browns, tans, greens (foreground) Greens and tans (background)	Brown
Texture	Fine (foreground) Moderate (background)	Fine to coarse (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X			X		
	Line			X				X				X	
	Color			X			X					X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Sensitive resource avoidance
Minimize ground disturbance

Evaluators Names:
Marc Schwartz, Kevin Rauhe

Date: July 6, 2010
District: Color District
Resource Area: BLM – Richfield Field Office
Activity (program): Electric Utility Facilities

Northwest View from the west side of Richfield

Weak/moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as VRM Class III. The proposed structures would introduce a stronger vertical element in the landscape as compared to the existing transmission line. The construction of the Project also would result in minimal vegetation clearing and landform modification based on the use of existing access and sparse vegetation. Due to the occurrence of moderate topography, portions of the proposed Project will be backdropped.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Fishlake National Forest
Ranger District: Beaver Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 2 – Fremont Indian State Park	Township 26S Range 4W	
SIO Level: Moderate	Section 34	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling to flat (foreground) Rugged (background)	Dense, regular (foreground) Dense, irregular (background)	Short, vertical
Line	Undulating (foreground) Bold (background)	Horizontal (foreground) Horizontal (background)	Geometric, vertical
Color	Tans (foreground) Tans and white (background)	Tans (foreground) Tans and greens (background)	Brown
Texture	Fine (foreground) Moderate (background)	Fine (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling to flat (foreground) Rugged (background)	Dense, regular (foreground) Geometric, irregular (background)	Tall, vertical
Line	Undulating (fogeground) Straight to bold (background)	Horizontal (foreground) Horizontal (background)	Geometric, vertical
Color	Tans (foreground) Tans and white (background)	Tans (foreground) Tans and greens (background)	Brown
Texture	Fine (foreground) Fine to moderate (background)	Fine (foreground) Fine and moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		X			X					X		
	Line	X					X					X	
	Color		X				X					X	
	Texture		X			X						X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: July 6, 2010
Forest: Fishlake National Forest
Ranger District: Beaver Ranger District
Activity (program): Electric Utility Facilities

South View from trail north of the Fremont Indian State Park Visitor Center and Museum

Moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a moderate SIO (Scenic Integrity Objective). The proposed structures would introduce a stronger vertical element in the landscape as compared to the existing transmission line. Furthermore, the construction of the Project would require vegetation clearing and access roads on steep terrain thus increasing line and color contrasts. Through selective clearing of vegetation and constructing access roads parallel to the contours, landscape contrast would be reduced. The majority of the Project will be backdropped due to the steep terrain, which also would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: September 2, 2010
Forest: Fishlake National Forest
Ranger District: Fillmore Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 3 – Exiting Utility Corridor in Fishlake National Forest	Township 26S Range 4 ½W	
SIO Level: Moderate	Section 9	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling to steep (foreground) Rugged (background)	Rounded, scattered(foreground) Rounded, dense (background)	Short, vertical
Line	Undulating (foreground) Bold (background)	Irregular (foreground) Regular (background)	Geometric, vertical
Color	Tans, whites, reds (foreground) Tans (background)	Tans and greens (foreground) Greens (background)	Brown
Texture	Moderate (foreground) Rough (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling to steep (foreground) Rugged (background)	Rounded, scattered(foreground) Rounded, dense (background)	Tall, vertical
Line	Undulating to straight (foreground) Bold (background)	Regular (foreground) Regular (background)	Geometric, vertical
Color	Tans, whites, reds(foreground) Tans (background)	Tans and greens (foreground) Greens (background)	Grey, brown
Texture	Moderate (foreground) Rough (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X			X		
	Line		X				X					X	
	Color			X				X				X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: September 2, 2010
Forest: Fishlake National Forest
Ranger District: Fillmore Ranger District
Activity (program): Electric Utility Facilities

Southwest View from Interstate 70

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a moderate SIO (Scenic Integrity Objective). The proposed structures would introduce a stronger vertical element in the landscape as compared to the existing transmission line. The construction of the Project also would result in moderate vegetation clearing and minor landform modification based on construction of access roads on moderately steep topography. Through selective clearing of vegetation and constructing access roads parallel to the contours, landscape contrast would be reduced. The mountains in the background would backdrop portions of the Project, which also would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Fishlake National Forest
Ranger District: Beaver Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 4 – I-70	Township 25S	
SIO Level: Moderate	Range 5W	
	Section 33	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling	Rounded, narrow	Short, vertical
Line	Undulating, diagonal	Regular, straight	Geometric, vertical
Color	Tan, brown	Tans, greens	Brown
Texture	Moderate	Moderate	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling	Rounded, wide	Tall, vertical
Line	Undulating, diagonal	Regular, straight	Geometric, vertical
Color	Tan, brown	Tans, greens	Brown
Texture	Moderate	Moderate	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X			X				X		
	Line			X				X				X	
	Color			X				X				X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize Ground Disturbance
Minimize Tree Clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: July 6, 2010
Forest: Fishlake National Forest
Ranger District: Beaver Ranger District
Activity (program): Electric Utility Facilities

Northwest View from I-15 south of Beaver

Weak/moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a moderate SIO (Scenic Integrity Objective). The proposed structures would introduce a stronger vertical element in the landscape as compared to the existing transmission line. The construction of the Project also would result in minimal vegetation clearing and landform modification based on the use of existing access and paralleling an existing utility corridor. Due to the occurrence of moderate topography, portions of the proposed Project would be backdropped. Contrast would therefore be reduced in such locations.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
District: Color Country
Resource Area: BLM – Cedar City Field Office
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 5 – Cove Fort	Township 25S	
VRM Class: IV	Range 7W	
	Section 25	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling (background)	Low, uniform (foreground) Smooth, regular (background)	N/A
Line	Horizontal (foreground) Undulating (background)	Horizontal (foreground) Rounded (background)	N/A
Color	Tans (foreground) Tans (background)	Tans and greens (foreground) Greens and tans (background)	N/A
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling (background)	Low, uniform (foreground) Smooth, regular (background)	Tall, vertical
Line	Horizontal (foreground) Straight, undulating (background)	Horizontal (foreground) Straight to rounded (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Tans and greens (foreground) Tans and greens (background)	Brown
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Fine to moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X			X		
	Line		X				X				X		
	Color			X			X					X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Sensitive resource avoidance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

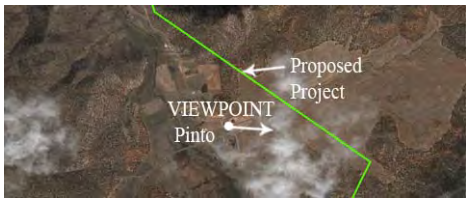
Date: July 6, 2010
District: Color Country
Resource Area: BLM – Cedar City Field Office
Activity (program): Electric Utility Facilities

Southwest View from Cove Fort

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as VRM Class IV. The proposed structures would introduce a new vertical element in the landscape but since the Project is located over 2 miles from this viewpoint, structure contrast would be weak/moderate. The construction of the Project also would result in moderate vegetation clearing and limited landform modification based on the use of existing access on gently sloping topography. Through selective clearing and overland construction techniques where possible, project contrast would be reduced. The foothills in the background would backdrop the Project, which also would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 6 – Pinto	Township 37S	
SIO Level: High	Range 15W	
	Section 34	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling to steep (background)	Low, uniform (foreground) Rounded to indistinct (background)	N/A
Line	Horizontal (foreground) Diagonal, undulating (background)	Horizontal (foreground) Regular (background)	N/A
Color	Tans (foreground) Tans (background)	Tans and greens (foreground) Greens (background)	N/A
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling to steep (background)	Low, uniform (foreground) Rounded to indistinct (background)	Tall, vertical
Line	Horizontal (foreground) Diagonal, undulating (background)	Horizontal (foreground) Regular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Tans and greens (foreground) Greens (background)	Brown
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X		X			
	Line			X				X		X			
	Color			X				X			X		
	Texture			X				X			X		

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Northeast View from the east side of Pinto

Moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a moderate SIO (Scenic Integrity Objective). The proposed structures would introduce a new vertical element in the landscape. However, the construction of the Project would result in minimal vegetation clearing and landform modification based on the use of existing access and sparse vegetation. Due to the occurrence of moderate topography, portions of the proposed Project would be backdropped from this viewpoint, which would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 7 – Pine Valley	Township 39S	
SIO Level: High	Range 15W	
	Section 15	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling to flat (foreground) Rugged (background)	Dense, regular (foreground) Dense, irregular (background)	N/A
Line	Undulating (foreground) Bold (background)	Vertical to horizontal (foreground) Rounded (background)	N/A
Color	Tans (foreground) Tans and greys (background)	Tans (foreground) Tans and greens (background)	N/A
Texture	Fine (foreground) Moderate (background)	Fine (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling to flat (foreground) Rugged (background)	Dense, regular (foreground) Geometric, irregular (background)	Tall vertical
Line	Undulating (foreground) Straight to bold (background)	Vertical to horizontal (foreground) Straight to rounded (background)	Geometric, vertical
Color	Tans (foreground) Tans and greys (background)	Tans (foreground) Tans and greens (background)	Brown
Texture	Fine (foreground) Fine to moderate (background)	Fine (foreground) Fine to moderate (background)	Fine, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X			X		
	Line		X				X				X		
	Color		X				X					X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

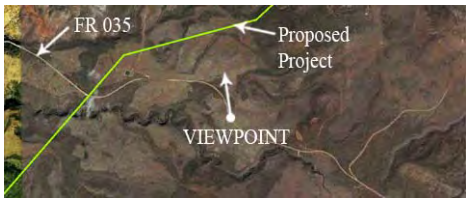
Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

North View from a residential area in Pine Valley

Moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a high SIO (Scenic Integrity Objective). The proposed transmission line structures would introduce a new vertical element in the landscape. Also, the construction of the Project would require vegetation clearing and access roads to be built on steep terrain. However, since the Project is located over 2 miles away from this viewpoint, structure contrast would be reduced. Through mitigation measures including selective clearing of vegetation and constructing access roads parallel to the contours, landscape contrast also would be reduced. The majority of the Project would be backdropped due to the steep terrain, which would further reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: September 2, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 8 – Forest Road 035 (FR 035)	Township 39S	
SIO Level: High	Range 15W	
	Section 9	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Rugged (background)	Rounded, scattered(foreground) Rounded, dense (background)	N/A
Line	Undulating (foreground) Bold (background)	Regular (foreground) Irregular (background)	N/A
Color	Tans (foreground) Tans and white (background)	Tans and greens (foreground) Tans and greens (background)	N/A
Texture	Moderate (foreground) Rough (background)	Moderate (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Rugged (background)	Rounded, scattered(foreground) Rounded, dense (background)	Tall, vertical
Line	Undulating to straight (foreground) Bold (background)	Regular (foreground) Irregular(background)	Geometric, vertical
Color	Tans (foreground) Tans and white (background)	Tans and greens (foreground) Tans and greens (background)	Brown
Texture	Fine to moderate (foreground) Rough (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X		X			
	Line		X					X		X			
	Color			X				X			X		
	Texture		X				X				X		

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Sensitive resource avoidance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: September 2, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Northwest View from Forest Road 035

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a high SIO (Scenic Integrity Objective). The proposed structures would introduce a new vertical element into a primary natural landscape. The construction of the Project would also result in moderate vegetation clearing and minor landform modification based on the use of existing access. Through selective clearing and the use of overland construction techniques where possible, project contrast would be reduced. The mountains in the background would backdrop the Project, which also would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 9 – Mountain Meadows Massacre Site NHL (Alternative S2)	Township 38S Range 16W	
SIO Class: High	Section 15	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Undulating (foreground) Undulating, diagonal (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth (foreground) Moderate (background)	Moderate (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Straight to undulating (foreground) Undulating, diagonal (background)	Regular(foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Tans (foreground) Greens and tans (background)	Brown, grey
Texture	Smooth (foreground) Moderate (background)	Moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X				X	
	Line		X				X					X	
	Color			X			X				X		
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing
Match transmission line spans

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Northeast View from Mountain Meadows Massacre Site NHL Overlook

Moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as high SIO (Scenic Integrity Objective). The proposed structures, due to their proximity to the viewer, introduce a stronger vertical element in the landscape as compared to the existing transmission lines. The construction of the Project also would result in some vegetation clearing and construction of access roads. By using overland construction techniques and minimizing vegetation clearing, landscape contrast would be reduced. Since the majority of the Project would be backdropped by the foothills, this also would reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 10 – Mountain Meadows Massacre Site NHL (Alternative S4)	Township 38S Range 16W	
SIO Class: High	Section 15	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Undulating (foreground) Undulating, diagonal (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth (foreground) Moderate (background)	Moderate (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Straight to undulating (foreground) Undulating to straight (background)	Irregular(foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth (foreground) Moderate (background)	Moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X				X	
	Line			X				X				X	
	Color			X				X				X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing
Match transmission line spans

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

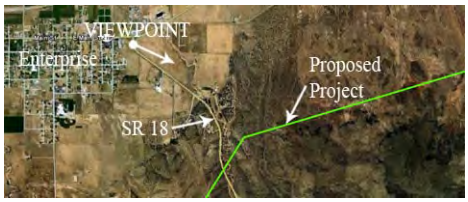
Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Northeast View from Mountain Meadows Massacre Site NHL Overlook

Weak contrast would result from the construction and operation of the proposed Project within a landscape setting designated as high SIO (Scenic Integrity Objective). Since the proposed structures would be further away from this viewpoint than the existing transmission lines, structure contrast also would be weak. The construction of the Project would result in some vegetation clearing and construction of access roads. By using overland construction techniques and minimizing vegetation clearing, landscape contrast would be reduced. Since the majority of the Project would be backdropped by the foothills, this would further reduce structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 11 – Enterprise and Utah State Route 18 (SR 18)	Township 37S	
SIO Level: High	Range 17W	
	Section 13	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling to rugged (background)	Dense, regular (foreground) Dense, irregular (background)	N/A
Line	Horizontal (foreground) Bold (background)	Horizontal (foreground) Rounded to horizontal (background)	N/A
Color	Tans (foreground) Tans and greens (background)	Tans (foreground) Tans and greens (background)	N/A
Texture	Fine (foreground) Rough (background)	Fine (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat (foreground) Rolling to rugged (background)	Dense, regular (foreground) Geometric, irregular (background)	Tall, vertical
Line	Horizontal (foreground) Straight to bold (background)	Horizontal (foreground) Straight and horizontal (background)	Geometric, vertical
Color	Tans (foreground) Tans and green (background)	Tans (foreground) Tans and greens (background)	Brown
Texture	Fine (foreground) Fine to rough (background)	Fine (foreground) Fine and moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X			X				X		
	Line		X				X				X		
	Color			X				X				X	
	Texture		X					X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

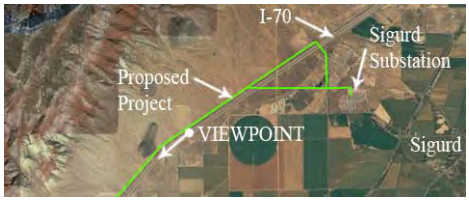
Date: July 6, 2010
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Southeast View from SR 18 at the southeast edge of Enterprise

Weak/moderate contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a high SIO (Scenic Integrity Objective). The proposed structures would introduce a new vertical element in the landscape. However, since the Project is located over one mile away from this viewpoint, structure contrast would be reduced. The construction of the Project would include vegetation clearing and landform modification based on the construction of new access roads on steep terrain. Through selective vegetation clearing and building access roads parallel with the contours, landscape contrast would be reduced. Due to the steep terrain in the middleground and background, portions of the Project would be backdropped, which would further reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
District: Color Country
Resource Area: BLM – Richfield Field Office
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 12 – I-70	Township 23S	
VRM Class: III	Range 2W	
	Section 4	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to rolling hills (foreground), Rolling hills to mountainous (middleground) Mountainous (background)	Dense, regular (foreground) Dense, regular (middleground)	Short, vertical
Line	Smooth, straight, horizontal (foreground) Undulating; curving (middleground) Undulating, diagonal (background)	Horizontal (foreground) Rounded (middleground)	Geometric, vertical
Color	Tan, beige (foreground) Brown, tan (middleground) Tan, grey, white (background)	Tan (foreground) Tan (middleground)	Brown
Texture	Fine (foreground) Fine, smooth – medium (middleground) Coarse texture (background)	Fine to moderate (foreground) Moderate (middleground)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Flat to rolling hills (foreground), Rolling hills to mountainous (middleground) Mountainous (background)	Dense, regular (foreground) Dense, regular (middleground)	Tall, vertical
Line	Smooth, straight, horizontal (foreground) Undulating to straight (middleground) Undulating, diagonal (background)	Horizontal (foreground) Rounded (middleground)	Geometric, vertical
Color	Tan, beige (foreground) Brown, tan (middleground) Tan, grey, white (background)	Tan (foreground) Tan (middleground)	Brown
Texture	Fine (foreground) Fine, smooth – medium (middleground) Coarse texture (background)	Fine to moderate (foreground) Moderate (middleground)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X			X		
	Line			X				X				X	
	Color			X				X				X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Minimize ground disturbance, sensitive resource avoidance

Evaluators Names:
Marc Schwartz, Kevin Rauhe

Date: July 6, 2010
District: Color Country
Resource Area: BLM – Richfield Field Office
Activity (program): Electric Utility Facilities

Southwest View from I-70

Weak to weak/moderate contrast would result from the construction and operation of the proposed Project within a modified setting designated as VRM Class III. The proposed structures would introduce a stronger vertical element in the landscape as compared to the existing transmission line. The construction of the Project would also result in minimal vegetation clearing and landform modification based on the use of existing access and sparse vegetation. Due to the occurrence of moderate topography, portions of the proposed Project will be backdropped.

VISUAL CONTRAST RATING WORKSHEET

Date: July 6, 2010
District: Color Country
Resource Area: BLM – St. George Field Office
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 13 – Baker Dam Reservoir Campground	Township 39S	
VRM Class: III	Range 16W Section 22	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Steep (background)	Rounded to indistinct (foreground) Rounded, dense (background)	Tall, vertical
Line	Undulating (foreground) Rugged (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Tan, red, blue (foreground) Tan, red (background)	Tan, green (foreground) Green (background)	Brown
Texture	Smooth (foreground) Moderate (background)	Coarse (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Steep (background)	Rounded to indistinct (foreground) Rounded, straight (background)	Tall, vertical
Line	Undulating (foreground) Rugged to straight(background)	Irregular (foreground) Straight to irregular (background)	Geometric, vertical
Color	Tan, red, blue (foreground) Tan, red (background)	Tan, green (foreground) Tan, green (background)	Brown
Texture	Smooth (foreground) Smooth to moderate (background)	Coarse (foreground) Fine to moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X			X					X	
	Line		X				X					X	
	Color			X			X					X	
	Texture		X				X					X	

Does project design meet visual resource management objectives?
Yes

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

Date: July 6, 2010
District: Color Country
Resource Area: BLM – St. George Field Office
Activity (program): Electric Utility Facilities

Northeast View from Baker Dam Reservoir Campground

Weak/moderate to moderate contrast would result from the construction and operation of the proposed Project within a natural landscape setting designated as VRM Class III. The proposed structures would introduce another vertical element in the landscape and the clearing of the pinyon-juniper vegetation would form straight lines along the edges of the right-of-way. Through selective tree removal and constructing access roads to run parallel with the contours, contrast would be reduced. The steeper terrain in the middleground and background would backdrop portions of the Project which would also reduce contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: September 21, 2011
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 14 – Mountain Meadows Massacre Site NHL (Alternative S4)	Township 38S Range 16W	
SIO Class: High	Section 15	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Undulating (foreground) Undulating, diagonal (background)	Irregular (foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Yellows, greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Moderate to steep (background)	Scattered (foreground) Scattered (background)	Tall, vertical
Line	Undulating (foreground) Undulating to straight (background)	Irregular(foreground) Irregular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Yellows, greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth (foreground) Moderate (background)	Fine to moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X				X	
	Line			X				X				X	
	Color			X				X				X	
	Texture			X				X				X	

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

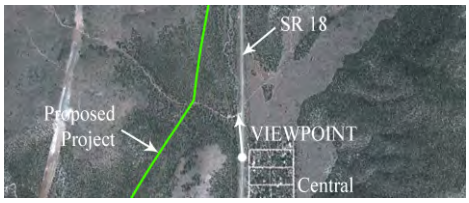
Date: September 21, 2011
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

East View from Mountain Meadows Massacre Site NHL

Weak contrast would result from the construction and operation of the proposed Project within a landscape setting designated as high SIO (Scenic Integrity Objective). Since the proposed structures would be further away from this viewpoint than the existing transmission lines (Project is located approximately 1.5 miles away), structure contrast also would be weak. The construction of the Project would result in some vegetation clearing and construction of access roads. By using overland construction techniques and minimizing vegetation clearing, landscape contrast would be reduced. Since the majority of the Project would be backdropped by the foothills, this would further reduce structure contrast.

VISUAL CONTRAST RATING WORKSHEET

Date: September 21, 2011
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

Project Name: Sigurd to Red Butte No. 2 345kV Transmission Project	**Location**	Location Sketch
Key Observation Point : 15 – Central along Utah State Route 18	Township 39S	
SIO Class: Moderate	Range 16W	
	Section 3	

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Horizontal to sloping (background)	Scattered to dense (foreground) Scattered (background)	N/A
Line	Undulating (foreground) Straight to angular(background)	Regular (foreground) Irregular (background)	N/A
Color	Tans (foreground) Tans (background)	Greens and tans (foreground) Greens and tans (background)	N/A
Texture	Smooth to moderate (foreground) Moderate (background)	Moderate (foreground) Moderate (background)	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rolling (foreground) Horizontal to sloping (background)	Scattered to dense (foreground) Scattered (background)	Tall, vertical
Line	Undulating (foreground) Straight to angular(background)	Regular (foreground) Regular (background)	Geometric, vertical
Color	Tans (foreground) Tans (background)	Greens and tans (foreground) Greens and tans (background)	Grey, brown
Texture	Smooth to moderate (foreground) Smooth to moderate (background)	Moderate (foreground) Moderate (background)	Moderate, uniform

Degree of Contrast

Degree of Contrast		Features											
		Landform/ Water Body				Vegetation				Structures			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form			X				X		X			
	Line			X			X			X			
	Color			X				X			X		
	Texture		X					X			X		

Does project design meet visual resource management objectives?
N/A[1]

Additional mitigating measures recommended?
Minimize ground disturbance
Minimize tree clearing

Evaluators Names:
Marc Schwartz, Kevin Rauhe

[1]Compliance with USFS SIOs was determined based on effects to scenic integrity (see page H-23)

Date: September 21, 2011
Forest: Dixie National Forest
Ranger District: Pine Valley Ranger District
Activity (program): Electric Utility Facilities

North View from SR 18 adjacent to Central

Moderate to moderate/strong contrast would result from the construction and operation of the proposed Project within a landscape setting designated as a moderate SIO (Scenic Integrity Objective). The proposed structures would introduce strong vertical elements in the landscape. From this position, the existing transmission lines are not visible due to topographic screening. The screening is intermittent, so portions of SR 18 and the community of Central would see the Project in context with the existing transmission lines. Some of the structures would be backdropped by topography but in other locations, the towers would be skylined. The Project also would include vegetation clearing in the right-of-way and the construction of access roads. Mitigation proposed for this area includes site specific planning of access roads, to reduce the visible extent of ground disturbance, and limiting vegetation clearing in the right-of-way. Through the application of these mitigation measures, contrast from the construction of the Project would be reduced.

Appendix J – Grazing Allotment Supporting Data

APPENDIX J – GRAZING ALLOTMENT SUPPORTING DATA

Information presented in this appendix was compiled to assist in completion of land use and recreation resource inventories and impacts analysis included in Chapter 3 for grazing allotments. Table J-1 identifies the grazing allotments crossed by alternative and Table J-2 identifies grazing allotments crossed by link. Table J-2 references the Existing Land Use Maps (Map Volume [MV]-14) to give the reader an indication of the distance a grazing allotment is crossed and its general location.

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
Northern - Sigurd Substation to South of the Black Mountains							
N1	Aurora	BLM – Richfield Field Office (RFO)	15,639.9	2.2	20.0	6.4	0.0
	Pine Creek/ Indian Creek	BLM – Cedar City Field Office (CCFO)	5,749.7	0.9	8.2	2.6	0.0
	Mineral Range	BLM – CCFO	147,846.5	1.6	14.6	4.6	0.0
	East Antelope Point	BLM – Fillmore Field Office (FFO)	19,168.9	9.5	86.5	27.6	0.0
	Twin Peaks	BLM – FFO	253,227.3	5.3	48.2	15.4	0.0
	Black Rock Summer	BLM – FFO	24,115.0	7.1	64.6	20.6	0.0
	Beaver Lake	BLM – CCFO	71,901.1	3.6	32.8	10.4	0.0
	Smithson	BLM – CCFO	29,461.2	11.0	100.1	31.9	0.0
	Frisco	BLM – CCFO	65,227.5	4.6	41.9	13.3	0.0
	Milford Cattle	BLM – CCFO	10,722.2	6.5	59.2	18.9	0.0
	Cook	BLM – CCFO	52,120.0	8.7	79.2	25.2	0.0
	Minersville No. 6	BLM – CFFO	20,489.6	5.8	52.8	16.8	0.0
	NADA	BLM – CCFO	42,286.4	6.6	60.1	19.1	0.0
	Desert	BLM – CCFO	75,860.0	4.5	41.0	13.1	0.0
	BLM Total		**833,815.3**	**77.9**	**708.9**	**225.9**	**0.0**
	Poulsen	USFS	652.9	1.1	10.0	3.2	0.1
	Flat Canyon	USFS	15,673.1	4.6	41.9	13.3	0.0
	Joseph	USFS	5,487.1	7.1	64.6	20.6	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.8	0.6	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	49.1	15.7	0.0
	Clear Creek	USFS	16,022.9	8.4	76.4	24.4	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.7	0.9	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	42.8	13.6	0.0
	USFS Total		**166,080.4**	**31.8**	**289.4**	**92.2**	**0.0**
	Grand Total		**999,895.7**	**109.7**	**998.3**	**318.1**	**0.0**

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
N2	Aurora	BLM – RFO	15,639.9	2.2	20.2	6.4	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	0.9	8.3	2.6	0.0
	Mineral Range	BLM – CCFO	147,846.5	2.1	19.3	6.1	0.0
	East Antelope Point	BLM – FFO	19,168.9	9.5	87.4	27.6	0.0
	Twin Peaks	BLM – FFO	253,227.3	4.8	44.2	13.9	0.0
	Black Rock Summer	BLM – FFO	24,115.0	0.3	2.8	0.9	0.0
	Smithson	BLM – CCFO	29,461.2	4.3	39.6	12.5	0.0
	Frisco	BLM – CCFO	65,227.5	4.6	42.3	13.3	0.0
	Milford Cattle	BLM – CCFO	10,722.2	6.5	59.8	18.9	0.0
	Cook	BLM – CCFO	52,120.0	8.7	80.0	25.2	0.0
	Minersville No. 6	BLM – CCFO	20,489.6	5.8	53.4	16.8	0.0
	NADA	BLM – CCFO	42,286.4	6.6	60.7	19.1	0.0
	Desert	BLM – CCFO	75,860.0	4.5	41.4	13.1	0.0
	Antelope Point	BLM – FFO	3,371.9	2.6	23.9	7.5	0.0
	Hanson	BLM – CCFO	37,207.5	12.0	110.4	34.8	0.0
	BLM Total		**802,493.6**	**75.4**	**693.7**	**218.7**	**0.0**
	Poulsen	USFS	652.9	1.1	10.1	3.2	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.3	13.3	0.0
	Joseph	USFS	5,487.1	7.1	65.3	20.6	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.8	0.6	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	49.7	15.7	0.0
	Clear Creek	USFS	16,022.9	8.4	77.3	24.4	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	0.9	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.2	13.6	0.0
	USFS Total		**166,080.4**	**31.8**	**292.6**	**92.2**	**0.0**
	Grand Total		**968,574.0**	**107.2**	**986.2**	**310.9**	**0.0**
N2-A	Aurora	BLM – RFO	15,639.9	2.2	20.2	6.4	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	0.9	8.3	2.6	0.0
	Mineral Range	BLM – CCFO	147,846.5	3.0	27.6	8.7	0.0
	East Antelope Point	BLM – FFO	19,168.9	9.5	87.4	27.6	0.0
	Twin Peaks	BLM – FFO	253,227.3	4.8	44.2	13.9	0.0
	Black Rock Summer	BLM – FFO	24,115.0	0.3	2.8	0.9	0.0
	Smithson	BLM – CCFO	29,461.2	4.3	39.6	12.5	0.0
	Frisco	BLM – CCFO	65,227.5	4.6	42.3	13.3	0.0
	Milford Cattle	BLM – CCFO	10,722.2	6.5	59.8	18.9	0.0
	Cook	BLM – CCFO	52,120.0	8.7	80.0	25.2	0.0
	Minersville No. 6	BLM – CCFO	20,489.6	5.8	53.4	16.8	0.0
	NADA	BLM – CCFO	42,286.4	6.6	60.7	19.1	0.0
	Desert	BLM – CCFO	75,860.0	4.5	41.4	13.1	0.0
	Antelope Point	BLM – FFO	3,371.9	2.6	23.9	7.5	0.0
	Hanson	BLM – CCFO	37,207.5	11.3	104.0	32.8	0.0
	BLM Total		**802,493.6**	**75.6**	**695.5**	**219.2**	**0.0**

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
N2-A	Poulsen	USFS	652.9	1.1	10.1	3.2	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.3	13.3	0.0
	Joseph	USFS	5,487.1	7.1	65.3	20.6	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.8	0.6	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	49.7	15.7	0.0
	Clear Creek	USFS	16,022.9	8.4	77.3	24.4	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	0.9	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.2	13.6	0.0
	USFS Total		**166,080.4**	**31.8**	**292.6**	**92.2**	**0.0**
	Grand Total		**968,574.0**	**107.4**	**988.1**	**311.5**	**0.0**
N3	Aurora	BLM – RFO	15,639.9	2.2	20.2	5.7	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	0.9	8.3	2.3	0.0
	Mineral Range	BLM – CCFO	147,846.5	2.1	19.3	5.5	0.0
	East Antelope Point	BLM – FFO	19,168.9	9.5	87.4	24.7	0.0
	Twin Peaks	BLM – FFO	253,227.3	4.8	44.2	12.5	0.0
	Norte Well	BLM – CCFO	9,783.1	2.6	23.9	6.8	0.0
	Black Rock Summer	BLM – FFO	24,115.0	0.3	2.8	0.8	0.0
	Desert	BLM – CCFO	75,860.0	0.9	8.3	2.3	0.0
	Antelope Point	BLM – FFO	3,371.9	2.6	23.9	6.8	0.0
	Hanson	BLM – CCFO	37,207.5	8.3	76.4	21.6	0.0
	Milford Bench	BLM – CCFO	11,975.6	4.7	43.2	12.2	0.0
	Whitaker	BLM – CCFO	27,906.3	8.5	78.2	22.1	0.0
	Minersville No. 2	BLM – CCFO	26,660.2	5.2	47.8	13.5	0.0
	Minersville No. 4	BLM – CCFO	29,955.8	5.5	50.6	14.3	0.0
	Minersville No. 3	BLM – CCFO	26,351.5	9.3	85.6	24.2	0.0
	Adams Well	BLM – CCFO	23,417.4	7.2	66.2	18.7	0.0
	BLM Total		**738,236.6**	**74.6**	**686.3**	**194.0**	**0.0**
	Poulsen	USFS	652.9	1.1	10.1	2.9	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.3	12.0	0.0
	Joseph	USFS	5,487.1	7.1	65.3	18.5	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.8	0.5	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	49.7	14.0	0.0
	Clear Creek	USFS	16,022.9	8.4	77.3	21.8	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	0.8	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.2	12.2	0.0
	USFS Total		**166,080.4**	**31.8**	**292.6**	**82.7**	**0.0**
	Grand Total		**904,317.0**	**109.9**	**1,011.1**	**285.7**	**0.0**
N4	Aurora	BLM – RFO	15,639.9	2.2	20.2	7.0	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	1.2	11.0	3.8	0.0
	Mineral Range	BLM – CCFO	147,846.5	15.5	142.6	49.6	0.0
	Desert	BLM – CCFO	75,860.0	4.5	41.4	14.4	0.0

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
N4	Hanson	BLM – CCFO	37,207.5	4.3	39.6	13.8	0.0
	Smithson	BLM – CCFO	29,461.2	4.3	39.6	13.8	0.0
	Frisco	BLM – CCFO	65,227.5	4.6	42.3	14.7	0.0
	Milford Cattle	BLM – CCFO	10,722.2	6.5	59.8	20.8	0.0
	Cook	BLM – CCFO	52,120.0	8.7	80.0	27.8	0.0
	Minersville No. 6	BLM – CCFO	20,489.6	5.8	53.4	18.6	0.0
	NADA	BLM – CCFO	42,286.4	6.6	60.7	21.1	0.0
	BLM Total		**502,610.5**	**64.2**	**590.6**	**205.4**	**0.0**
	Poulsen	USFS	652.9	1.1	10.1	3.5	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.3	14.7	0.0
	Joseph	USFS	5,487.1	7.1	65.3	22.7	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.8	0.6	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	49.7	17.3	0.0
	Clear Creek	USFS	16,022.9	8.4	77.3	26.9	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	1.0	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.2	15.0	0.0
	USFS Total		**166,080.4**	**31.8**	**292.6**	**101.8**	**0.0**
	Grand Total		**668,690.9**	**92.3**	**849.2**	**295.4**	**0.0**
N5	Aurora	BLM – RFO	15,639.9	2.2	20.5	6.4	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	1.2	11.2	3.5	0.0
	Mineral Range	BLM – CCFO	147,846.5	15.5	144.2	45.0	0.0
	Desert	BLM – CCFO	75,860.0	0.9	8.4	2.6	0.0
	Hanson	BLM – CCFO	37,207.5	0.6	5.6	1.7	0.0
	Milford Bench	BLM – CCFO	11,975.6	4.7	43.7	13.6	0.0
	Whitaker	BLM – CCFO	27,906.3	8.5	79.1	24.7	0.0
	Minersville No. 2	BLM – CCFO	26,660.2	5.2	48.4	15.1	0.0
	Minersville No. 4	BLM – CCFO	26,351.5	5.5	51.2	16.0	0.0
	Minersville No. 3	BLM – CCFO	26,351.5	9.3	86.5	27.0	0.0
	Adams Well	BLM – CCFO	23,417.4	7.2	67.0	20.9	0.0
	Norte Well	BLM – CCFO	9,783.1	2.6	24.2	7.5	0.0
	BLM Total		**434,749.2**	**63.4**	**589.6**	**183.9**	**0.0**
	Poulsen	USFS	652.9	1.1	10.2	3.2	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.8	13.3	0.0
	Joseph	USFS	5,487.1	7.1	66.0	20.6	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.9	0.6	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	50.2	15.7	0.0
	Clear Creek	USFS	16,022.9	8.4	78.1	24.4	0.0
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	0.9	0.1
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.7	13.6	0.0
	USFS Total		**166,080.4**	**31.8**	**295.7**	**92.2**	**0.0**
	Grand Total		**600,829.6**	**95.3**	**886.3**	**276.4**	**0.0**
N6	Aurora	BLM – RFO	15,639.9	2.2	20.5	7.7	0.0
	Pine Creek/ Indian Creek	BLM – CCFO	5,749.7	1.2	11.2	4.2	0.0

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
N6	Mineral Range	BLM – CCFO	147,846.5	15.5	144.2	54.3	0.0
	Desert	BLM – CCFO	75,860.0	0.9	8.4	3.2	0.0
	Hanson	BLM – CCFO	37,207.5	0.4	3.7	1.4	0.0
	Milford Bench	BLM – CCFO	11,975.6	4.7	43.7	16.5	0.0
	Whitaker	BLM – CCFO	27,906.3	9.0	83.7	31.5	0.0
	Minersville No. 2	BLM – CCFO	26,660.2	4.6	42.8	16.1	0.0
	Minersville No. 4	BLM – CCFO	26,351.5	5.3	49.3	18.6	0.0
	Minersville No. 3	BLM – CCFO	26,351.5	9.4	87.4	32.9	0.0
	Adams Well	BLM – CCFO	23,417.4	7.0	65.1	24.5	0.0
	Norte Well	BLM – CCFO	9,783.1	2.6	24.2	9.1	0.0
	Minersville No. 1	BLM – CCFO	46,780.5	0.4	3.7	1.4	0.0
	BLM Total		**481,529.7**	**63.2**	**587.8**	**221.2**	**0.0**
	Poulsen	USFS	652.9	1.1	10.2	3.9	0.1
	Flat Canyon	USFS	15,673.1	4.6	42.8	16.1	0.0
	Joseph	USFS	5,487.1	7.1	66.0	24.9	0.0
	Watts Mountain	USFS	36,644.7	0.2	1.9	0.7	0.0
	Joe Lott-Fish Creek	USFS	61,304.0	5.4	50.2	18.9	0.4
	Clear Creek	USFS	16,022.9	8.4	78.1	29.4	2.6
	Shingle Creek Administrative	USFS	83.1	0.3	2.8	1.1	17.8
	Pine Creek-Sulphur	USFS	30,212.6	4.7	43.7	16.5	0.8
	USFS Total		**166,080.4**	**31.8**	**295.7**	**111.3**	**0.9**
	Grand Total		**400,299.3**	**95.1**	**884.4**	**332.9**	**1.2**
Southern - South of the Black Mountains to Red Butte Substation							
S1	Desert	BLM – CCFO	75,860.0	2.5	23.5	8.8	0.0
	Perkins	BLM – CCFO	3,865.2	2.8	26.3	9.8	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	43.2	16.1	0.0
	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	63.9	23.8	0.0
	Butte	BLM – CCFO	32,258.4	1.4	13.2	4.9	0.0
	Antelope	BLM – CCFO	83,063.7	2.1	19.7	7.4	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.6	43.2	16.1	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	21.6	8.1	0.0
	Knell	BLM – CCFO	772.5	0.9	8.5	3.2	0.0
	Reservoir	BLM – CCFO	4,951.5	3.2	30.1	11.2	0.0
	Lower Meadow	BLM – CCFO	1,970.8	1.1	10.3	3.9	0.0
	Central	BLM – St. George Field Office	3,176.9	0.7	6.6	2.5	0.0
	BLM Total		**250,798.9**	**32.1**	**301.7**	**112.4**	**0.0**
	West Pinto	USFS	29,202.6	5.7	53.6	20.0	0.0
	East Pinto	USFS	16,805.4	4.1	38.5	14.4	0.0
	Pine Valley	USFS	63,794.4	9.5	89.3	33.3	0.0
	Mogotsu	USFS	34,481.2	1.6	15.0	5.6	0.0
	USFS Total		**144,283.6**	**20.9**	**196.5**	**73.2**	**0.0**
	Grand Total		**395,082.5**	**53.1**	**499.1**	**185.9**	**0.0**
S2	Desert	BLM – CCFO	75,860.0	2.5	25.3	8.0	0.0
	Perkins	BLM – CCFO	3,865.2	2.8	28.3	9.0	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	46.5	14.7	0.0

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
S2	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	68.7	21.8	0.0
	Butte	BLM – CCFO	32,258.4	1.4	14.1	4.5	0.0
	Antelope	BLM – CCFO	83,063.7	2.1	21.2	6.7	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.6	46.5	14.7	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	23.2	7.4	0.0
	Knell	BLM – CCFO	772.5	1.8	18.2	5.8	0.1
	Reservoir	BLM – CCFO	4,951.5	2.0	20.2	6.4	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.5	25.3	8.0	0.0
	Sevy East	BLM – CCFO	554.5	0.9	9.1	2.9	0.0
	BLM Total		**248,823.7**	**32.5**	**328.3**	**104.0**	**0.0**
	West Pinto	USFS	29,202.6	5.3	53.5	17.0	0.0
	Gunlock	USFS	42,035.1	0.1	1.0	0.3	0.0
	Mogotsu	USFS	34,481.2	7.6	76.8	24.3	0.0
	USFS Total		**105,718.9**	**13.0**	**131.3**	**41.6**	**0.0**
	Grand Total		**354,542.6**	**45.6**	**460.6**	**145.9**	**0.0**
S3	Desert	BLM – CCFO	75,860.0	2.5	23.5	10.3	0.0
	Perkins	BLM – CCFO	3,865.2	2.8	26.3	11.5	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	43.2	18.9	0.0
	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	63.9	27.9	0.0
	Butte	BLM – CCFO	32,258.4	1.4	13.2	5.7	0.0
	Antelope	BLM – CCFO	83,063.7	2.1	19.7	8.6	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.6	43.2	18.9	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	21.6	9.4	0.0
	Knell	BLM – CCFO	772.5	1.8	16.9	7.4	0.1
	Reservoir	BLM – CCFO	4,951.5	2.0	18.8	8.2	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.5	23.5	10.3	0.0
	Sevy East	BLM – CCFO	554.5	0.9	8.5	3.7	0.0
	BLM Total		**248,823.7**	**32.5**	**305.5**	**133.3**	**0.0**
	West Pinto	USFS	29,202.6	1.9	17.9	7.8	0.0
	Gunlock	USFS	42,035.1	16.2	152.3	66.4	0.0
	Mogotsu	USFS	34,481.2	2.4	22.6	9.8	0.0
	USFS Total		**105,718.9**	**20.5**	**192.7**	**84.1**	**0.0**
	Grand Total		**354,542.6**	**53.3**	**501.0**	**218.5**	**0.0**
S4	Desert	BLM – CCFO	75,860.0	2.5	28.0	7.5	0.0
	Perkins	BLM – CCFO	3,865.2	2.8	31.4	8.4	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	51.5	13.8	0.0
	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	76.2	20.4	0.0
	Butte	BLM – CCFO	32,258.4	1.4	15.7	4.2	0.0
	Antelope	BLM – CCFO	83,063.7	2.1	23.5	6.3	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.6	51.5	13.8	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	25.8	6.9	0.0
	Knell	BLM – CCFO	772.5	1.8	20.2	5.4	0.1
	Reservoir	BLM – CCFO	4,951.5	2.0	22.4	6.0	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.5	28.0	7.5	0.0
	Sevy East	BLM – CCFO	554.5	0.3	3.4	0.9	0.0
	BLM Total		**248,823.7**	**31.9**	**357.3**	**95.7**	**0.0**

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
S4	West Pinto	USFS	29,202.6	7.4	82.9	22.2	0.0
	Mogotsu	USFS	34,481.2	7.7	86.2	23.1	0.0
	USFS Total		**63,683.8**	**15.1**	**169.1**	**45.3**	**0.0**
	Grand Total		**312,507.5**	**47.1**	**527.5**	**141.3**	**0.0**
S5	Desert	BLM – CCFO	75,860.0	2.5	23.5	8.3	0.0
	Perkins	BLM – CCFO	3,865.2	2.0	18.8	6.6	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	2.9	27.3	9.6	0.0
	Reservoir	BLM – CCFO	4,951.5	2.2	20.7	7.3	0.0
	Nelson	BLM – CCFO	10,536.7	1.0	9.4	3.3	0.0
	Urie	BLM – CCFO	4,908.2	1.6	15.0	5.3	0.0
	Reed Leigh	BLM – CCFO	5,849.7	2.5	23.5	8.3	0.0
	Hole in the Wall	BLM – CCFO	5,273.1	1.1	10.3	3.6	0.0
	Iron Springs	BLM – CCFO	12,252.9	2.8	26.3	9.2	0.0
	Big Hallow Wash	BLM – CCFO	8,393.6	2.1	19.7	6.9	0.0
	Neck of the Desert	BLM – CCFO	16,191.4	6.6	62.0	21.8	0.0
	Joel Spring	BLM – CCFO	25,138.9	6.5	61.1	21.5	0.0
	Lower Meadow	BLM – CCFO	1,970.8	1.1	10.3	3.6	0.0
	Central	BLM – St. George Field Office	3,176.9	0.7	6.6	2.3	0.0
	BLM Total		**194,923.6**	**35.6**	**334.6**	**117.5**	**0.0**
	West Pinto	USFS	29,202.6	5.7	53.6	18.8	0.0
	East Pinto	USFS	16,805.4	4.1	38.5	13.5	0.0
	Pine Valley	USFS	63,794.4	9.5	89.3	31.4	0.0
	Mogotsu	USFS	34,481.2	1.6	15.0	5.3	0.0
	USFS Total		**144,283.6**	**20.9**	**196.5**	**69.0**	**0.0**
	Grand Total		**339,207.2**	**56.5**	**531.1**	**186.5**	**0.0**
S6	Desert	BLM – CCFO	75,860.0	2.5	23.3	9.3	0.0
	Perkins	BLM – CCFO	3,865.2	2.0	18.6	7.4	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	2.9	27.0	10.7	0.0
	Reservoir	BLM – CCFO	4,951.5	3.2	29.8	11.8	0.0
	Nelson	BLM – CCFO	10,536.7	1.0	9.3	3.7	0.0
	Urie	BLM – CCFO	4,908.2	1.6	14.9	5.9	0.0
	Reed Leigh	BLM – CCFO	5,849.7	2.5	23.3	9.3	0.0
	Hole in the Wall	BLM – CCFO	5,273.1	1.1	10.2	4.1	0.0
	Iron Springs	BLM – CCFO	12,252.9	2.8	26.0	10.4	0.0
	Big Hallow Wash	BLM – CCFO	8,393.6	2.1	19.5	7.8	0.0
	Neck of the Desert	BLM – CCFO	16,191.4	6.6	61.4	24.4	0.0
	Joel Spring	BLM – CCFO	25,138.9	6.5	60.5	24.1	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.0	18.6	7.4	0.0
	Sevy East	BLM – CCFO	554.5	0.9	8.4	3.3	0.0
	BLM Total		**192,948.4**	**37.7**	**350.6**	**139.5**	**0.0**
	West Pinto	USFS	29,202.6	1.9	17.7	7.0	0.0
	Gunlock	USFS	42,035.1	16.2	150.7	59.9	0.0
	Mogotsu	USFS	34,481.2	2.4	22.3	8.9	0.0
	USFS Total		**105,718.9**	**20.5**	**190.7**	**75.9**	**0.0**
	Grand Total		**298,667.3**	**58.3**	**542.2**	**215.7**	**0.0**

TABLE J-1
BUREAU OF LAND MANAGEMENT (BLM) AND U.S. FOREST SERVICE (USFS) GRAZING ALLOTMENTS BY ALTERNATIVE

Alternative Route	Allotment	Jurisdiction	Total Acres of Allotment	Miles Crossed by Project	Temporary Disturbance [1, 2]	Permanent Disturbance [1, 3]	Percent of Allotment Disturbed
S7	Antelope	BLM – CCFO	83,063.7	2.2	22.9	7.3	0.0
	Butte	BLM – CCFO	32,258.4	1.3	13.5	4.3	0.0
	Desert	BLM – CCFO	75,860.0	2.5	26.0	8.3	0.0
	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	70.7	22.4	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	47.8	15.2	0.0
	Perkins	BLM – CCFO	3,856.2	2.8	29.1	9.2	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.5	26.0	8.3	0.0
	Reservoir	BLM – CCFO	4,951.5	2.0	20.8	6.6	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.7	48.9	15.5	0.0
	Sevy East	BLM – CCFO	554.5	0.9	9.4	3.0	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	23.9	7.6	0.0
	BLM Total		**248,042.2**	**32.5**	**338.0**	**107.3**	**0.0**
	West Pinto	USFS	29,202.6	5.5	57.2	18.2	0.0
	Mogotsu	USFS	34,481.2	7.7	80.1	25.4	0.0
	USFS Total		**63,683.8**	**13.2**	**137.3**	**43.6**	**0.0**
	Grand Total		**311,726.0**	**48.8**	**507.5**	**161.0**	**0.0**
S7-A	Antelope	BLM – CCFO	83,063.7	2.2	22.4	7.0	0.0
	Butte	BLM – CCFO	32,258.4	1.3	13.3	4.2	0.0
	Desert	BLM – CCFO	75,860.0	2.5	25.5	8.0	0.0
	Dick Palmer Wash	BLM – CCFO	16,659.2	6.8	69.4	21.8	0.0
	Leigh Livestock	BLM – CCFO	16,554.7	4.6	46.9	14.7	0.0
	Perkins	BLM – CCFO	3,856.2	2.8	28.6	9.0	0.0
	Pinto Creek	BLM – CCFO	2,618.0	2.5	25.5	8.0	0.0
	Reservoir	BLM – CCFO	4,951.5	2.0	20.4	6.4	0.0
	Sand Spring	BLM – CCFO	6,705.5	4.7	47.9	15.0	0.0
	Sevy East	BLM – CCFO	554.5	0.9	9.2	2.9	0.0
	Silver Peak	BLM – CCFO	4,960.5	2.3	23.5	7.4	0.0
	BLM Total		**248,042.2**	**32.5**	**331.5**	**104.0**	**0.0**
	West Pinto	USFS	29,202.6	5.5	56.1	`	0.0
	Mogotsu	USFS	34,481.2	7.7	78.5	24.6	0.0
	USFS Total		**63,683.8**	**13.2**	**134.6**	**42.2**	**0.0**
	Grand Total		**311,726.0**	**48.8**	**497.8**	**156.2**	**0.0**

NOTES:
[1] 5 percent added to the total acreage for estimating purposes.
[2] Temporary Disturbance: Estimated area of disturbance associated with structure work areas, wire-splicing sites, wire-pulling sites, wire-tensioning sites, construction yards, and a concrete batch plant.
[3] Permanent Disturbance: Estimated area of disturbance associated with H-frame, lattice, and three-pole structure base areas and permanent access roads.
Acres in table are rounded to the nearest acre and, therefore, columns may not sum exactly.

TABLE J-2
BUREAU OF LAND MANAGEMENT AND U.S. FOREST SERVICE GRAZING ALLOTMENTS CROSSED BY LINK

Map	Link Number	Allotment Crossed From Milepost	Allotment Crossed To Milepost	Total Miles Crossed	Allotment Name	Jurisdiction
MV-14a	30	0.0	0.2	0.2	Aurora	BLM
	30	3.0	4.1	1.1	Poulsen	USFS
	30	4.2	4.4	0.2	Flat Canyon	USFS
	30	4.8	5.0	0.2	Flat Canyon	USFS
	30	5.2	5.4	0.2	Flat Canyon	USFS
	30	5.4	5.7	0.3	Flat Canyon	USFS
	30	5.8	6.0	0.2	Flat Canyon	USFS
	30	6.8	8.0	1.2	Flat Canyon	USFS
	30	8.1	8.5	0.4	Flat Canyon	USFS
	30	8.6	8.8	0.2	Flat Canyon	USFS
	30	9.1	10.8	1.7	Flat Canyon	USFS
	30	10.8	12.2	1.4	Joseph	USFS
	30	12.8	13.1	0.3	Joseph	USFS
	30	13.3	14.5	1.2	Joseph	USFS
	30	14.5	14.7	0.2	Watts Mountain	USFS
	30	14.7	17.2	2.5	Joseph	USFS
	33	0.2	1.0	0.8	Aurora	BLM
	33	1.5	2.4	0.9	Aurora	BLM
	33	4.6	4.9	0.3	Aurora	BLM
	45	0.0	1.1	1.1	Joseph	USFS
	63	0.0	0.9	0.9	Joe Lott-Fish Creek	USFS
	64	0.0	0.6	0.6	Joseph	USFS
	64	0.8	5.2	4.4	Joe Lott-Fish Creek	USFS
	66	0.0	0.1	0.1	Joe Lott-Fish Creek	USFS
	66	0.1	5.7	5.6	Clear Creek	USFS
	66	5.7	6.0	0.3	Shingle Creek Administrative	USFS
	66	6.0	8.8	2.8	Clear Creek	USFS
	66	8.8	10.5	1.7	Pine Creek-Sulphur	USFS
MV-14b	68	10.5	12.0	1.5	Pine Creek-Sulphur	USFS
	68	0.0	1.5	1.5	Pine Creek-Sulphur	USFS
	68	1.5	2.1	0.6	Pine Creek/Indian Creek	BLM
	75	0.0	0.6	0.6	Pine Creek/Indian Creek	BLM
	75	1.0	16.5	15.5	Mineral Range	BLM
	75	16.5	16.6	0.1	Hanson	BLM
	155	0.0	3.6	3.6	Milford Cattle	BLM
	305	0.0	0.3	0.3	Pine Creek/Indian Creek	BLM
	305	0.5	2.1	1.6	Mineral Range	BLM
	305	2.1	3.9	1.8	East Antelope Point	BLM
	320	0.0	5.5	5.5	East Antelope Point	BLM
	345	0.0	0.2	0.2	Twin Peaks	BLM
	345	0.2	0.5	0.3	Antelope Point	BLM
	345	0.5	0.9	0.4	Twin Peaks	BLM
	345	0.9	1.2	0.3	Black Rock Summer	BLM
	345	1.2	3.5	2.3	Antelope Point	BLM
	345	3.5	9.0	5.5	Hanson	BLM
	345	9.0	9.1	0.1	Mineral Range	BLM
	348	0.0	1.3	1.3	Mineral Range	BLM
	348	1.3	2.9	1.6	Hanson	BLM
	349	0.0	0.3	0.3	Hanson	BLM
	349	0.3	1.2	0.9	Milford Bench	BLM

TABLE J-2
BUREAU OF LAND MANAGEMENT AND U.S. FOREST SERVICE GRAZING ALLOTMENTS CROSSED BY LINK

Map	Link Number	Allotment Crossed From Milepost	Allotment Crossed To Milepost	Total Miles Crossed	Allotment Name	Jurisdiction
MV-14b	350	0.0	1.1	1.1	East Antelope Point	BLM
	350	1.1	5.3	4.2	Twin Peaks	BLM
	360	0.0	1.1	1.1	Twin Peaks	BLM
	360	1.1	8.2	7.1	Black Rock Summer	BLM
	365	0.0	3.1	3.1	Beaver Lake	BLM
	380	0.0	0.5	0.5	Beaver Lake	BLM
	380	0.5	10.4	9.9	Smithson	BLM
	381	0.0	1.1	1.1	Smithson	BLM
	381	1.1	5.7	4.6	Frisco	BLM
	381	5.7	8.6	2.9	Milford Cattle	BLM
	385	0.0	3.9	3.9	Hanson	BLM
	386	0.0	3.2	3.2	Smithson	BLM
	390	0.0	3.8	3.8	Milford Bench	BLM
	390	3.8	11.0	7.2	Whitaker	BLM
	450	0.0	0.4	0.4	Mineral Range	BLM
	450	0.4	3.0	2.6	Hanson	BLM
	455	0.0	0.3	0.3	Hanson	BLM
	460	0.0	0.2	0.2	Hanson	BLM
	460	0.2	1.4	1.2	Milford Bench	BLM
	470	0.0	3.5	3.5	Milford Bench	BLM
	470	3.5	10.8	7.3	Whitaker	BLM
MV-14c	155	4.1	12.0	7.9	Cook	BLM
	160	0.0	0.3	0.3	Cook	BLM
	160	0.3	5.2	4.9	Minersville No. 6	BLM
	160	5.3	6.2	0.9	Minersville No. 6	BLM
	160	6.2	12.8	6.6	NADA	BLM
	160	12.8	17.3	4.5	Desert	BLM
	163	0.0	2.5	2.5	Desert	BLM
	163	2.5	3.2	0.7	Perkins	BLM
	165	0.0	2.1	2.1	Perkins	BLM
	165	2.1	6.7	4.6	Leigh Livestock	BLM
	165	6.8	13.6	6.8	Dick Palmer Wash	BLM
	165	13.6	14.4	0.8	Butte	BLM
	390	11.0	12.8	1.8	Whitaker	BLM
	390	12.8	16.5	3.7	Minersville No. 2	BLM
	395	0.0	1.0	1.0	Minersville No. 4	BLM
	395	1.0	1.1	0.1	Minersville No. 1	BLM
	395	1.1	1.3	0.2	Minersville No. 4	BLM
	395	1.3	1.6	0.3	Minersville No. 1	BLM
	395	1.6	3.9	2.3	Minersville No. 3	BLM
	396	0.0	7.1	7.1	Minersville No. 3	BLM
	396	7.1	14.1	7.0	Adams Well	BLM
	396	14.1	14.6	0.5	Norte Well	BLM
	397	0.0	2.1	2.1	Norte Well	BLM
	397	2.1	3.0	0.9	Desert	BLM
	430	0.0	1.3	1.3	Perkins	BLM
	430	1.3	2.3	1.0	Nelson	BLM
	430	2.3	3.3	1.0	Leigh Livestock	BLM
	430	3.3	3.7	0.4	Reed Leigh	BLM
	430	3.7	5.3	1.6	Urie	BLM
	430	5.3	7.4	2.1	Reed Leigh	BLM

TABLE J-2
BUREAU OF LAND MANAGEMENT AND U.S. FOREST SERVICE GRAZING ALLOTMENTS CROSSED BY LINK

Map	Link Number	Allotment Crossed From Milepost	Allotment Crossed To Milepost	Total Miles Crossed	Allotment Name	Jurisdiction
MV-14c	430	7.4	8.5	1.1	Hole in the Wall	BLM
	430	8.5	9.8	1.3	Leigh Livestock	BLM
	470	10.8	12	1.2	Whitaker	BLM
	470	12.0	16.3	4.3	Minersville No. 2	BLM
	475	0.0	0.9	0.9	Minersville No. 2	BLM
	475	0.9	5.0	4.1	Minersville No. 4	BLM
	480	0.0	1.4	1.4	Minersville No. 4	BLM
	480	1.4	4.2	2.8	Minersville No. 3	BLM
	490	0.0	6.5	6.5	Minersville No. 3	BLM
	490	6.5	13.7	7.2	Adams Well	BLM
	490	13.7	14.2	0.5	Norte Well	BLM
MV-14d	165	14.4	14.6	0.2	Butte	BLM
	220	0.0	0.4	0.4	Butte	BLM
	220	0.4	2.5	2.1	Antelope	BLM
	220	2.8	7.4	4.6	Sand Spring	BLM
	220	7.4	9.6	2.2	Silver Peak	BLM
	221	0.0	0.1	0.1	Silver Peak	BLM
	221	0.1	1.9	1.8	Reservoir	BLM
	221	2.0	2.2	0.2	Reservoir	BLM
	221	2.4	4.9	2.5	Pinto Creek	BLM
	221	4.9	5.1	0.2	Sevy East	BLM
	222	0.0	0.1	0.1	Sevy East	BLM
	222	0.1	1.3	1.2	West Pinto	USFS
	225	0.6	5.4	4.8	West Pinto	USFS
	240	0.0	0.1	0.1	Silver Peak	BLM
	240	0.1	2.2	2.1	Reservoir	BLM
	245	0.0	1.0	1.0	Reservoir	BLM
	250	0.0	1.1	1.1	Reservoir	BLM
	250	1.1	3.1	2.0	Pinto Creek	BLM
	250	3.1	3.3	0.2	Sevy East	BLM
	260	0.0	0.1	0.1	Reservoir	BLM
	260	0.1	1.2	1.1	Lower Meadow	BLM
	260	1.2	6.9	5.7	West Pinto	USFS
	260	6.9	11.0	4.1	East Pinto	USFS
	260	11.0	18.0	7.0	Pine Valley	USFS
	260	18.0	19.1	1.1	Mogotsu	USFS
	260	19.1	21.6	2.5	Pine Valley	USFS
	260	22.1	22.8	0.7	Central	BLM
	260	24.8	25.2	0.4	Mogotsu	USFS
	270	0.0	1.4	1.4	West Pinto	USFS
	270	1.4	6.8	5.4	Mogotsu	USFS
	275	0.0	1.7	1.7	Mogotsu	USFS
	275	1.9	2.4	0.5	Mogotsu	USFS
	280	0.0	0.8	0.8	West Pinto	USFS
	280	0.8	3.6	2.8	Gunlock	USFS
	280	4.1	4.6	0.5	Gunlock	USFS
	285	0.0	12.5	12.5	Gunlock	USFS
	290	0.0	0.4	0.4	Gunlock	USFS
	290	0.4	2.7	2.3	Mogotsu	USFS
	430	9.8	10.1	0.3	Leigh Livestock	BLM
	435	0.0	0.3	0.3	Leigh Livestock	BLM

TABLE J-2
BUREAU OF LAND MANAGEMENT AND U.S. FOREST SERVICE GRAZING ALLOTMENTS CROSSED BY LINK

Map	Link Number	Allotment Crossed From Milepost	Allotment Crossed To Milepost	Total Miles Crossed	Allotment Name	Jurisdiction
MV-14d	435	0.3	3.0	2.7	Iron Springs	BLM
	438	0.0	0.1	0.1	Iron Springs	BLM
	438	0.1	2.2	2.1	Big Hallow Wash	BLM
	438	2.2	8.8	6.6	Neck of the Desert	BLM
	438	8.8	15.3	6.5	Joel Spring	BLM
	438	15.3	16.4	1.1	Reservoir	BLM
	441	0.0	0.7	0.7	Sevy East	BLM
	441	3.0	3.1	0.1	West Pinto	USFS
	442	0.0	0.3	0.3	West Pinto	USFS
	442	0.9	1.2	0.3	West Pinto	USFS
	442	1.4	1.8	0.4	West Pinto	USFS
	443	0.0	2.1	2.1	West Pinto	USFS
	443	2.1	2.2	0.1	Gunlock	USFS
	443	2.2	4.2	2.0	West Pinto	USFS
	444	0.0	0.1	0.1	West Pinto	USFS
	444	0.1	5.4	5.3	Mogotsu	USFS
	445	0.0	3.0	3.0	West Pinto	USFS
	500	0.0	0.1	0.1	Mogotsu	USFS

NOTE: MV = Map Volume

Appendix K – Letters Documenting Compliance Regarding Lands with Wilderness Characteristics

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Color Country District Office
Cedar City Field Office
176 East DL Sargent Drive
Cedar City, UT 84721
Telephone (435) 865-3000
www.blm.gov/ut/st/en/fo/cedar_city.html

TAKE PRIDE IN AMERICA

In Reply Refer To:
UTU-83067
2800
UTC010

March 17, 2011

To: Project Manager, Sigurd to Red Butte Transmission Line

From: Field Manager, Cedar City Field Office

Subject: Review of alternatives for the proposed Sigurd to Red Butte Transmission Line for lands with Wilderness Characteristics

The Cedar City Field Office has reviewed the alternatives for the proposed Sigurd to Red Butte transmission line for both the size and naturalness criteria associated with lands with wilderness characteristics. In compliance with Secretarial Order 3310, the alternative routes have been determined to be located on lands which clearly lack wilderness characteristics because these lands do not meet wilderness character inventory size criterion, or they lack the appearance of naturalness due to existing development.

This review was completed on March 16, 2011, and evaluated all lands traversed by the proposed action or alternatives for the proposed action for both size and naturalness.

To determine size of potential units, lands were screened against roads, major infrastructure (transmission lines, major buried pipelines), and private lands. Only one area transected by the Sigurd to Red Butte Alternatives had 5000 acres of contiguous BLM lands. The project area traversing this unit was then screened for development which might preclude the existence of wilderness characteristics. This area was previously inventoried for wilderness characteristics. A record search of the 1979 wilderness characteristics inventory unit UT-040-168 provides the following information:

Unit UT-040-168

This unit contains the Bradshaw and Lincoln mining districts. Within the unit are approximately 1000 acres of patented claims, with numerous roads penetrating the unit to access them. In addition, the area is traversed by a transmission line, contains communications towers, and numerous constructed range improvements.

The concentration of developments within the unit clearly demonstrates a lack of wilderness characteristics. Additional sources used in the evaluation of naturalness included aerial photography, data regarding existing major development (e.g., existing transmission lines, major cross-country energy pipelines), and field data.

In summary, most lands within the proposed project area are less than 5,000 acres in size, and are not adjacent to any other lands with wilderness characteristics. Further, the lands lack naturalness due to pre-existing and highly visible intrusions (e.g., material sites, roads, etc.).

Randy M. Trujillo

Cc:

Todd Christensen, Color Country District Manager
Rob Wilson, Lands and Realty Specialist, Cedar City Field Office
Bernice Sterin, Natural Resource Specialist, Utah State Office
EPG, 208 East 800 South, Salt Lake City, UT 84111

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ST. GEORGE FIELD OFFICE
345 East Riverside Drive
St. George, Utah 84790

TAKE PRIDE IN AMERICA

In Reply Refer to:

March 17, 2011

Bureau of Land Management
Attention: Tamara Gertsch, Project Lead
Sigurd-Red Butte Project
5353 Yellowstone Rd
PO Box 1828
Cheyenne, Wyoming 82003

Dear Tamara,

This letter is in regards to the Rocky Mountain Power, Sigurd-Red Butte Project. It will provide written documentation from the St. George Field Office (SGFO) regarding Secretarial Order #3310, which was issued by the Department of Interior on December 23, 2010. This Order requires that all current projects conduct a wilderness characteristics inventory.

The proposed southern terminus of the Sigurd to Red Butte Power line project crosses the northern boundary of the St. George Field Office. This area was previously inventoried for wilderness characteristics. A record search of the 1979 wilderness characteristics inventory unit UT-040-043 provides the following information:

Unit UT-040-043

> B) Naturalness Analysis – The imprint of man's work is substantially noticeable throughout the inventory unit. The extensive network of roadways and transmission line effectively combine to subdivide the unit. The chaining and drilling sites also impact any potential naturalness. These developments, in combination, impact the unit to the extent that the wilderness characteristic of naturalness is lacking.

The SGFO is currently undertaking a field office wide inventory of wilderness characteristics in support of an RMP amendment. The preliminary analysis has already eliminated this area for the same reasons identified in the 1979 inventory. In addition, this area would not qualify as Lands with Wilderness Characteristics (LWC) under Manual 6301 since it is less than 5,000 acres and is not contiguous with lands which have been formally determined to have wilderness or potential wilderness values.

It should be noted that the Utah Wilderness Coalition submitted an updated wilderness proposal for the St. George Field Office following passage of the Omnibus Public Lands Bill of 2009 (P.L. 111-11). Their updated submission removed those lands which Congress had designated as wilderness under the Omnibus Bill. That proposal differs significantly from their 2011 proposal which is being used for the Sigurd-Red Butte Project. The inventory unit referenced above was

one of those differences. This unit was not proposed by the UWC in their submittal to the SGFO that occurred after passage of the Omnibus Bill. For the purpose of this analysis, the data supplied by EPG is considered new information.

Conclusion

The review of this project was conducted on March 16, 2011 by the SGFO Outdoor Recreation Planner to determine if wilderness characteristics were present. It was determined that the conditions within the identified unit have not changed. The new information provided by the Utah Wilderness Coalition does not affect this determination. Additional inventory does not need to be conducted due to the lack of naturalness and failure to meet the 5,000 acre minimum.

Sincerely,

Jimmy Tyree
Field Manager

Attachment:
Map

cc:

Todd Christensen, Color Country District Manager
Rob Wilson, Lands and Realty Specialist, Cedar City Field Office
Bernice Sterin, Natural Resource Specialist, Utah State Office
EPG, 208 East 800 South, Salt Lake City, UT 84111

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
FILLMORE FIELD OFFICE
95 East 500 North
Fillmore, Utah 84631

TAKE PRIDE IN AMERICA

In Reply Refer to:
2800
(UTW02000) UTU-83067

March 17, 2011

Bureau of Land Management
Attention: Tamara Gertsch, Project Lead
Sigurd-Red Butte Project
5353 Yellowstone Rd
PO Box 1828
Cheyenne, Wyoming 82003

Dear Tamara,

This letter is in regards to the Rocky Mountain Power, Sigurd-Red Butte Project. It will provide written documentation from the Fillmore Field Office (FFO) regarding Secretarial Order #3310, which was issued by the Department of Interior on December 23, 2010. This Order requires that all current projects conduct a wilderness characteristics inventory.

The proposed Sigurd to Red Butte Power line project crosses through two areas previously inventoried along Black Rock Road in the Fillmore Field Office (FFO) for wilderness characteristics. A record search of the 1979 wilderness characteristics inventory units UT-050-170 and UT-050-170 A, Antelope Mountain-Mineral Mountains, provides the following information:

<u>Unit UT-050-170</u>

a) Unit Evaluation - The area obviously and clearly does not meet the criteria for identification as a Wilderness Study Area. This unit embraces an historic mining district in the Millard and Beaver counties. The presence of mines and prospects is extensive throughout the area. Because of the established mining activities, the Unit obviously and clearly lacks the criterion for "naturalness".

b) Unit Recommendation – The area obviously and clearly does not meet the criteria for identification as a Wilderness Study Area. The area is recommended as not qualifying for further inventory and should be dropped from the wilderness review process.

Unit UT-050-170 A

a) Unit Evaluation – The area obviously and clearly does not meet the criteria for identification as a Wilderness Study Area. Because of the numerous roadways entering this Unit from adjacent private lands, the Unit obviously and clearly lacks the wilderness characteristic of "naturalness"
b) Unit Recommendation - The area obviously and clearly does not meet the criteria for identification as a Wilderness Study Area. The area is recommended as not qualifying for further inventory and should be dropped from the wilderness review process.

Units UT-050-168, 172, and 176

There are no files on record for these three units. However, the Richfield District Wilderness Initial Inventory document recommendations identify all three units as "not recommended" for further analysis. Documentation for Unit UT-050-172 states that this unit "has 30 miles of well travelled roads that eliminate naturalness. Interstate 15 and the Town of Cove Fort are adjacent to the unit. This is not recommended for intensive inventory".

Conclusion

The review of this project was conducted on March 2, 2011 by the FFO ID team to determine if wilderness characteristics were present. It was determined that conditions of the above identified units had not changed. During the review process for this project no new information or citizen proposals with new information have been brought forward. The proposed route does not meet the criteria as a wilderness area. Additional wilderness character inventory was not conducted due to the lack of naturalness.

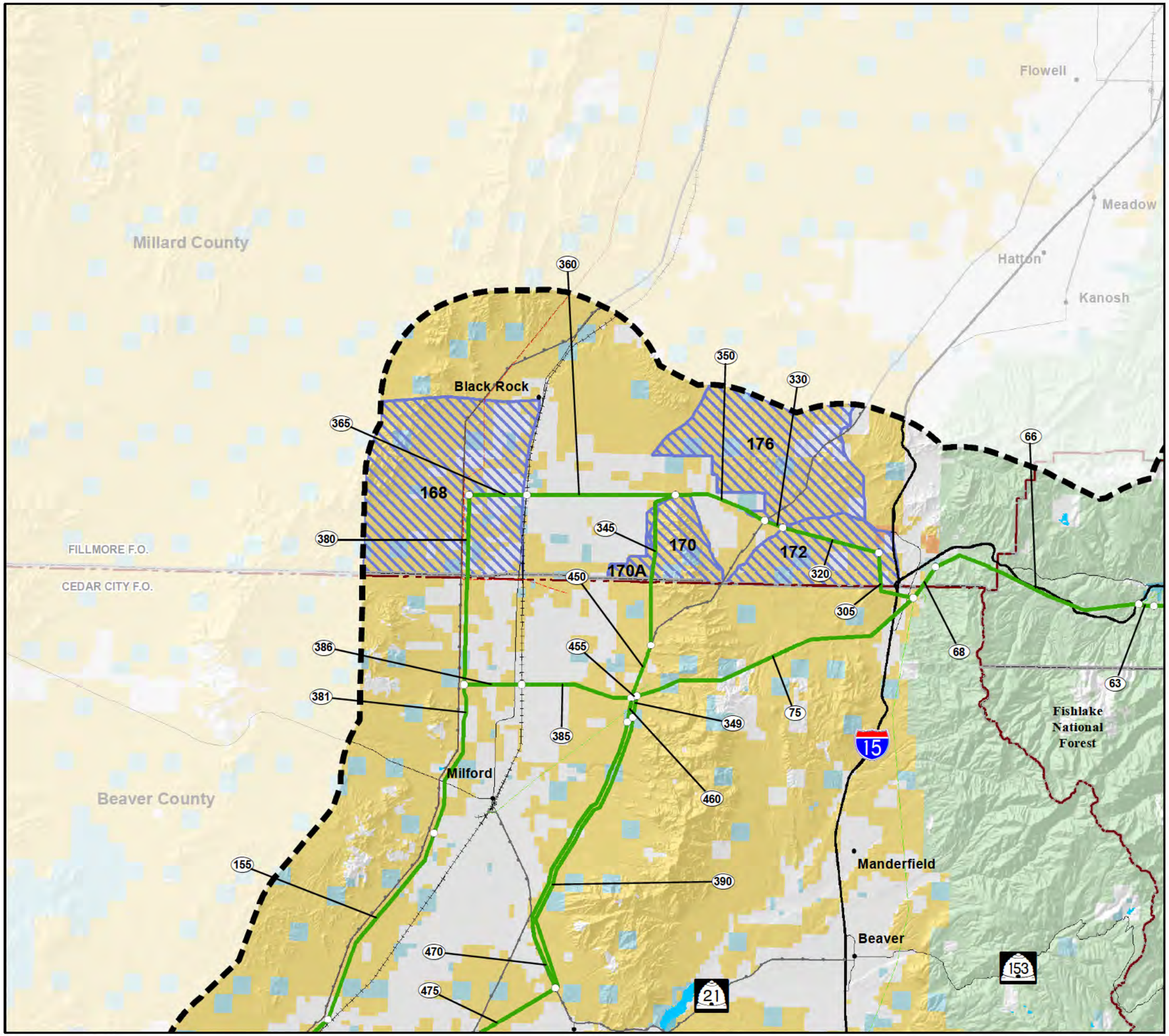
Sincerely,

Randy Bobatt for

Michael D. Gates
Field Manager

Attachment:
Map

cc:
Todd Christensen, Color Country District Manager
Bernice Sterin, Natural Resource Specialist, Utah State Office
EPG, 208 East 800 South, Salt Lake City, UT 84111



Fillmore Field Office 1979 BLM Wilderness Inventory Units

PROJECT FEATURES

- Alternative Routes Being Considered
- Link Node
- Link Number

WILDERNESS INVENTORY

- Wilderness Inventory Units

LAND OWNERSHIP

- Bureau of Land Management
- Indian Reservation
- Private
- State of Utah Trust Lands
- State Park
- U.S. Forest Service

GENERAL REFERENCE FEATURES

- Project Area
- 500kV +/- DC Transmission Line
- 345kV Transmission Line
- 138 to 161kV Transmission Line
- Pipeline
- BLM Field Office Boundary
- County Boundary
- Interstate & U.S. Highway
- State Highway
- Railroad
- Lake, Pond, or Reservoir

SOURCES:
Wilderness Inventory: BLM, 1979
Transportation: Streetmap 50K to 250K, 2008
Land Jurisdiction: BLM State Office Utah, 2008
POWERmap, powermap.platts.com
©2007 Platts, A Division of The McGraw-Hill Companies

NOTES:
Substation locations are schematic and do not necessarily represent precise locations.

0 6 12
Miles

Date Last Revised: March 2010

PRELIMINARY DRAFT

SIGURD TO RED BUTTE NO. 2
345kV TRANSMISSION PROJECT DEIS

NATIONAL SYSTEM OF PUBLIC LANDS

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Color Country District Office
Richfield Field Office
150 East 900 North
Richfield, Utah 84701
Telephone (435) 896-1500
www.ut.blm.gov

In Reply Refer To:
2800
UTU-87238
UTCO20

January 31, 2011

Tamara Gertsch
Realty Specialist
Bureau of Land Management
Wyoming State Office
5353 Yellowstone Road
PO Box 1828
Cheyenne, Wyoming 82003

Dear Ms. Gertsch,

This is in reply to EPG's request regarding the Bureau of Land Management (BLM), Richfield Field Office (RFO) compliance with the new wilderness policy in the proposed Sigurd to Red Butte (SRB) 500kV Transmission Line ADEIS 2.

Two areas located north of Richfield and West of Sigurd, Sevier County, Utah, are depicted on Map MV-15a of ADEIS 2, Volume II as hatched areas and referenced as a Proposed Wilderness Area in the legend of said map.

The information provided by EPG, Justin Peterson's e-mail dated January 19, 2011, indicates the wilderness data was obtained from the Wild Utah Project (2009).

A review of our records, which includes the approved Richfield Field Office (RFO) Resource Management Plan (RMP), indicates a re-inventory document was completed in approximately April 2008, just prior to the approval of the RFO RMP. This re-evaluation was done based on a wilderness proposal submitted by SUWA and Utah Wilderness Coalition (UWC) which includes lands that roughly correspond to the locations submitted by the Wild Utah Project (WUP) as being Units 3 and 4 of the SUWA/UWC proposal. The Wilderness Character of the subject tracts of public land was addressed and provides the following conclusion:

The public lands in units 2, 3, and 4 lack wilderness characteristics of naturalness to some degree, and have no opportunity for primitive recreation to any significant degree. There is opportunity for

solitude since the use levels are so low. There are no supplemental values. These land units do not present significant wilderness characteristic values. Unit 1 is small and isolated from other lands and is not manageable as wilderness.

The BLM acreage is contiguous to a Forest Service “roadless area” designation in the existing Fishlake Forest Management Plan. Established BLM practice with wilderness inventory has consistently recognized other land management agency designations which have officially “designated wilderness areas” or “administratively endorse lands for wilderness management” when considering BLM managed land units that are less than 5,000 acres in size. Other agency designations which may be somewhat protective of environmental resources such as wilderness characteristics but do not “administratively endorse lands for wilderness management” are not considered as providing the same management practices that are required for wilderness management. As part of the interdisciplinary review BLM RFO contacted the Fishlake National Forest (FLNF) to determine what the current management designation of the Forest lands contiguous to the subject BLM managed lands. According to the Forest Service, the area is currently not endorsed for wilderness in this area.

Since the FLNF has determined that the lands which lie within their management cannot be managed as wilderness, these small portions also cannot be managed as wilderness.

Further, the following public land rights-of-way and/or human intrusions are located within and along the southwest side of EPG’s two hatched tracts of public land which are located within T. 22 and 23 S., R. 2 W., SLM, and in the general vicinity of the proposed SRB 500kV transmission line alignment (See attached map):

T. 22 S., R. 2 W., SLM

Section 33:	SL-063479	Qwest Corp telephone line
	U-57908	FHWA Material Site
	U-59061	FHWA Richfield-Sigurd I-70
	U-033540C	PacifiCorp Richfield-Scipio 46kV Line

T. 23 S., R. 2 W., SLM

Section 5:	SL-063479	Qwest Corp telephone line
	U-57909	FHWA Material Site
	U-59061	FHWA Interstate Highway 70
	U-033540C	PacifiCorp Richfield-Scipio 46kV Line
	U-081591	PacifiCorp 138kV Power Line

Also, an isolated parcel of public land connects at the southwest corner of the above described Section 5 and is described as the NE¼, SE¼NW¼ of Section 7, T. 23 S., R. 2 W., SLM (200 acres). Intrusions located within this portion of Section 7 is an abandoned material site

that was previously used for material to construct I-70, the Willowwood Turf Farm irrigation pipeline ROW UTU-80736, and a portion of a shooting range that extends from private land that Richfield City recently acquired from SITLA. Richfield City tentatively proposes to purchase the remaining described public land in Section 7.

In summary, the lands are less than 5,000 acres in size and are not adjacent to Forest Service lands designated or endorsed as wilderness. Further, the lands lack naturalness due to pre-existing and highly visible intrusions (eg., material sites, roads, ROWs, etc.). Thus the lands lack wild character and are too small to administer as wild lands under the current policy.

Sincerely,

/s/

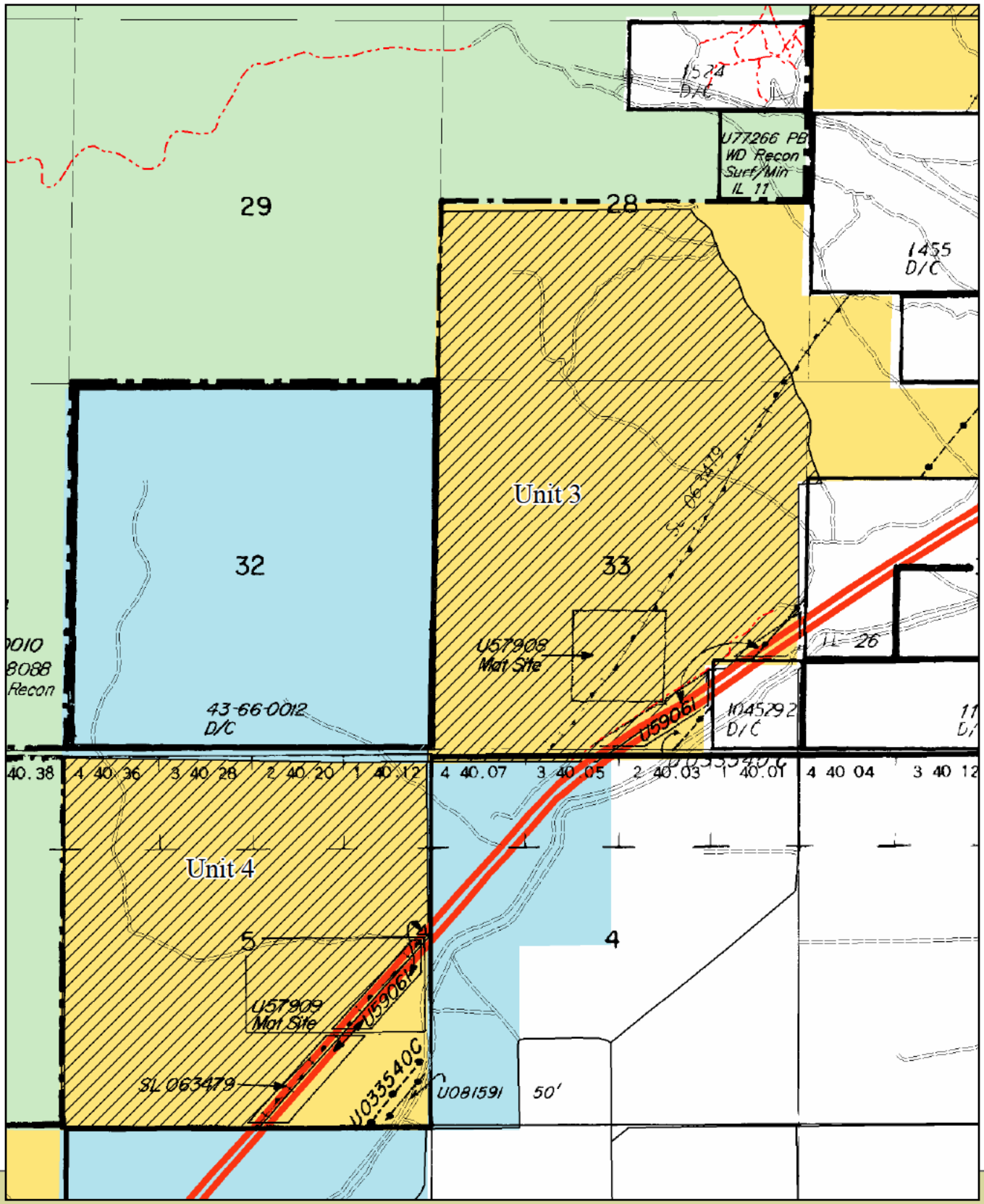
Wayne A. Wetzel
Acting Field Office Manager

Enclosure:
Map

ND:ndemille

Units of SUWA/UWC Wilderness Proposal
BLM Evaluated for Wilderness Character in 2008

BLM



Public Land | State Land | National Forest | Private Land | Na ional Park

BLM Lands Evaluated and Found Not Possess Wilderness Characteristics

All Roads are BLM Designated Routes

N

0 0.5 1 Miles

NATIONAL SYSTEM OF PUBLIC LANDS

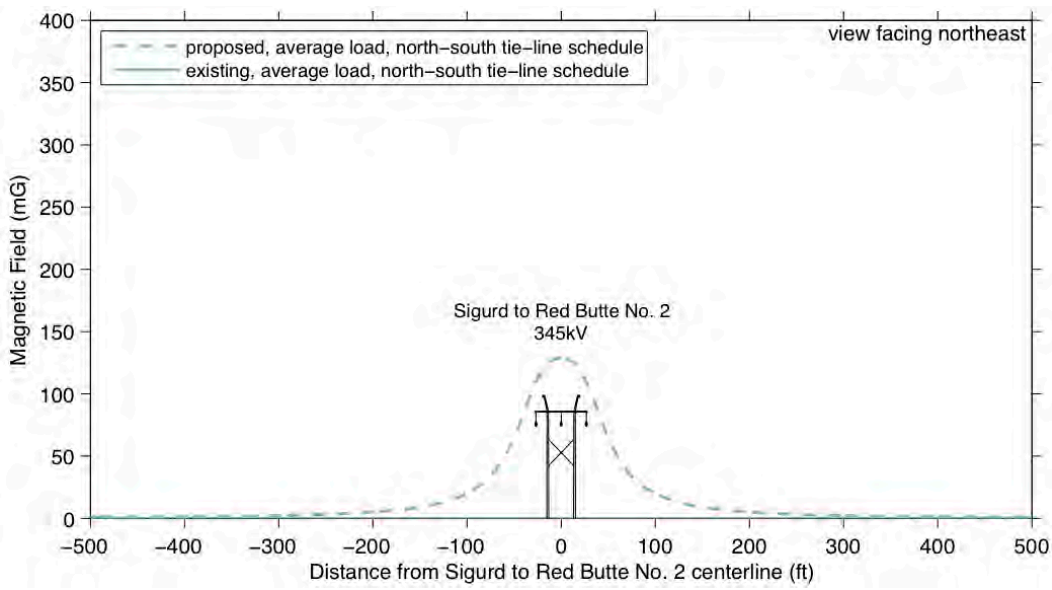
No warranty is made by the BLM for use of the data for purposes not intended by the BLM.
This product may not meet BLM standards for accuracy and content.
Different data sources and input scales may cause some misalignment of data layers.

Appendix L – Calculated Electric and Magnetic Fields, Audible Noise Levels, and Radio Noise Levels

APPENDIX L – CALCULATED ELECTRIC AND MAGNETIC FIELDS, AUDIBLE NOISE LEVELS, AND RADIO NOISE LEVELS

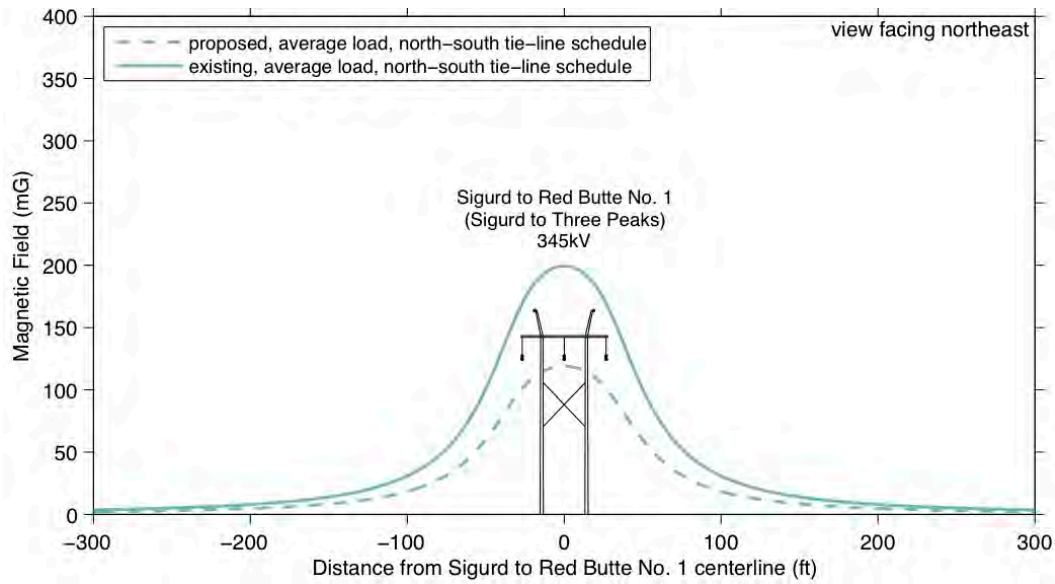
Appendix L contains diagrams (Figures L-1 through L-22) and tables (Tables L-1 through L-5) referenced in Chapter 3, Section 3.2.13, Public Health and Safety. Diagrams illustrate calculated profiles for electric and magnetic fields, audible noise, and radio noise modeled for five locations (modeled cross-sections 1 to 5). The diagrams represent the existing and proposed transmission line configurations on the alternative routes analyzed in this document. Tables L-1 to L-5 identify calculated magnetic field values for average- and peak-load conditions, electric field values, and audible noise for the modeled cross sections.

L.1 Magnetic Field Profiles



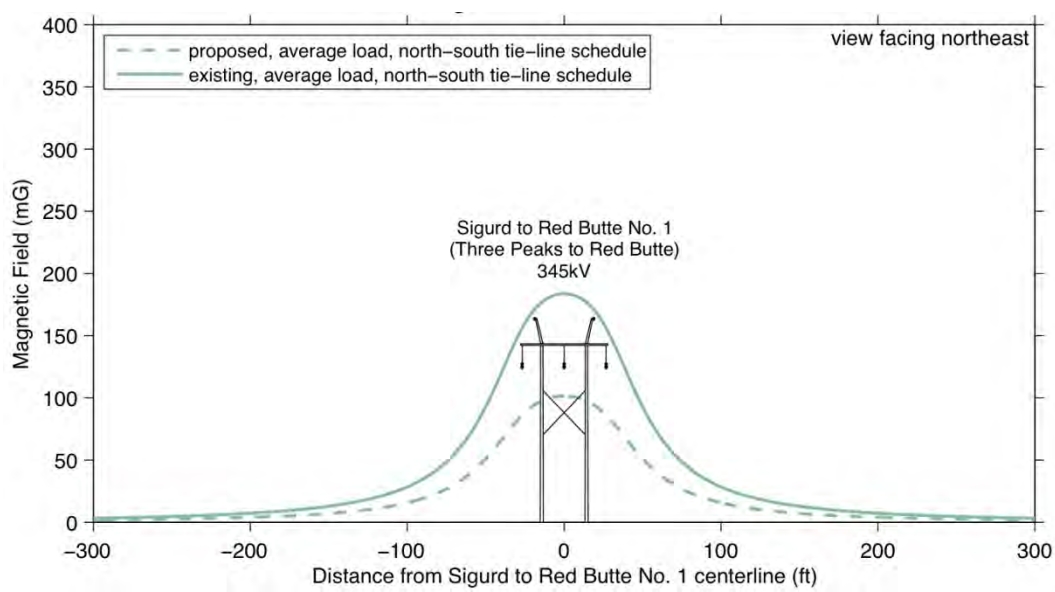
NOTE: Calculated magnetic field profile (resultant) under average-load conditions in cross-section 1 (refer to Modeled Cross Sections under Section 3.2.13.3). The proposed profile is calculated based on the anticipated 2014 load carried by the proposed 345-kilovolt (kV) circuit.

Figure L-1 Calculated Magnetic Field, Average Load in Cross-section 1



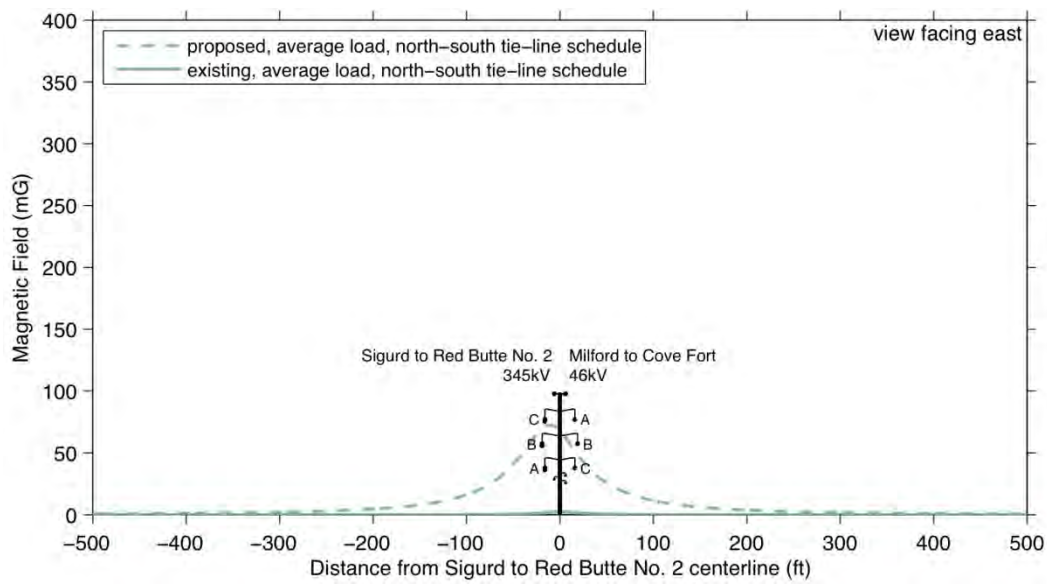
NOTE: Calculated magnetic field profiles (resultant) under average-load conditions for a representative H-frame span on the route of the existing Sigurd to Three Peaks 345kV transmission line. The existing profile is calculated based on the anticipated 2014 load carried by the existing 345kV circuit before the Sigurd to Red Butte No. 2 – 345kV Transmission Project (Project) is operational. In the 2014 proposed configuration, the anticipated load decreases when the Project is operational.

Figure L-2 Calculated Magnetic Field, Average Load for Existing Sigurd to Three Peaks 345kV Line



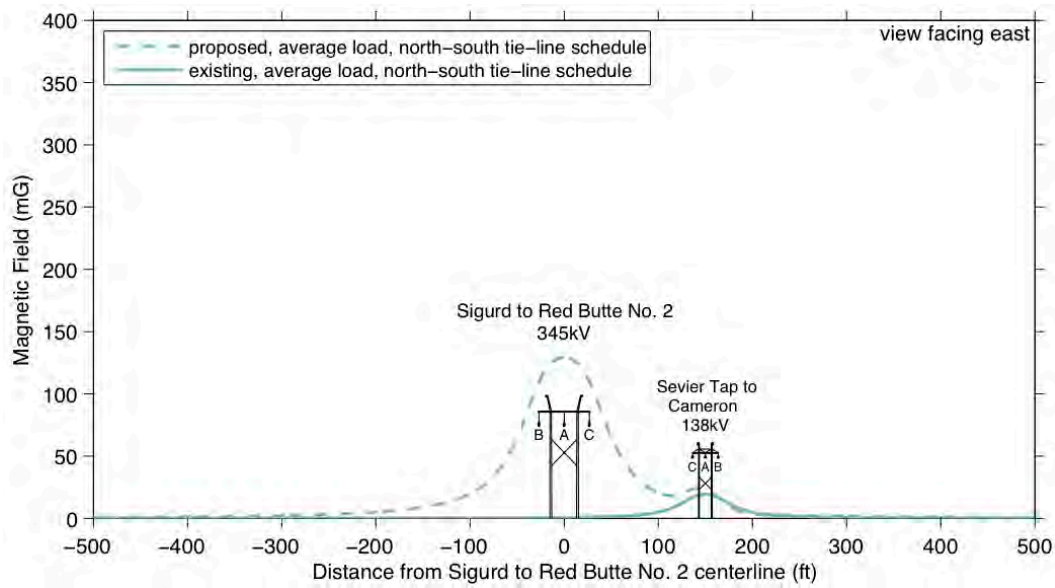
NOTE: Calculated magnetic field profiles (resultant) under average-load conditions for a representative H-frame span on the route of the existing Three Peaks to Red Butte 345kV transmission line. The existing profile is calculated based on the anticipated 2014 load carried by the existing 345kV circuit before the Project is operational. In the 2014 proposed configuration, the anticipated load decreases when the Project is operational.

Figure L-3 Calculated Magnetic Field, Average Load for Existing Three Peaks to Red Butte 345kV Line



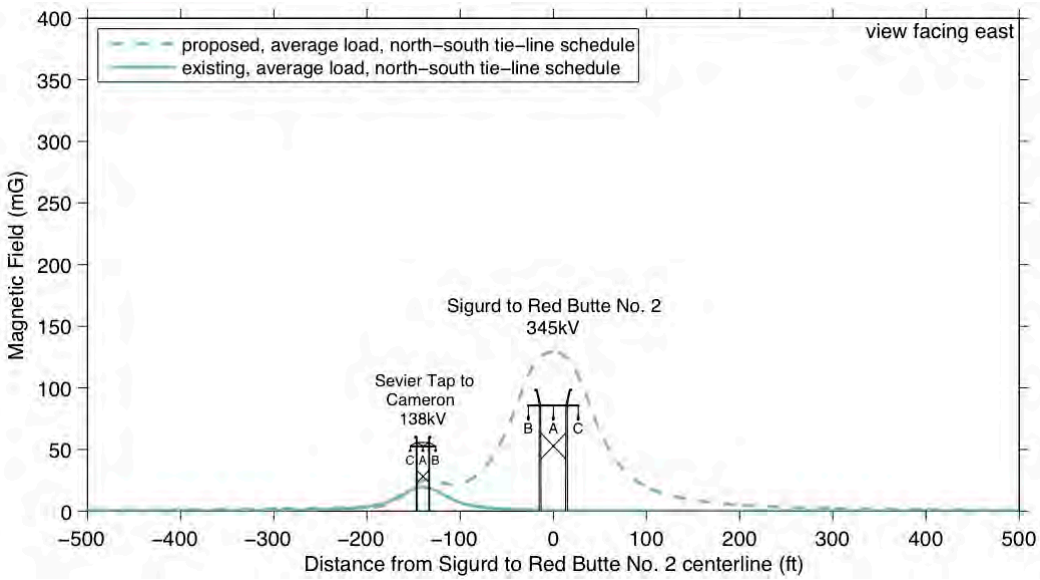
NOTE: Calculated magnetic field profile (resultant) under average-load conditions in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.13.3). The existing profile is calculated based on the anticipated 2014 load carried by the existing Milford to Cove Fort 46kV circuit before the Project is operational.

Figure L-4 Calculated Magnetic Field, Average Load in Cross-section 2



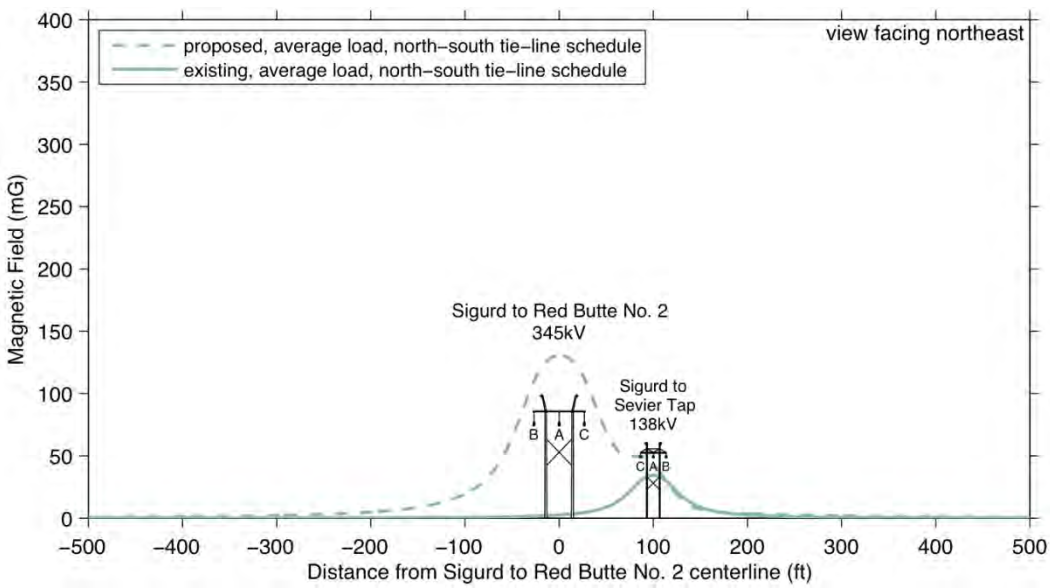
NOTE: Calculated magnetic field profiles (resultant) under average-load conditions in modeled cross-section 3 (refer to Modeled Cross Sections under Section 3.2.13.3). The existing profile is calculated based on the anticipated 2014 load carried by the existing Sevier Tap to Cameron 138kV circuit before the Project is operational.

Figure L-5 Calculated Magnetic Field, Average Load in Cross-Section 3



NOTE: Calculated magnetic field profiles (resultant) under average-load conditions in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.13.3). The existing profile is calculated based on the anticipated 2014 load carried by the existing Sevier Tap to Cameron 138kV circuit before the Project is operational.

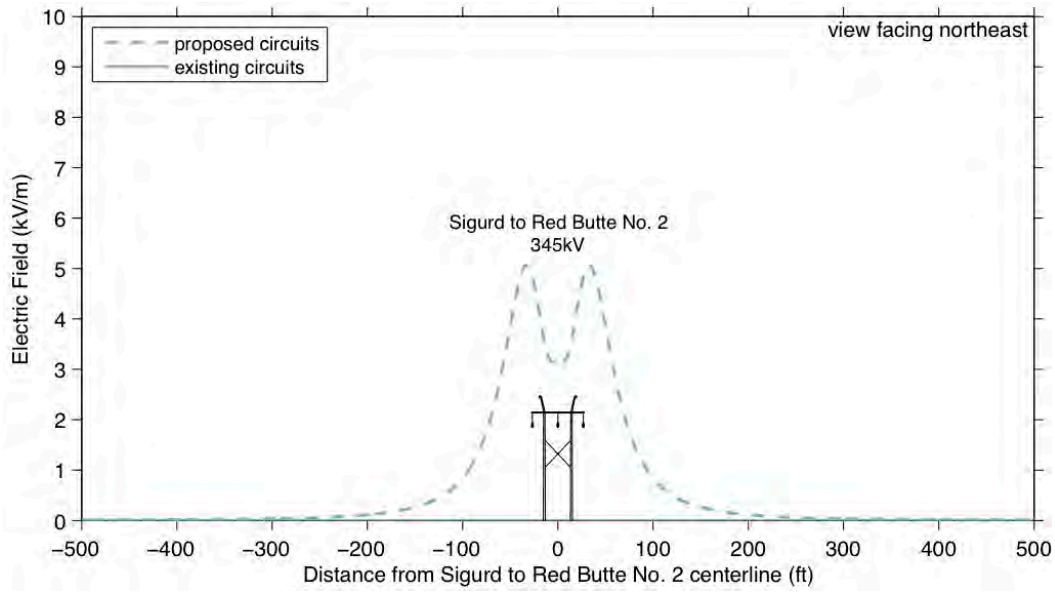
Figure L-6 Calculated Magnetic Field, Average Load in Cross-section 4



NOTE: Calculated magnetic field profiles (resultant) under average-load conditions in modeled cross-section 5 (refer to Modeled Cross Sections under Section 3.2.13.3). The existing profile is calculated based on the anticipated 2014 load carried by the existing Sigurd to Sevier Tap 138kV circuit before the Project is operational.

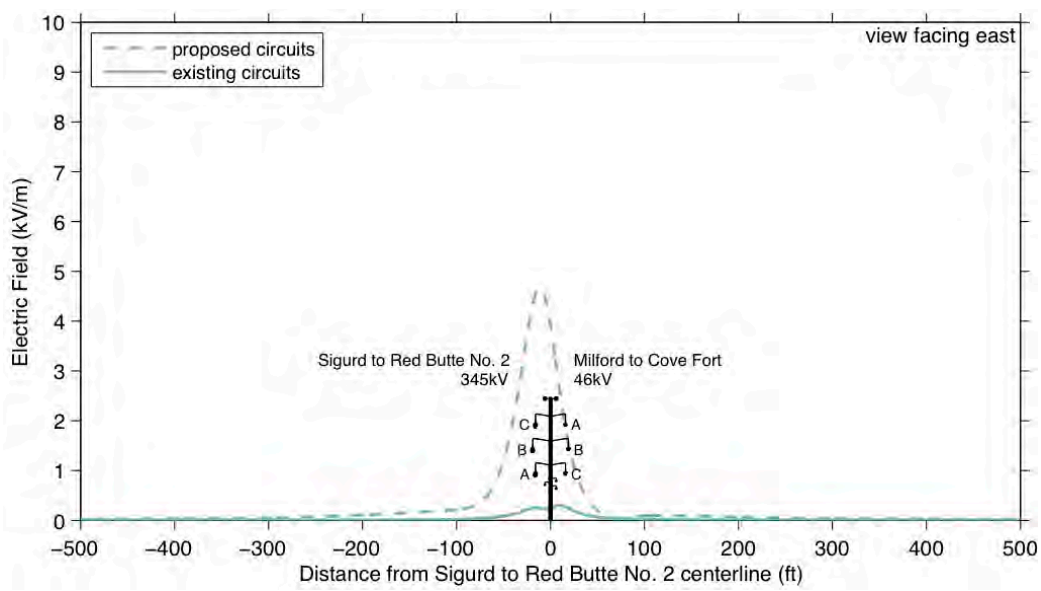
Figure L-7 Calculated Magnetic Field, Average Load in Cross-section 5

L.2 Electric Field Profiles



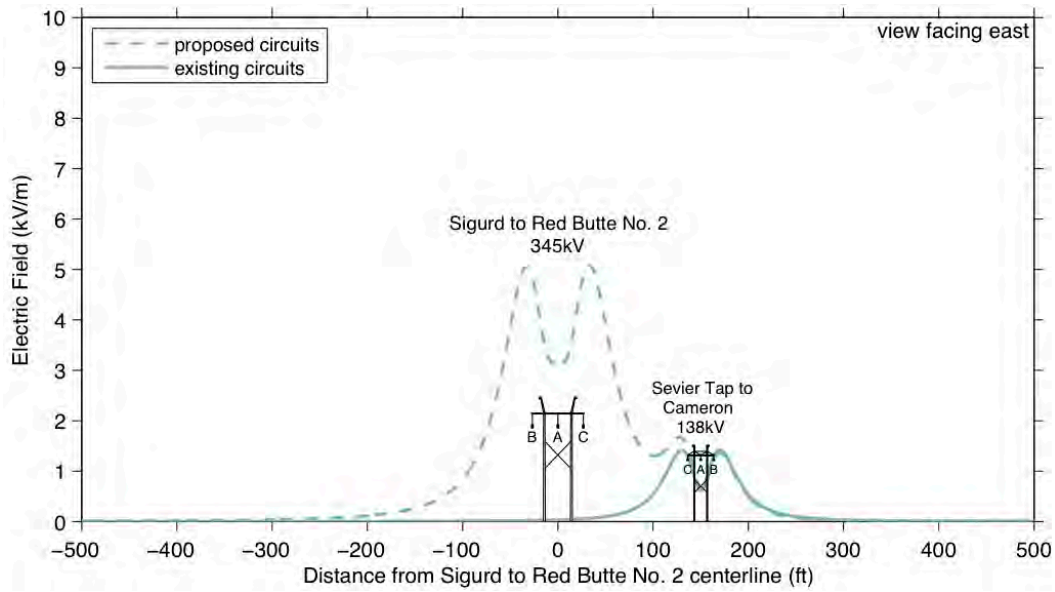
NOTE: Calculated electric field profile in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.13.3).

Figure L-8 Calculated Electric Field in Cross-section 1



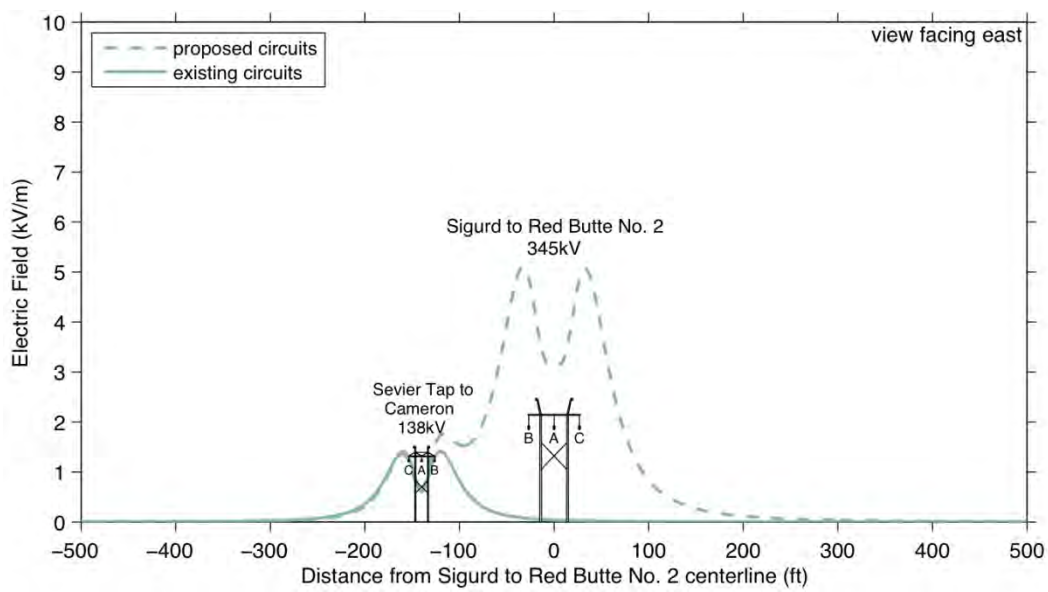
NOTE: Calculated electric field profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-9 Calculated Electric Field in Cross-section 2



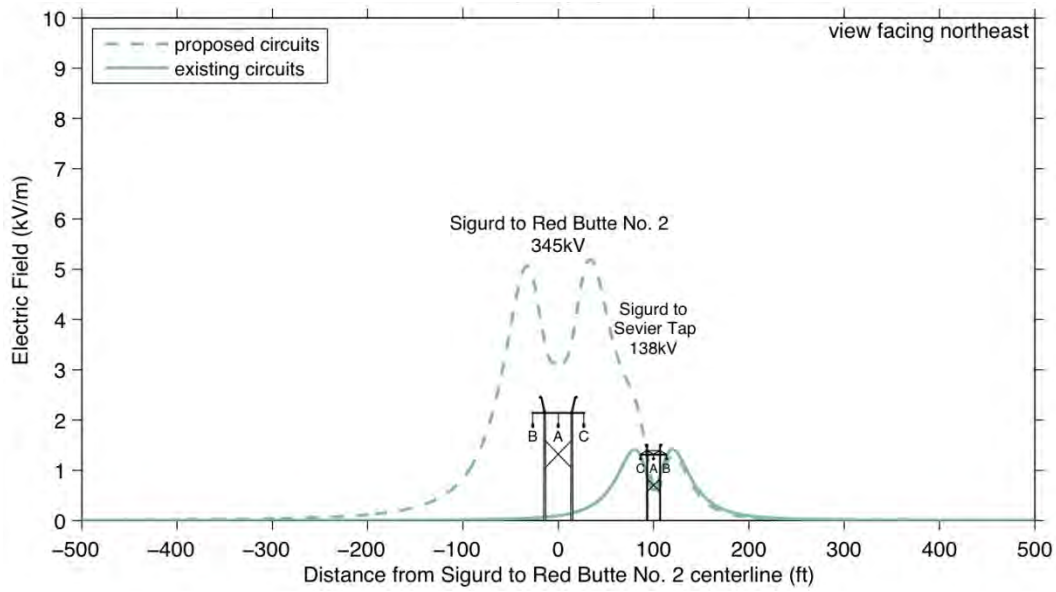
NOTE: Calculated electric field profiles in modeled cross-section 3 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-10 Calculated Electric Field in Cross-section 3



NOTE: Calculated electric field profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

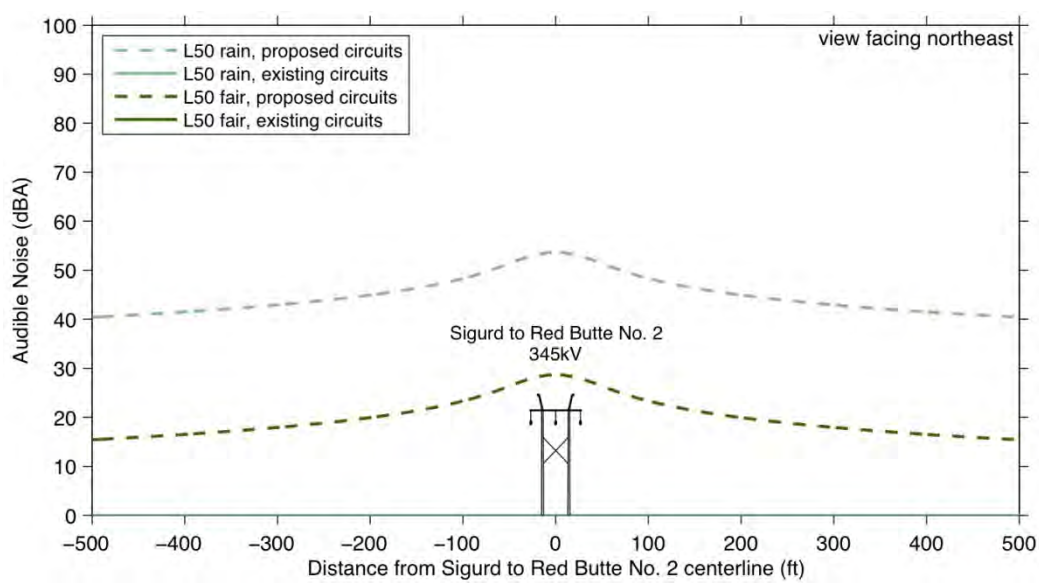
Figure L-11 Calculated Electric Field in Cross-section 4



NOTE: Calculated electric field profiles in modeled cross-section 5 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

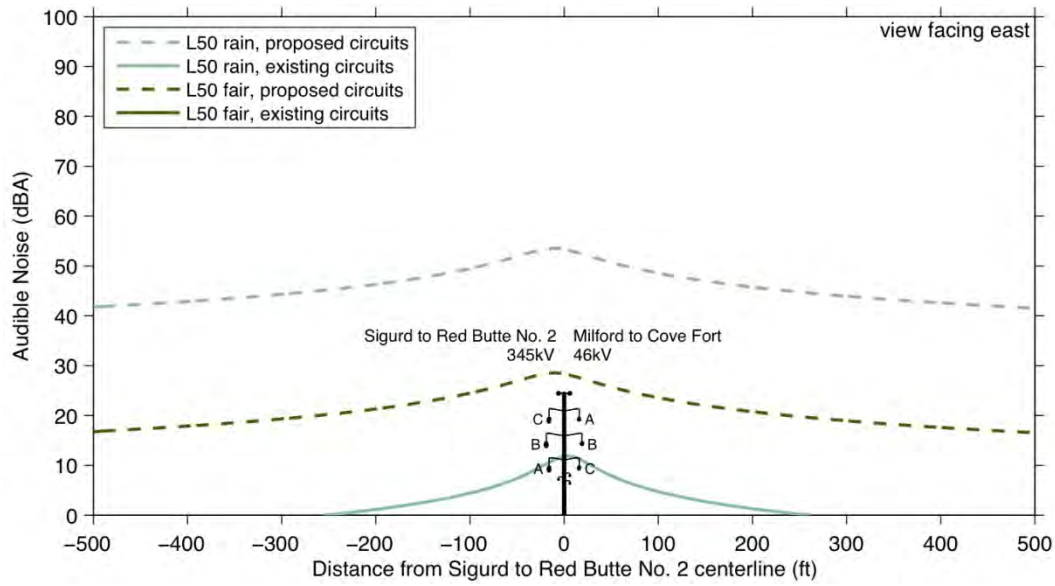
Figure L-12 Calculated Electric Field in Cross-section 5

L.3 Audible Noise Profiles



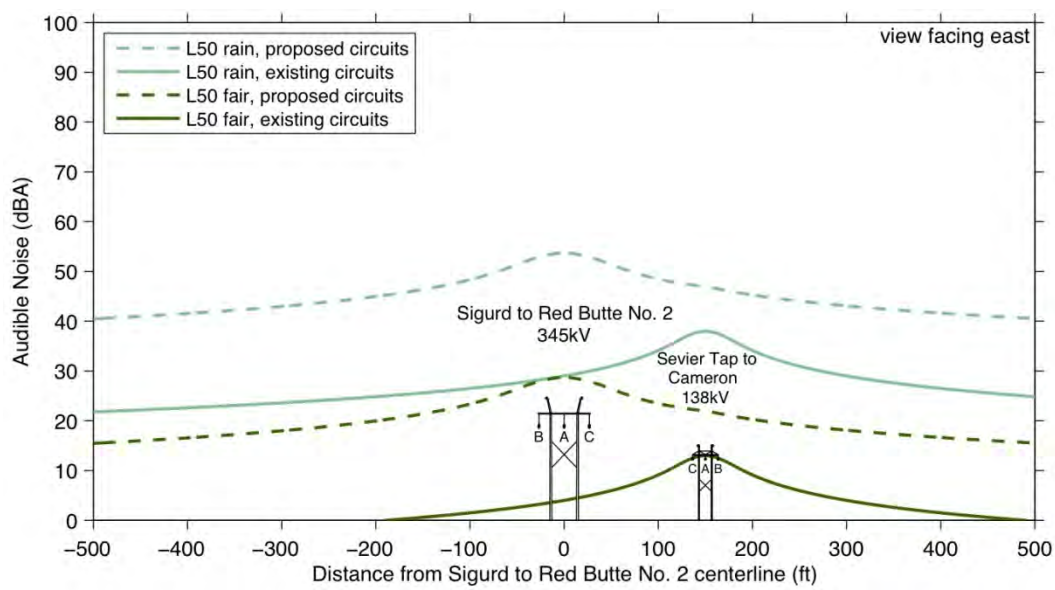
NOTE: Calculated audible noise profiles in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.13.3).

Figure L-13 Calculated Audible Noise in Cross-section 1



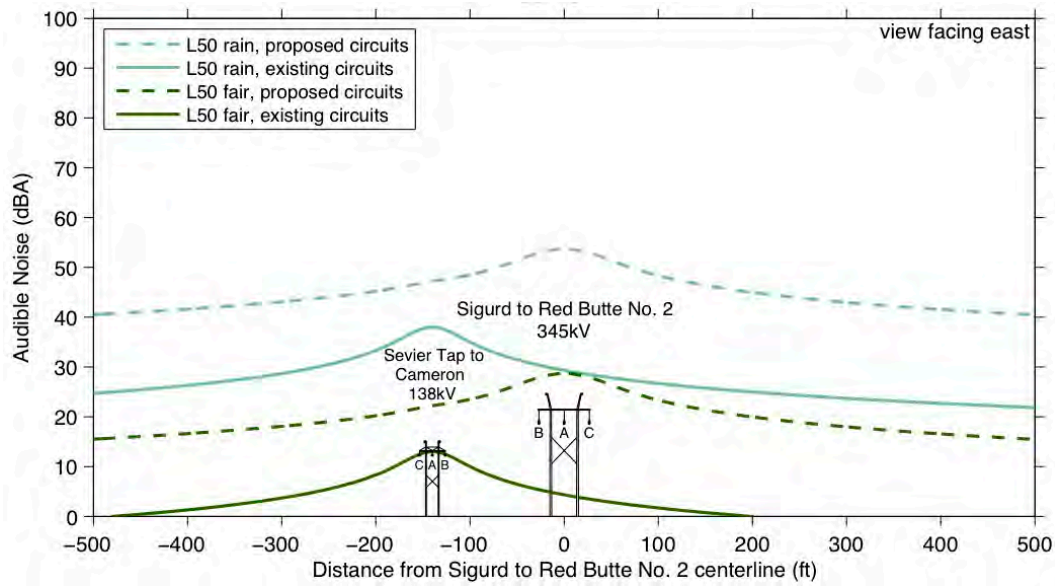
NOTE: Calculated audible noise profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-14 Calculated Audible Noise in Cross-section 2



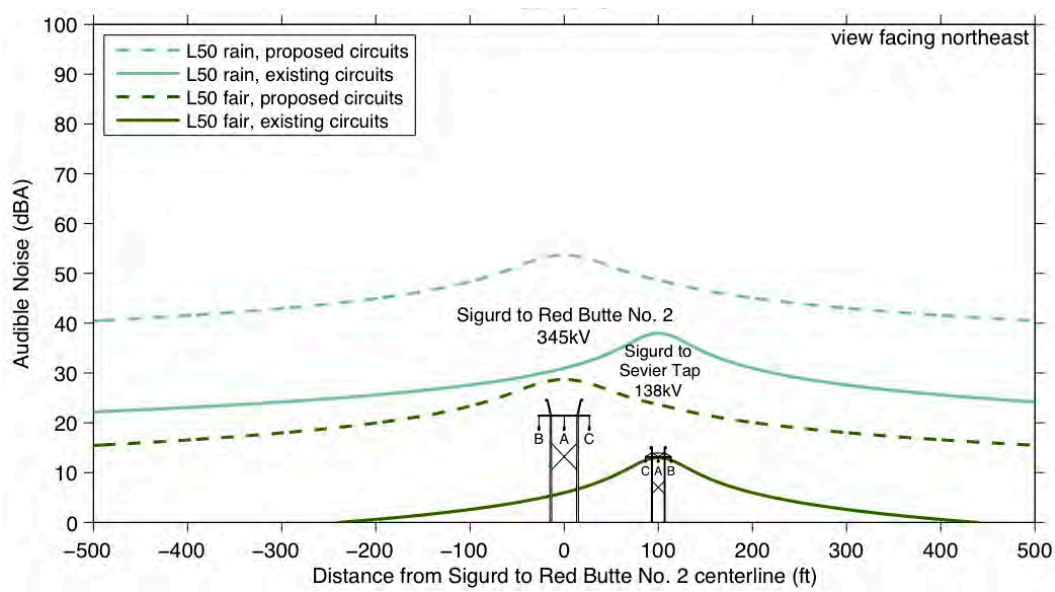
NOTE: Calculated audible noise profiles in modeled cross-section 3 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-15 Calculated Audible Noise in Cross-section 3



NOTE: Calculated audible noise profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.13.3), before and after operation of the Project.

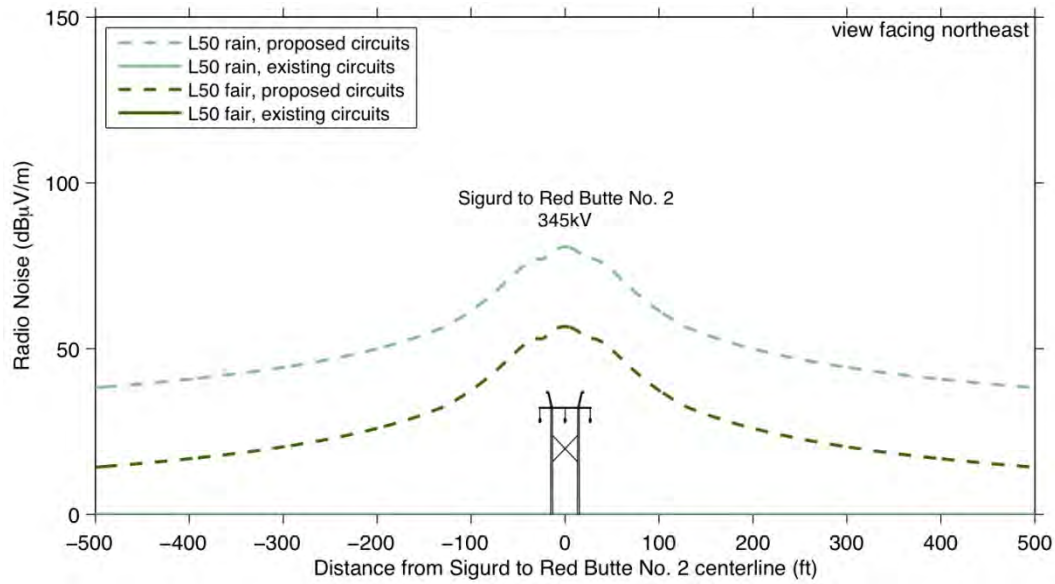
Figure L-16 Calculated Audible Noise in Cross-section 4



NOTE: Calculated audible noise profiles in modeled cross-section 5 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

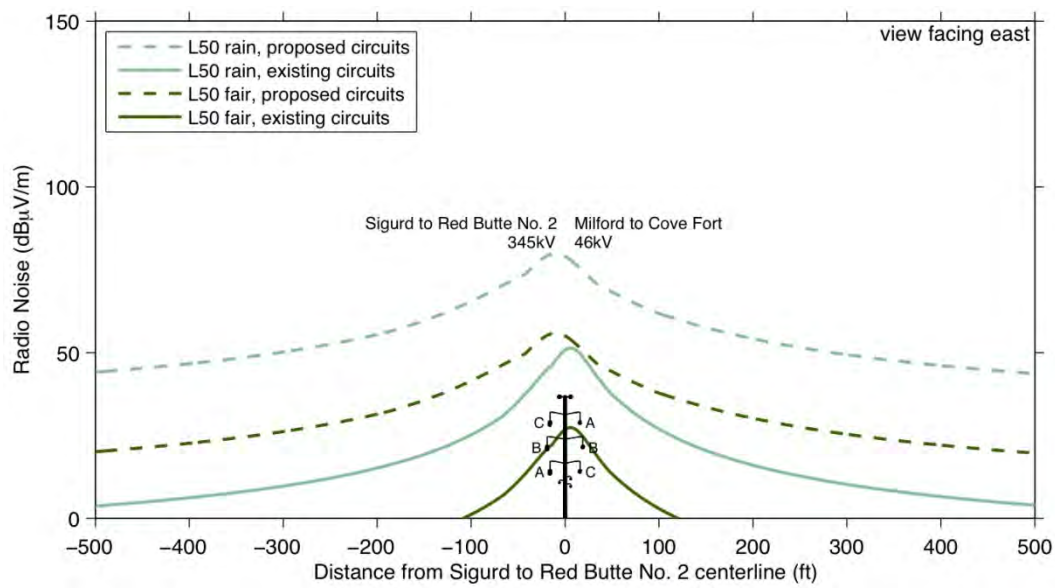
Figure L-17 Calculated Audible Noise in Cross-section 5

L.4 Radio Noise Profiles



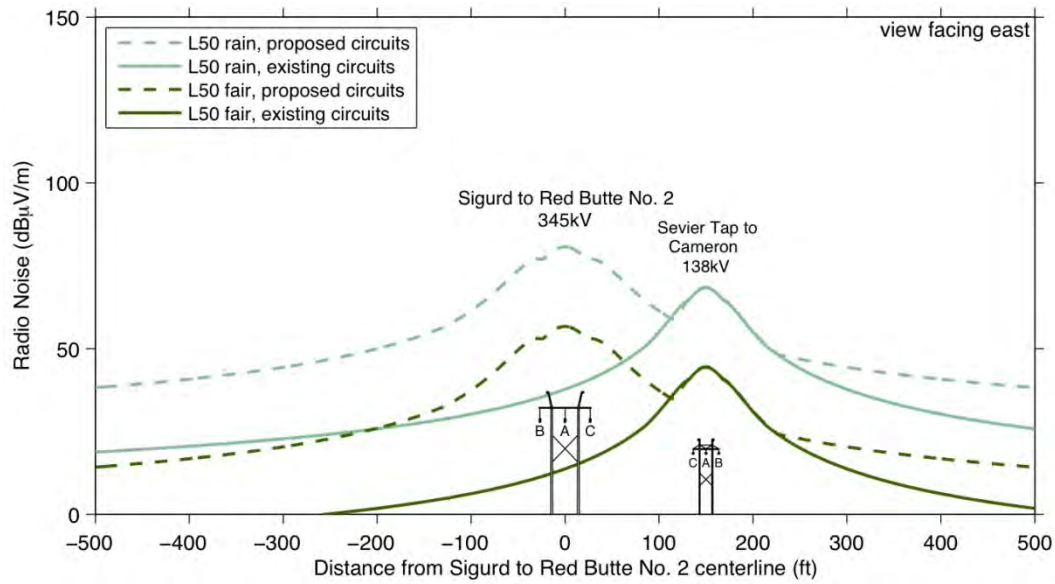
NOTE: Calculated radio noise profiles in modeled cross-section 1 (refer to Modeled Cross Sections under Section 3.2.13.3).

Figure L-18 Calculated Radio Noise in Cross-section 1



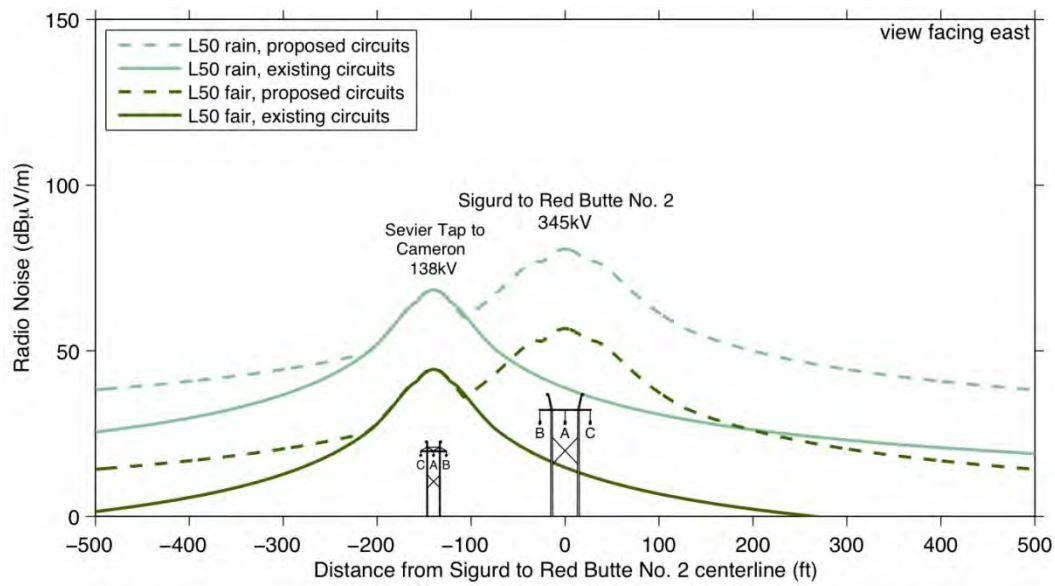
NOTE: Calculated radio noise profiles in modeled cross-section 2 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-19 Calculated Radio Noise in Cross-section 2



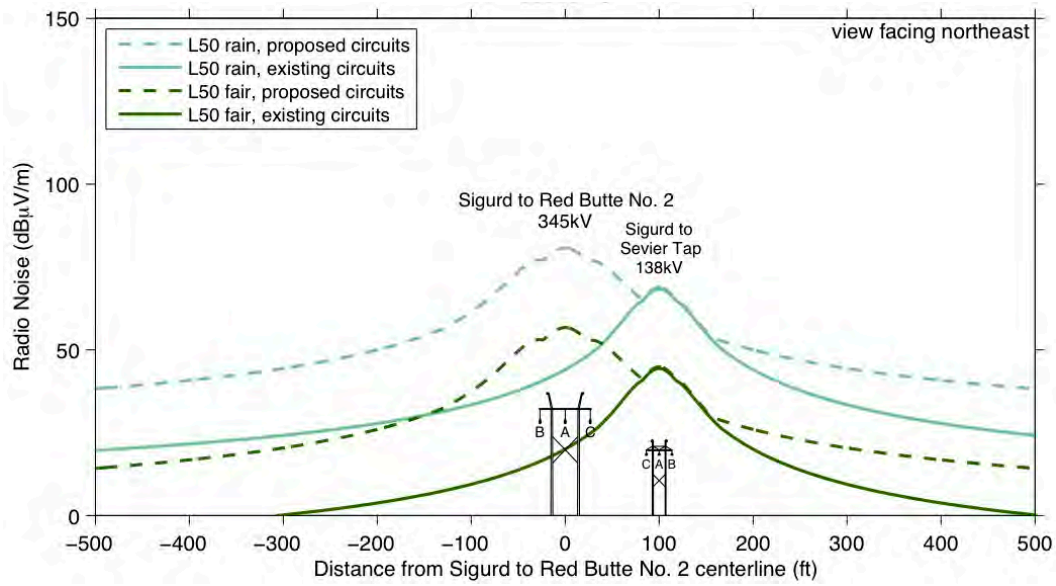
NOTE: Calculated radio noise profiles in modeled cross-section 3 before and after operation of the Project.

Figure L-20 Calculated Radio Noise in Cross-section 3



NOTE: Calculated radio noise profiles in modeled cross-section 4 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-21 Calculated Radio Noise in Cross-section 4



NOTE: Calculated radio noise profiles in modeled cross-section 5 (refer to Modeled Cross Sections under Section 3.2.13.3) before and after operation of the Project.

Figure L-22 Calculated Radio Noise in Cross-section 5

L.5 Summary of Calculated Values

TABLE L-1
CALCULATED MAGNETIC FIELD VALUES (MILLIGAUS) FOR AVERAGE-LOAD CONDITIONS

Section	Description	Case[1]	Location[2]				
			100 Feet Beyond Negative Right-of-way Edge	Negative Right-of-way Edge	Max on Right-of-way	Positive Right-of-way Edge	100 Feet Beyond Positive Right-of-way Edge
1	Sigurd to Red Butte No. 2 – 345kV	Existing	–	–	–	–	–
	Links 25, 45, 64, 63, 349, 390, 475, 395, 396, 397, 163, 444, 441, 221, 220	Proposed	6.6	34.0	128.9	34.0	6.6
2	Double-circuit 345kV/46kV	Existing	0.1	0.3	2.4	0.3	0.1
	Link 75	Proposed	6.0	24.9	72.5	16.6	4.7
3	Sevier Tap to Cameron 138kV south	Existing	0.1	0.3	19.4	2.4	0.5
	Link 66	Proposed	6.5	33.9	129.3	2.5	1.6
4	Sevier Tap to Cameron 138kV north	Existing	0.5	2.4	19.4	0.3	0.1
	Link 66	Proposed	1.7	2.7	129.3	33.8	6.5
5	Sigurd to Sevier Tap 138kV east	Existing	0.3	0.8	34.5	4.3	0.8
	Link 30	Proposed	6.4	33.5	130.6	4.6	2.1
_[3]	Sigurd to Red Butte No. 1 – 345kV	Existing	10.3	52.7	199.5	52.7	10.3
	(Sigurd to Three Peaks 345kV circuit)	Proposed	6.1	31.4	118.9	31.4	6.1
_[4]	Sigurd to Red Butte No. 1 – 345kV	Existing	9.5	48.5	183.8	48.5	9.5
	(Three Peaks to Red Butte 345kV circuit)	Proposed	5.2	26.8	101.4	26.8	5.2

NOTES:
[1]The "existing" case refers to the present configuration of transmission lines with average projected load in 2014 for a north-to-south tie line schedule (i.e., export to the NV Energy southern system). The "proposed" case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.
[2]In cross-section 1, the proposed Sigurd to Red Butte No. 2 – 345kV line is modeled in the center of a proposed 150-foot right-of-way, with right-of-way edges at plus or minus 75 feet. In other cross-sections, the tabulated "right-of-way edge" values are reported at 75 feet beyond the outermost centerline within the section.
[3]Not on Project route. Fields in the vicinity of existing circuits lowered
[4]Not on Project route.
kV = Kilovolt

TABLE L-2
CALCULATED MAGNETIC FIELD VALUES (MILLIGAUS) FOR PEAK-LOAD CONDITIONS

Section	Description	Case[1]	Location[2]				
			100 Feet Beyond Negative Right-of-way Edge	Negative Right-of-way Edge	Max on Right-of-way	Positive Right-of-way Edge	100 Feet Beyond Positive Right-of-way Edge
1	Sigurd to Red Butte No. 2 – 345kV	Existing	–	–	–	–	–
	Links 25, 45, 64, 63, 349, 390, 475, 395, 396, 397, 163, 444, 441, 221, 220	Proposed	10.9	58.8	260.9	58.8	10.9
2	Double-circuit 345kV/46kV	Existing	0.1	0.3	2.5	0.3	0.1
	Link 75	Proposed	10.0	43.8	151.4	29.0	7.9
3	Sevier Tap to Cameron 138kV south	Existing	0.2	0.4	26.5	3.3	0.6
	Link 66	Proposed	10.8	58.6	261.3	4.6	2.7
4	Sevier Tap to Cameron 138kV north	Existing	0.6	3.3	26.5	0.4	0.2
	Link 66	Proposed	3.0	5.5	261.4	58.5	10.8
5	Sigurd to Sevier Tap 138kV east	Existing	0.4	1.0	41.6	5.2	1.0
	Link 30	Proposed	10.6	58.1	262.6	7.3	3.6
–[3]	Sigurd to Red Butte No. 1 – 345kV	Existing	17.0	91.7	407.0	91.7	17.0
	(Sigurd to Three Peaks 345kV circuit)	Proposed	9.9	53.3	236.6	53.3	9.9
–[3]	Sigurd to Red Butte No. 1 – 345kV	Existing	16.5	88.9	394.6	88.9	16.5
	(Three Peaks to Red Butte 345kV circuit)	Proposed	8.7	46.9	208.1	46.9	8.7

NOTES:
[1]The "existing" case refers to the present configuration of transmission lines with average projected load in 2014 for a north-to-south tie line schedule (i.e., export to the NV Energy southern system). The "proposed" case refers to the same load conditions, with all transmission facilities proposed as part of the Project in operation.
[2]In cross-section 1, the proposed Sigurd to Red Butte No. 2 – 345kV line is modeled in the center of a proposed 150-foot right-of-way, with right-of-way edges at plus or minus 75 feet. In other cross-sections, the tabulated "right-of-way edge" values are reported at 75 feet beyond the outermost centerline within the section.
[3]Not on Project route.
kV= Kilovolt

TABLE L-3
CALCULATED ELECTRIC FIELD VALUES (kV/m)

Section	Description	Case	Location[1]		
			Negative Right-of-way Edge	Max on Right-of-way Conductor Height: Average (minimum[2])	Positive Right-of-way Edge
1	Sigurd to Red Butte No. 2 – 345kV	Existing	–	–	–
	Links 25, 45, 64, 63, 349, 390, 475, 395, 396, 397, 163, 444, 441, 221, 220	Proposed	1.76	5.07 (6.50)	1.76
2	Double-circuit 345kV/46kV	Existing	0.04	0.3	0.03
	Link 75	Proposed	0.36	4.67 (6.06)	0.04
3	Sevier Tap to Cameron 138kV south	Existing	0.01	1.42	0.21
	Link 66	Proposed	1.76	5.10 (6.53)	0.18
4	Sevier Tap to Cameron 138kV north	Existing	0.21	1.42	0.01
	Link 66	Proposed	0.17	5.11 (6.54)	1.76
5	Sigurd to Sevier Tap 138kV east	Existing	0.02	1.42	0.21
	Link 30	Proposed	1.76	5.19 (6.62)	0.16

NOTES:
[1]In cross-section 1, the proposed Sigurd to Red Butte No. 2 – 345kV line is modeled in the center of a proposed 150-foot right-of-way, with right-of-way edges at plus or minus 75 feet. In other cross-sections, the tabulated "right-of-way edge" values are reported at 75 feet beyond the outermost centerline within the section.
[2]Tabulated values were calculated at average conductor height. At minimum conductor height, the maximum calculated electric field level in Sections 1–5 was 6.62kV per meter.
kV = Kilovolt

TABLE L-4
CALCULATED AUDIBLE NOISE (dBA), L_{50} FOUL WEATHER

Section	Description	Case	Location		
			Negative Right-of-way edge	Max on Right-of-way	Positive Right-of-way edge
1	Sigurd to Red Butte No. 2 – 345kV	Existing	–	–	–
	Links 25, 45, 64, 63, 349, 390, 475, 395, 396, 397, 163, 444, 441, 221, 220	Proposed	49.7	53.7	49.7
2	Double-circuit 345kV/46kV	Existing	5.7	11.8	6.1
	Link 75	Proposed	50.6	53.5	49.5
3	Sevier Tap to Cameron 138kV south	Existing	27.0	38.0	32.3
	Link 66	Proposed	49.7	53.7	44.6
4	Sevier Tap to Cameron 138kV north	Existing	32.3	38.0	27.2
	Link 66	Proposed	44.8	53.7	49.7

TABLE L-4
CALCULATED AUDIBLE NOISE (dBA), L_{50} FOUL WEATHER

Section	Description	Case	Location		
			Negative Right-of-way edge	Max on Right-of-way	Positive Right-of-way edge
5	Sigurd to Sevier Tap 138kV east	Existing	28.2	38.0	32.3
	Link 30	Proposed	49.7	53.7	45.7

NOTES:
dBA = Decibel (A-weighted)
kV = Kilovolt
L_{50} = Median sound level

TABLE L-5
CALCULATED RADIO NOISE (dBμV/m), L_{50} FAIR WEATHER

Section	Description	Case	Location[1]	
			Minus 100 Feet Beyond Outer Conductor	Minus 100 Feet Beyond Outer Conductor
1	Sigurd to Red Butte No. 2 – 345kV	Existing	–	–
	Links 25, 45, 64, 63, 349, 390, 475, 395, 396, 397, 163, 444, 441, 221, 220	Proposed	32.6	32.6
2	Double-circuit 345kV/46kV	Existing	0.3	2.0
	Link 75	Proposed	39.5	36.4
3	Sevier Tap to Cameron 138kV south	Existing	18.0	18.0
	Link 66	Proposed	32.6	22.1
4	Sevier Tap to Cameron 138kV north	Existing	18.0	18.0
	Link 66	Proposed	22.6	32.6
5	Sigurd to Sevier Tap 138kV east	Existing	18.0	18.0
	Link 30	Proposed	32.6	25

NOTES:
[1]In cross-section 1, the proposed Sigurd to Red Butte No. 2 – 345kV line is modeled in the center of a proposed 150-foot right-of-way, with right-of-way edges at plus or minus 75 feet. In other cross-sections, the tabulated "right-of-way edge" values are reported at 75 feet beyond the outermost centerline within the section.
dBμV/m = Decibels above 1 microvolt per meter
kV = Kilovolt
L_{50} = Median sound level

Appendix M – Public Comments on Draft Environmental Impact Statement

APPENDIX M – Public Comments on the Draft Environmental Impact Statement

M.1 Introduction and Background

Appendix M contains the comments received by the Bureau of Land Management (BLM) regarding the Draft Environmental Impact Statement (EIS) for the Sigurd to Red Butte No. 2 – 345-kilovolt (kV) Transmission Project, and the BLM's responses to those comments.

The BLM published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on May 27, 2011 (Volume 76, Number 103, pages 30962 and 30963). The Environmental Protection Agency (EPA) published a Notice of Availability of the Draft EIS for public review and comment in the *Federal Register* on June 3, 2011, which initiated a 45-day public comment period.

The availability of the Draft EIS, deadline for public comments, and locations, dates, and times of public meetings on the Draft EIS were announced in paid newspaper legal notices, paid newspaper advertisements, and project newsletters that were mailed to affected property owners, agencies, and stakeholders. Eighty-nine hard copies and 133 electronic copies of the Draft EIS were sent to federal, state, and local government agencies; institutions; organizations; and individuals for review and comment.

During the 45-day comment period, the BLM conducted four open-house meetings to provide the public with an opportunity to view informational displays on the project, discuss the project individually with BLM staff and representatives, and to provide comments on the Draft EIS. The public open houses were held on four consecutive days from June 27 through June 30, 2011. The open houses were held in Richfield, Milford, Enterprise, and St. George, Utah, respectively. A total of 81 people attended the public open houses. The majority of the attendees (34) attended the meeting in St, George, Utah, and were individuals residing in the communities located adjacent to the Dixie National Forest.

M.2 General Summary of Comments

During the 45-day comment period, 41 submittals offering comments on the Draft EIS were received from various federal, state, and local agencies; various special interest groups; and public citizens. This included 17 emails, 7 letters, 10 comment forms with comments submitted at the public open house meetings, and 7 comment forms with comments mailed to the BLM. A list of agencies, organizations, and individuals who commented on the Draft EIS is presented in Table M-1.

TABLE M-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON DRAFT EIS

Submittal Number	Name/Affiliation
1	National Trust for Historic Preservation
2	National Park Service
3	U.S. Fish and Wildlife Service – Utah Field Office
4	Environmental Protection Agency – Region 8
5	Millard County
6	Enterprise City
7	Five County Association of Governments

TABLE M-1
GUIDE TO AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO PROVIDED WRITTEN COMMENTS ON DRAFT EIS

Submittal Number	Name/Affiliation
8	Iron County
9	Washington County
10	First Wind
11	Rocky Mountain Power
12	TransWest Express, LLC
13	Utah Environmental Congress
14	Southern Utah Wilderness Alliance
15	Sportsmen for Fish & Wildlife, Dixie Chapter Committee
16	Citizens for Dixie's Future
	Mountain Meadows Association
17	Mountain Meadows Massacre Descendents
	The Church of Jesus Christ of Latter-Day Saints
18	Jason Gubler
19	Peggy Gubler
20	Kirk Harrison
21	Jim and Marilyn Lurth
22	Gordon Poppitt
23	Gordon Poppitt
24	Norma and Richard Querio
25	Cody Staheli
26	Laurence Staheli
27	Ilo and Joyce Twitchell
28	Gay Utley
29	L.D. and Joyce Winder
	Michael Flanery
	Victoria George
30	Robert and Susan Gray
31	Anchalee Jaidee
32	LaVeryl Porter
33	Guy and Mary Ritchey
34	Seth Stinson
35	Arleen Tolman
36	Reuben Tolman
	Jack Werts

In compliance with the requirements of Council on Environmental Quality regulations for implementing National Environmental Policy Act (NEPA), all substantive comments received were assessed and a response provided. Of the 41 comment submittals received, 180 comments received in 36 comment submittals were identified as substantive according to BLM guidelines (BLM's NEPA Handbook, H-1790-1, January 2008). Most individual comment submittals had multiple comments. The handbook defines substantive comments as doing one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis
- Present new information relevant to the analysis
- Present reasonable alternatives other than those analyzed in the EIS
- Cause changes or revisions in one or more of the alternatives

Comments not considered substantive include those:

- In favor of or against the proposed action or alternatives without reasoning that meet the BLM's definition of substantive comments
- Only agreeing or disagreeing with BLM policy or resource decisions without justification or supporting data that meet the BLM's definition of substantive
- Pertaining to the Project area or Project
- Taking the form of vague, open-ended questions

Submittals containing substantive comments on the Draft EIS are reproduced in full and presented at the end of this appendix—categorized by federal agencies, state agencies, local agencies, special interest groups, and individuals. Each substantive comment within a submittal is bracketed in the left margin and labeled with a letter, which corresponds with the BLM's response on the right side of the page. Comments received on the Draft EIS fall into the categories presented in Table M-2.

M.2.1 Issues and Key Comments

Table M-2 indicates the number of substantive comments received (185 comments received in 41 comment submittals) by issue. The final column indicates the percentage of comments for each issue in relation to the total number of substantive comments received.

TABLE M-2
COMMENTS BY ISSUE

Issue	Number of Comments	Percent of Total
Alternatives identification and analysis	48	25.9
Biological resources (including vegetation)	28	15.6
Adequacy of the Draft Environmental Impact Statement	28	15.1
Cultural resources	17	9.4
Climate and air quality	14	7.8
Land use and recreation resources	14	7.8
Visual resources	12	6.7
Public health and safety	9	5.0
Water resources	8	4.4
Social and economic conditions	2	1.1
Other issues	4	2.2
Wildland fire ecology and management	1	0.6
Total	**185**	**100.0**

Provided below is a summary description of the comments on these issues.

M.2.1.1 Alternative Identification and Analysis

The greater part of the comments (25.9 percent) were received from respondents either supporting or opposing an alternative route(s). Comments were received from the National Trust for Historic Preservation and the National Park Service supported agency selection of the Proponent's preferred route. The U.S. Fish and Wildlife Service also indicated preference for Alternative N1 (Black Rock Road to Intermountain Power Project north of Milford Wind Farm). Washington County urged selection of Alternative S3 (Ox Valley). Comments also were received from respondents residing Pinto Valley opposing the Proponent's preferred route.

The Proponent and National Park Service both provided comments related to consideration of an alternative route variation, made up of a combination of Alternatives S2 and S4, in the analysis to be presented in the Final EIS. The Proponent stressed the potential effects on system reliability associated with this route variation.

M.2.1.2 Biological Resources

Comments (15.6 percent) were received expressing concern about the impacts of construction, operations, and maintenance of the transmission line on biological resources. The U.S. Fish and Wildlife expressed concern about potential impacts on vegetation communities, riparian habitats, and various wildlife species and their habitats, including raptors and other migratory birds, the Utah prairie dog, Greater sage-grouse, and others species. First Wind Corporation provided comments on the potential for cumulative impacts on eagles and other raptors related to the colocation of wind and transmission facilities.

M.2.1.3 Adequacy of the Draft EIS

Comments (12.8 percent) questioned the adequacy of the analysis presented in the Draft EIS. Comments generally expressed what the commenter believed to be incomplete or incorrect data presented in the Draft EIS or questioned the methods used in analysis of the alternatives. For example, the National Trust for Historic Preservation and the National Park Service called for modifications of the methodology used to assess potential impacts on nationally significant cultural resources, including the Mountain Meadows Massacre Site National Historic Landmark and possible segments of the Old Spanish National Historic Trail. The EPA provided a comment suggesting modifications and additional analysis of impacts on air quality. The U.S. Fish and Wildlife requested additional analysis of impacts on raptor species. The Southern Utah Wilderness Alliance (SUWA) and the Utah Environmental Congress called for quantitative analysis of impacts on climate change and raised issue with the visual resource inventory data used in the analysis of visual impacts on the Dixie and Fishlake National Forests. A representative from TransWest Express LLC opined that if a new hybrid alternative was analyzed in the Final EIS, a supplemental EIS should be required. The representative also suggested that the cumulative effects analysis include effects on the White House's renewable resource domestic energy goals and consider impacts on the goals and objectives and project costs and schedule of the TransWest Express Transmission Project if they are not granted their proposed action route currently being considered in preparation of the administrative Draft EIS for the TransWest Express project.

M.2.1.4 Cultural Resources

Comments (9.4 percent) were received expressing concern on nationally significant cultural resources. Refer to Section M.2.1.3.

M.2.1.5 Climate and Air Quality

Comments (7.8 percent) were received on impacts of construction activities on air quality. EPA provided a comment recommending the Plan of Development include implementation of mitigation measures committed to in the EIS for effectively addressing airborne dust impacts. Millard County commented on potential indirect impacts of surface disturbance of soils associated with construction activities in the area of the Milford Flat fire on fugitive dust levels in the county and associated public health issues. Utah

Environmental Conference and SUWA both submitted comments requesting analysis of potential impacts on climate change.

M.2.1.6 Land Use and Recreation Resources

Comments (7.8 percent) were received on how the alternative routes could potentially conflict with existing or future land uses, including conflicts with planned or proposed development in Beaver and Millard counties and conformance with county general plans, and expressed concern about impacts on private lands. First Wind Corporation provided new information on a planned expansion (Milford Wind Corridor, LLC Phase III) and proposed expansion (Milford Wind Corridor, LLC Phase IV) of their Milford wind facilities in Millard and Beaver counties.

M.2.1.7 Visual Resources

Comments on potential impacts on visual resources (6.7 percent) were received from residents in Pinto Valley and the community of Central. The National Trust for Historic Preservation and the National Park Service commented on potential visual impacts on nationally significant cultural resources, including the Mountain Meadows Massacre Site National Historic Landmark and possible segments of the Old Spanish National Historic Trail (NHT).

M.2.1.8 Public Health and Safety

Comments (5.0 percent) were received expressing concern about the health and safety of firefighters and emergency personnel. Refer to Section M.2.1.12.

M.2.1.9 Water Resources

Comments on water resources (4.4 percent) generally expressed what the commenter believed to potential impacts on ground or surface-water resources used for municipal water supply or agricultural or ranching operations.

M.2.1.10 Social and Economic Conditions

Comments on potential socioeconomic impacts (1.1 percent) were received from Millard and Washington counties. Some private landowners expressed concern over impacts on property values.

M.2.1.11 Other Issues

Several commenters (2.2 percent) recommended that BLM analyze the effects of each alternative on system reliability. SUWA suggested BLM must independently verify the information provided by the Proponent that justifies their purpose and need for the Project as well as the Proponents' preferred route. SUWA also commented that, if a route located outside of a designated or existing utility corridor is selected, they believed BLM should independently evaluate the data supporting that conclusion.

The Proponent also requested that additional information on Proponent-initiated public outreach activities be presented in the EIS.

M.2.1.12 Wildland Fire Ecology and Management

A few commenters (0.6 percent) expressed concern over increased risk of wildland fire during construction, the ability of firefighters and emergency personnel to manage and fight wildland fires due to the presence of the transmission line, particularly in Pinto Valley, and the health and safety of firefighters and emergency personnel.

Federal Agencies

COMMENT(S)

RESPONSE(S)

1 National Trust for Historic Preservation

Rebecca Schwendler <Rebecca_Schwendler@nthp.org>

07/15/2011 01:56 PM

To "utsrbproj@blm.gov" <utsrbproj@blm.gov>

cc "Byron_Loosle@blm.gov" <Byron_Loosle@blm.gov>, Nancy Brown <nbrown@achp.gov>, "Lhunsaker@Utah.gov" <Lhunsaker@Utah.gov>

bcc

Subject NTHP comments on Sigurd to Red Butte DEIS

Dear Ms. Gertsch,

Please accept the attached letter from the National Trust for Historic Preservation as our comments on the Sigurd to Red Butte Transmission Project DEIS. Thank you for considering our statements.

Rebecca

Rebecca H. Schwendler, PhD, RPA | Public Lands Advocate, Mountains/Plains Office National Trust for Historic Preservation | 535 16th Street, Suite 750, Denver, CO 80202
Phone: 303.623.1504 | Fax: 303.623.1508 | Email:rebecca_schwendler@nthp.org
|www.preservationnation.org

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1

COMMENT(S)

1 National Trust for Historic Preservation (continued)

NATIONAL TRUST FOR HISTORIC PRESERVATION

Mountains/Plains OFFICE

July 15, 2011

VIA E-MAIL (utsrbproject@blm.gov)

Ms. Tamara Gertsch
BLM Cedar City Field Office
Bureau of Land Management
176 East D.L. Sargent Drive
Cedar City, UT 84721

Re: Comments on the Sigurd to Red Butte Transmission Project Draft EIS

Dear Ms. Gertsch:

The National Trust for Historic Preservation appreciates the opportunity to submit comments on the Draft Environmental Impact Statement (DEIS) for the proposed Sigurd to Red Butte Transmission Project, prepared by the Bureau of Land Management (BLM). In general, the National Trust is supportive of energy-related projects, as long as the siting and development of such projects is compatible with the preservation and protection of historic and cultural resources. We also commend the BLM on using Class II cultural resource sample surveys to identify resources along previously inadequately inventoried alternatives. However, as discussed in this letter, the National Trust objects to one of the BLM's preferred alternative routes and to several of the other proposed alternatives. We are most concerned about those routes that will adversely affect the Mountain Meadows Massacre Site (recently nominated to be a National Historic Landmark) and segments of the Old Spanish National Historic Trail, although our concerns go beyond these resources. As we will describe in more detail below, we believe that to help avoid, or at least minimize, impacts to nationally significant cultural resources, the BLM should select a different preferred alternative. 1A

We are also a consulting party under Section 106 of the National Historic Preservation Act (NHPA) for the Sigurd to Red Butte Transmission Project and are involved in negotiations that will lead to a Programmatic Agreement (PA). Because of our participation in both National Environmental Policy Act (NEPA) and NHPA compliance for this project, we would like to ensure that decisions made in both processes do not conflict with one another and that, instead, they result in outcomes that protect historic properties.

Interests of the National Trust

The National Trust is a private, nonprofit organization chartered by Congress in 1949 to promote public participation in the preservation of our nation's heritage, and to further the historic preservation policy of the United States. 16 U.S.C. §§ 461, 468.

Mountains/Plains Office
535 16th Street, Suite 750
Denver, CO 80202
P 303.623.1504
F 303.623.1508
E mpro@nthp.org
Serving: CO, KS, MT, NE, SD, UT & WY

National Office
1785 Massachusetts Avenue, NW
Washington, DC 20036
P 202.588.6000
F 202.588.6038
E info@nthp.org
www.PreservationNation.org

RESPONSE(S)

1A The BLM and U.S. Forest Service (USFS) did not identify an Agency Preferred Alternative in the Draft EIS. In the Final EIS, BLM has identified Alternatives N2-A and S7-A as the Agency Preferred Alternative.

COMMENT(S)

1 National Trust for Historic Preservation (continued)

Ms. Tamara Gertsch
Bureau of Land Management
July 15, 2011
Page 2 of 5

With the strong support of more than 100,000 members, the National Trust works to protect significant historic sites and to advocate historic preservation as a fundamental value in programs and policies at all levels of government. The National Trust has nine regional and field offices, including the Mountains/Plains Regional Office, which is responsive to issues in Utah. The National Trust also has an active Public Lands Program, staffed partly out of the Mountains/Plains Office, with dedicated, experienced staff focused on ensuring that cultural resources located on federal public lands are adequately managed for their protection and preservation. In addition, the Chairman of the National Trust has been designated by Congress as a member of the Advisory Council on Historic Preservation, which is responsible for assisting other federal agencies in complying with Section 106 of the National Historic Preservation Act. See 16 U.S.C. § 470i(a)(8).

The National Trust has actively participated in several NEPA and NHPA processes affecting cultural resources in Utah. For example, we listed Nine Mile Canyon on the National Trust's *11 Most Endangered Historic Places* list in 2004 because of the impacts of oil and gas development traffic on the canyon's rock art. Subsequently, we commented on NEPA documents related to the project and we became a consulting party under Section 106 of the NHPA. In this capacity, we helped to craft a highly successful PA that addresses and prescribes measures to avoid impacts to the canyon's cultural resources from oil and gas development. Currently, the National Trust is a consulting party for the Gasco Uinta Basin Natural Gas Development Project on the West Tavaputs Plateau and the Recapture Canyon County Road Right-of-Way application in San Juan County. In addition, we recently submitted comments on the draft Solar Energy Development Programmatic EIS, which includes lands in Utah.

1. **One of the BLM's Environmentally Preferred Alternatives, and Several Other Alternatives, Could Cause Unacceptable Impacts to Nationally Significant Cultural Resources.**

1B As it is described in the DEIS, the BLM's environmentally preferred alternative for the southern half of the project area, Alternative S2, could have direct and/or indirect adverse effects on nationally significant cultural resources listed on or eligible for listing on the National Register of Historic Places (i.e., historic properties). First, Alternative S2 could have moderate to high visual impacts on the viewshed of the Mountain Meadows Massacre Site, which is already listed in the National Register as a Historic District, and portions of which have been nominated to become a National Historic Landmark (NHL). In fact, Alternative S2 is reported to have the "highest mileage through areas with high cultural resource sensitivity, in particular the highly sensitive Mountain Meadows Massacre Site." DEIS at 2-90.

While our comments in this letter pertain to NEPA, we would like to remind BLM that once NHL designation is completed, the BLM will be subject to 36 C.F.R. §800.10, which outlines additional requirements for undertakings that may directly or

RESPONSE(S)

1B While the BLM and USFS acknowledge the importance and sensitivity of the Mountain Meadows Historic Site, there were no additional federal protections, beyond the Section 106 of the National Historic Preservation Act (NHPA), guiding agency decisions on actions proposed adjacent to the site at the time the Draft EIS was published. The site was designated as a National Historic Landmark (NHL) on June 30, 2011, and the Final EIS has been revised to acknowledge the designation of the site as an NHL since the Draft EIS was published.

BLM and USFS recognize that NHLs are afforded special protection under Section 110(f) of the NHPA and that protection is codified in 36 CFR 800.10, *Special Requirements for Protecting National Historic Landmarks*. The law states that "the agency official, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly and adversely affected by an undertaking."

Further, as outlined in the Programmatic Agreement (described in Section 5.2.2.2 and presented in Appendix G), cultural resource sites that could potentially be visually sensitive were identified in preparation of the EIS (refer to Section 3.2.5.3). In accordance with Advisory Council on Historic Preservation guidelines, a visual effect must alter, directly or indirectly, a characteristic of that property that qualifies it for inclusion to the National Register of Historic Places (NRHP), and diminish that property's integrity of setting, feeling, and/or association.

Once an alternative route is selected, field visits to assess visual impacts on potentially visually sensitive sites will be conducted and the results documented in the Class III Technical Report. Prior to the field study, the methodology for this assessment will be reviewed by participants in the Programmatic Agreement (refer to Appendix G) and approved by the BLM.

If the agencies determine the Project will have an adverse effect on historic properties, including adverse effects on visually sensitive sites, Section 106 consultation will continue in order to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties (36 CFR 800.6). The resolution of adverse effects will be addressed in a comprehensive, project-specific Historic Properties Treatment Plan (HPTP) to be prepared and implemented in consultation with the BLM, Utah State Historic Preservation Officer (SHPO), other involved agencies, and consulting parties.

COMMENT(S)

1 National Trust for Historic Preservation (continued)

Ms. Tamara Gertsch
Bureau of Land Management
July 15, 2011
Page 3 of 5

indirectly harm any NHL. For example, 36 CFR §800.6(a)(1) and 800.10(c) require that the responsible federal agency request the participation of the Advisory Council on Historic Preservation in any consultation to resolve adverse effects o NHLs. In addition, 36 CFR §800.10(c) states that the responsible federal agency shall notify the Secretary of the Interior of any consultation involving an NHL and invite the Secretary to participate in the consultation where there may be an adverse effect. Furthermore, Section 110(f) of the NHPA requires that federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. The law requires that the responsible federal agency shall, "to
1C the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." Having the BLM select a project alternative through NEPA that appears to disregard this standard is of great concern.

Second, Alternative S2 could have moderate visual impacts on the Old Spanish National Historic Trail (Trail)—a unit of the National Landscape Conservation System (NLCS) and a nationally significant resource that is already threatened by adverse effects from the majority of transmission and renewable energy projects currently being developed in the West. While none of the segments of Trail in the project area
1D are currently listed in the National Register, the full length of the Trail in the area has not yet been thoroughly identified and inventoried, and high potential route segments may be present. The BLM should make a concerted effort to identify and evaluate the length of the Trail in the project's area of potential effect, regardless of whether physical swales and ruts are still visible; intact trail corridors and viewsheds are also significant and worth preserving. The nature of Old Spanish Trail use, in particular, did not always result in trail tread, but use corridors can be identified using journals, landmarks, and archaeological evidence.

Several other alternatives being considered for the southern half of the project area could, if selected, also lead to unacceptable adverse effects to nationally significant cultural resources. According to the table, Alternative S4 also would have low to moderate visual impacts on the Mountain Meadows Massacre Site and the Trail. In addition, Alternatives S2, S3, S4, and S6 would all have direct and/or indirect impacts on rare Paleoindian and Early Archaic archaeological sites, segments of the Trail, and
1E a variety of other historic properties. Alternatives N2 and N3 in the northern half of the project area also could have unacceptable impacts on rare and sensitive historic properties, including the National Register-listed Negro Mag and Wildhorse Canyon obsidian sources, rare Paleoindian and Early Archaic archaeological sites, rock art sites, Fremont sites, and sensitive prehistoric and historic burials and traditional cultural properties.

The BLM appears to marginalize these potential impacts to nationally significant *cultural* resources, despite the fact that under NEPA, federal agencies must consider effects on such resources in assessing the impact on the environment. As stated in the DEIS, "...significant long-term impacts resulting from implementation of the

RESPONSE(S)

1C See response to Comment 1B.

1D In preparation of the EIS, BLM and USFS consulted with members of the Old Spanish Trail Association and the National Park Service National Trails Office Intermountain Region to identify segments of historic trails within the Project's area of potential effect. BLM and USFS also conducted field visits to potential trail segments with representatives of the Old Spanish Trail Association. Potential impacts on potential trails segments identified in theses consultation efforts were considered in the EIS.

Further, as outlined in the Programmatic Agreement (described in Section 5.2.2.2 and presented in Appendix G), BLM and USFS will continue to consult with appropriate agencies, tribal governments, and consulting parties once an alternative route is selected by the agencies. A Class III intensive field survey of the selected route and associated access roads, substations, and ancillary facilities will be conducted and the results documented in a Class III Technical Report. All cultural resources identified during the intensive surveys would be evaluated for eligibility to the NRHP based on criteria set forth in the federal regulation 36 Code of Federal Regulations (CFR) 60.4.

The final Class III Technical Report will facilitate BLM, in consultation with the SHPO, to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties. Following completion of the Class III Technical Report, the HPTP addressing the effects of the proposed undertaking on identified historic properties will be prepared and implemented in consultation with the BLM, SHPO, other involved agencies, and consulting parties.

1E See response to Comments 1B and 1D.

COMMENT(S)

1 National Trust for Historic Preservation (continued)

Ms. Tamara Gertsch
Bureau of Land Management
July 15, 2011
Page 4 of 5

1F Environmentally Preferred Alternative are anticipated only in localized areas, including 2.1 miles of moderate-to-high impacts on views from the Fremont Indian State Park..., the Mountain Meadows Massacre Site, [and] portions of the Old Spanish Trail." DEIS at 2-71. The BLM should select different preferred alternatives that do not result in the majority of significant long-term impacts from the project being to nationally significant cultural resources.

1G Recommendation: The National Trust strongly recommends that the BLM consider changing its preferred alternatives to Alternative N6 and Alternative S5, both of which are the proponent's preferred alternatives, in order to most effectively avoid adverse impacts to nationally significant cultural resources.

2. **The Methods for Assessing Intensity of Impact of Alternatives on Cultural Resources Inadequately Evaluate Impacts to Nationally Significant Cultural Resources.**

1H We commend the BLM for creating a replicable system for assessing the degree of potential impacts of the various route alternatives on cultural resources. However, by lumping together resources that are and are not eligible for the National Register (and those that have not even been evaluated for eligibility) in order to measure high, moderate, and low cultural intensity, the BLM is downplaying the significance of some properties and falsely elevating the significance of others. See DEIS at 3-158. This results in the uniform treatment of *all* cultural resources and, subsequently, the evaluation of route alternatives based on quantity, not quality, of cultural resources present. For example, Alternative S4 is ranked second in the cultural resources preference rankings for the southern half of the project area because it "has among the fewest miles of high cultural resource intensity," yet it could directly affect the Mountain Meadows Massacre Site and a segment of the Old Spanish Trail and visually affect two roads that may be associated with the Trail. DEIS at 3-171. Conversely, Alternative S5 is ranked fourth for cultural resources preferences because it "has among the highest miles of high cultural resource intensity," yet it would not directly or indirectly affect any properties currently listed in the National Register. DEIS at 3-172. While a close look must be taken at the host of resources that could be adversely affected by project alternatives, extra weight should be given to nationally significant ones. In the example above, then, Alternative S5 should rank above Alternative S4 in preference because the former would not impact nationally significant properties. It must also be remembered that the survey information available for assessing cultural resource intensity and visual sensitivity is incomplete and uneven across the alternatives being considered. This makes prioritizing the presence of known, nationally significant resources for ranking alternatives preferences even more important.

1I

1J

1K

1L We propose that, in addition to considering the existing information about potentially affected cultural resources (i.e., number of cultural sites, number of visually sensitive

RESPONSE(S)

1F Comment and route preference noted. See responses to Comments 1A, 1B, and 1D.

1G Comment and route preference noted. See responses to Comments 1A, 1B, and 1D.

1H As described in Section 3.2.5.3 (refer to subheading Data Gaps and Limitations), BLM recognizes the limitations of using a methodology based on locations data. However, given the variations in site recordation standards, the BLM believes the most important information that can be obtained from site forms is location data, which provides for an understanding of site-distribution patterns across the Project area. Once the Agency Preferred Alternative is selected, Class III intensive field survey of the selected route and associated access roads, substations, and ancillary facilities are completed and the results documented in a Class III Technical Report. All cultural resources identified during the intensive surveys will be evaluated for eligibility to the NRHP based on criteria set forth in the federal regulation 36 CFR 60.4.

The final Class III Technical Report will facilitate BLM, in consultation with the SHPO, to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties. Following completion of the Class III Technical Report, the HPTP addressing the effects of the proposed undertaking on identified historic properties will be prepared and implemented in consultation with

1I See responses to comments 1B and 1H. Further, the rankings of environmental preference presented in the Draft EIS were intended as only a general indication of the overall results of the environmental analysis. The BLM decided that, because ranking of alternatives considered in an EIS is not a requirement of NEPA and a reader's understanding of ranking is subjective to their background or interests, environmental-preference ranking information has been removed from the Final EIS.

1J See responses to comments 1B and 1H.

1K See responses to comments 1B and 1H.

COMMENT(S)

1 National Trust for Historic Preservation (continued)

Ms. Tamara Gertsch
Bureau of Land Management
July 15, 2011
Page 5 of 5

1L sites, and number of historic properties listed in the National Register), the DEIS should also include a mechanism for prioritizing nationally significant properties, including—but not limited to—the Old Spanish National Historic Trail and the Mountain Meadows Massacre Site, which possess current or future designations beyond listing on the National Register. This avoids the counterintuitive conclusion that one could now draw from the DEIS that the presence of 10 unevaluated lithic scatters within 350 feet of a proposed alternative are more important to avoid than one NHL.

1M Recommendation: The National Trust recommends that the BLM modify the way it creates preference rankings for cultural resources. The BLM should prioritize avoiding potential adverse effects to nationally significant historic properties—first using considerations such as NHL and NLCS designations, and then National Register listing and eligibility—above unevaluated sites, and rank the alternative routes accordingly.

1N In conclusion, the National Trust urges the BLM to select Alternatives N6 and S5 as its preferred alternatives and to prioritize nationally significant historic properties when implementing their matrix for evaluating intensity of impacts to cultural resources.

We look forward to working with the Utah BLM on this project and others in the future. Please do not hesitate to contact me if you have any questions.

Respectfully submitted,

Rebecca Schwendler

Rebecca Schwendler, Ph.D.
Public Lands Advocate
National Trust for Historic Preservation

Amy Cole

Amy Cole
Senior Program Officer and Regional Attorney
National Trust for Historic Preservation

Cc: Nancy Brown, ACHP
Lori Hunsaker, UT Deputy SHPO
Byron Loosle, UT BLM State Cultural Resource Program Lead

RESPONSE(S)

1L See responses to comments 1B and 1H. Additional qualitative analysis of the results has been added and is presented in Section 3.2.5.4.

1M Rankings of environmental preference presented in the Draft EIS were intended as only a general indication of the overall results of the environmental analysis. The BLM has decided that because ranking of alternatives considered in an EIS is not a requirement of NEPA and a reader's understanding of ranking is subjective to their background or interests, environmental-preference ranking information has been removed from the EIS.

1N Comment and route preference noted. See responses to comments 1B and 1H.

COMMENT(S)

RESPONSE(S)

2 National Park Service

IMRextrev@nps.gov
Sent by: Cheryl_Eckhardt@nps.gov

07/14/2011 03:31 PM

To: utsrbproj@blm.gov

cc: waso_eqd_extrev@nps.gov, robert_f_stewart@ios.doi.gov, Lysa_Wegman-French@nps.gov, Michael_Elliott@nps.gov

bcc:

Subject: Comments on DES-11/0022, Sigurd To Red Butte No. 2 - 345kV Transmission Project

Dear Ms. Gertsch:

Please accept the attached NPS comments on the subject project.

(See attached file: DES.11.0022 Sigurd to Red Butte Comment Memo.pdf)

Thank you.

Environmental Quality External Review Team National Park Service Intermountain Region (AZ, CO, NM, MT, OK, TX, UT, WY) IMRextrev@nps.gov (See attached file: DES.11.0022 Sigurd to Red Butte Comment Memo.pdf)

1

COMMENT(S)

2 National Park Service (continued)

United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
12795 West Alameda Parkway
PO Box 25287
Denver, Colorado 80225-0287

DES-11/0022

July 14, 2011

OFFICIAL CORRESPONDENCE SENT VIA ELECTRONIC MAIL
NO HARD COPY TO FOLLOW

Memorandum

To: Tamara Gertsch, National Project Manager, BLM

From: Cheryl Eckhardt, Environmental Compliance Specialist, NPS

Subject: National Park Service comments on the Draft Environmental Impact Statement for the Sigurd To Red Butte No. 2 - 345kV Transmission Project

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the Sigurd To Red Butte No. 2 - 345kV Transmission Project. Our comments are divided into General comments followed by more specific comments on National Historic Landmarks and National Historic Trails.

General

2A We note that the National Park Service is not identified as a cooperating agency on the title page, which appears to be in error. We appreciate the opportunity to continue our relationship as a cooperating agency on this project.

We appreciate that BLM and USFS will be identifying the Agency Preferred Alternative after considering the public comments on the DEIS. We look forward to having another opportunity to review and comment on this project once the Preferred Alternative is selected.

National Historic Landmarks

Please note that the Secretary of the Interior Kenneth Salazar announced on June 30, 2011 that he had designated the Mountain Meadows Massacre Site a National Historic Landmark. The nomination has
2B been in process for over three years. The site is referenced numerous times throughout the draft EIS as a proposed National Historic Landmark; the new status should be acknowledged.

In comparing the National Historic Landmark to the nearby roadless areas, the DEIS states, "While the Mountain Meadows Massacre Site is an important historic site memorializing the massacre that occurred in the area in 1857, there are not management prescriptions that preclude crossing near the historic site parallel to existing transmission lines and pipelines." (page 2-71). However, we are confident that you are aware that the National Historic Preservation Act of 1966, as amended, Section 110 (a)(2)(B) specifies that Federal agencies shall "give special consideration to the preservation . . . of properties designated as having
2C National significance." Furthermore, Section 110 (f) requires that the Federal agency "shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such [National Historic] landmark . . ." Furthermore, *The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic*

1

RESPONSE(S)

2A National Park Service has been added to the title page.

2B The EIS has been revised to acknowledge the designation of the site on June 30, 2011, as an NHL since the Draft EIS was published.

2C While the BLM and USFS acknowledge the importance and sensitivity of the Mountain Meadows Historic Site, there were no additional federal protections, beyond the Section 106 of the NHPA, guiding agency decisions on actions proposed adjacent to the site at the time the Draft EIS was published. A portion of the site was designated as an NHL on June 30, 2011, and the Final EIS has been revised to acknowledge the designation of the site as an NHL since the Draft EIS was published.

COMMENT(S)

2 National Park Service (continued)

2C *Preservation Act**, Standard 4 and associated guidelines states, "In those cases when an agency's undertaking directly and adversely affects an NHL . . . the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL." (*Published in final in the *Federal Register* 24 April 1998, available at http://www.nps.gov/hps/fapa_110.htm.)

2D As you have noted, Alternative S2 is the environmentally preferred option; paradoxically, that option is identified as having the worst impact on cultural resources. This route has the "highest mileage [6.4 miles] through areas with high cultural resource sensitivity, in particular the highly sensitive Mountain Meadows Massacre Site." The DEIS evaluated the alternative as having a moderate/high impact on views from the historic site. (page 2-90) In addition, the S2 alternative has the highest number of sites (50) that are eligible to the National Register of Historic Places.

Alternative S4 would have less impact on the National Historic Landmark. The DEIS acknowledges that moving the transmission line farther east would reduce the visibility of the line from the site to a low/moderate impact. (page 2-90)

2E However, we understand your concern that in Alternative S4, the transmission line would cross 7.5 miles of two Inventoried Roadless Areas (IRAs). Is it possible to lower the impact on the National Historic Landmark while not increasing the impact on the IRAs? To accomplish that goal, we support routing the transmission line partly on S2 and partly on S4. Modifying the S2 route in the Mountain Meadows vicinity so the line follows the S4 route would reduce the impact on the National Historic Landmark. Although the DEIS doesn't seem to include a map of S2 and S4 in relation to the Atchison IRA (the closest IRA to Mountain Meadows), it appears from other maps that a hybrid of S2 and S4 may not increase the impact on that IRA. In addition, although we do not know the location of all the cultural resources that would suffer with high impacts with S2, it is possible that some of the sites could be avoided by carefully combining segments of S2 and S4.

The DEIS assigns to the S2 alternative the second lowest impact on viewers and the lowest impact on scenery "due to adjacency of existing transmission lines." (page 3-221) The document further states that "moderate impacts are anticipated for views from the memorial viewing platforms [at the Mountain Meadows Site] because the project would be in context with the existing utility corridor." (page 3-226)

2F While these statements may seem logical, the visual simulation of S2 from the massacre site (page F-10) demonstrates that while the existing line is at a distance, the proposed S2 route is quite close and much more obvious from the historic site.

We especially appreciate your including the Mountain Meadows Massacre Site as a key observation point.

National Historic Trails

The Congressionally designated Old Spanish National Historical Trail (NHT), which we co-administer with the BLM, runs through the entire project area. We have no concerns about the effect of the undertaking on the north end of the project, and have no objection to any alternative that meets agency and the project proponent's needs. We do have concerns about the effects of the undertaking on the south end on the Old Spanish NHT along the environmentally preferred alternative S2.

It is our opinion that the construction of the transmission line along that alternative will cause adverse effects to Old Spanish NHT trail remnants at the points where the transmission line crosses the trail and possibly from the many access roads and ATV trails, to Old Spanish NHT trail-associated resources such as the Mountain Meadows Massacre National Historic Landmark, and to the Old Spanish NHT trail setting. Most of the visual effects to the trail setting would not be mitigable short of burying the transmission line because the transmission line would be about or less than a mile from the trail. The trail's setting is one of the qualities that qualified it for designation as a National Historic Trail.

2G

2

RESPONSE(S)

2D See response to comment 2C. The environmentally preferred alternative is the alternative route that, on balance, would cause the least damage to the biological and physical environment; it also means the alternative that could best protect, preserve, and enhance historic, cultural, and natural resources. See also response to comment 1B.

2E The Inventoried Roadless Areas (IRAs) and Alternatives S2 and S4 are mapped on MV-14d.

USFS requested consideration of an additional alternative route variation made up of a combination (or "hybrid") of Alternatives S2 and S4 to minimize impacts on the Cove Fort IRA and the Mountain Meadows Massacre Historic Site and Mountain Meadows Massacre Site NHL. As part of BLM's preliminary consideration of this alternative, BLM requested technical information regarding the feasibility of such an alternative from PacifiCorp, dba Rocky Mountain Power (the Proponent). BLM received information on the technical feasibility of the potential alternative route from the Proponent in January 2011 and September 2011. Upon receipt of the information from the Proponent, BLM requested the U.S. Department of Energy (DOE) Office of Electricity Delivery and Energy Reliability to conduct an independent review of the technical information and general assessment of feasibility provided by the Proponent.

On November 9, 2011, DOE provided a letter response concurring with the Proponent's assessment that the use of the hybrid route for the transmission line could impact reliability due to potential risk to the system introduced by the multiple crossings of other existing transmission lines that would be required along this alternative route. However, DOE did not discount the alternative route as technically or economically infeasible. In a letter dated September 28, 2011, responding to BLM regarding questions posed by DOE during their independent review, the Proponent stated they would prefer to avoid line crossings of the IPP and Sigurd to Red Butte No. 1 transmission line due to ongoing safety issues and additional ongoing risk to reliability, the Proponent would be willing to construct the Project using the Alternative S7 alignment. Alternative routes that combine elements of Alternatives S2 and S4 are analyzed in the Final EIS as Alternatives S7 and S7-A.

2F The location of Alternative S2 in relation to the existing transmission lines is described on in Section 3.2.8.5 (refer to discussion for Alternative S2 under subheading Sensitive Viewers). The potential visual impacts on the Mountain Meadows Historic Site and Mountain Meadows Massacre Site NHL related to implementation of Alternative S2 are anticipated to be moderate-to-moderate/high while impacts on the site from implementation of Alternative S4 are anticipated to be low-to-moderate. This difference in intensity of potential impacts between Alternatives S2 and S4 is attributed to the distance from the Project to a viewer at the Mountain Meadows Historic Site and Mountain Meadows Massacre Site NHL and a viewer viewing Alternative S4 in the context of existing transmission lines (refer to discussion for Alternative S4 under subheading Sensitive Viewers in Section 3.2.8.5).

2G Visual impacts on the setting of the Old Spanish NHT are discussed in the cultural resources section (refer to Section 3.2.5). See also response to comment 1B.

COMMENT(S)

2 National Park Service (continued)

2H Any of the five other southern alternatives would create fewer direct, indirect, and cumulative effects to the Old Spanish NHT than S2 will. We are also most interested in, and supportive of, another alternative not analyzed in the DEIS. This is the so-called "hybrid" alternative, that would run along S2 for some distance, but then move east instead of passing directly through the Mountain Meadows area. We feel that the hybrid alternative, while not free of impacts to the Old Spanish NHT, would greatly reduce or eliminate most of the visual effects to the trail's setting.

We are also concerned that the Class III cultural inventory is not complete. Substantial numbers of cultural resources are already known for the area through records checks and sample surveys, and there may be many more potentially significant resources yet to be recorded, including segments and associated resources of the Old Spanish National Historical Trail. We urge that the effects of the undertaking upon these as yet unrecorded resources be carefully analyzed before the undertaking is authorized to proceed.

Thank you for considering our comments. If you have any questions regarding our National Historic Landmark comments, please contact Lysa Wegman-French at 303-969-2842 and for National Historic Trail comments, please contact Michael Elliott at 505-988-6092.

cc:
NPS, WASO-EQD
Michael Elliott, NPS
Lysa Wegman-French, NPS
Robert Stewart, DOI

RESPONSE(S)

2H USFS requested consideration of an alternative route variation made up of a combination (or 'hybrid") of Alternatives S2 and S4 to minimize impacts on the Cove Fort IRA and the Mountain Meadows Historic Site and Mountain Meadows Massacre Site NHL. As part of BLM's preliminary consideration of this alternative, BLM requested technical information regarding the feasibility of such an alternative from the Proponent. BLM received information on the technical feasibility of the potential alternative route from the Proponent in January 2011 and September 2011. Upon receipt of the information from the Proponent, BLM requested the DOE Office of Electricity Delivery and Energy Reliability to conduct an independent review of the technical information and general assessment of feasibility provided by the Proponent.

On November 9, 2011, DOE provided a letter response concurring with the Proponent's assessment that the use of the hybrid route for transmission line could impact the reliability of the transmission line due to potential risk to the system introduced by the multiple crossings of other existing transmission lines that would be required along this alternative route. However, DOE did not discount the alternative route as technically infeasible. In a letter dated September 28, 2011, responding to BLM regarding questions posed by DOE during their independent review, the Proponent stated they would prefer to avoid line crossings of the IPP and Sigurd to Red Butte No. 1 transmission line due to ongoing safety issues and additional ongoing risk to reliability, the Proponent would be willing to construct the Project using the Alternative S7 alignment. Alternative routes that combine elements of Alternatives S2 and S4 are analyzed in the Final EIS as Alternatives S7 and S7-A.

COMMENT(S)

RESPONSE(S)

3 U.S. Fish and Wildlife Service

Amy_Defreese@fws.gov

07/18/2011 04:45 PM

To: utsrbproj@blm.gov

cc: rob_wilson@blm.gov, Tamara_Gertsch@blm.gov

bcc:

Subject: Sigurd to Red Butte Transmission Project Draft EIS - Comments with Signature

Please find attached a signed, electronic copy of comments from the U.S. Fish and Wildlife Service, Utah Field Office.

Sincerely,

Amy Defreese

Amy Defreese, Ecologist
U.S. Fish and Wildlife Service
Utah Field Office
2369 W. Orton Circle, Suite 50
West Valley City, Utah 84119

Office: (801) 975-3330 x 128
Fax: (801) 975-3331
Email: amy_defreese@fws.gov

(See attached file: SigurdtoRedButte TransmissionLine_FWS DEIS Comments.pdf)

1

COMMENT(S) | **RESPONSE(S)**

3 U.S. Fish and Wildlife Service (continued)

United States Department of the Interior
FISH AND WILDLIFE SERVICE
UTAH FIELD OFFICE
2369 WEST ORTON CIRCLE, SUITE 50
WEST VALLEY CITY, UTAH 84119

In Reply Refer To:

FWS/R6 July 18, 2011
ES/UT
10-CPA-0039

Cedar City Field Office, BLM
Attn: Rob Wilson
176 East D.L. Sargent Dr.
Cedar City, Utah 84721

Re: Sigurd to Red Butte No. 2 345kv Transmission Line Project DEIS

Dear Mr. Wilson,

We reviewed the subject draft environmental impact statement (DEIS) prepared by your office to analyze and disclose the impacts of granting a right-of-way (ROW) across federal land for a transmission line. PacifiCorp proposes to construct, operate and maintain a single-circuit, alternative-current, 345kV transmission line located between the existing Sigurd Substation near Richfield, Utah and the Red Butte Substation in Washington County, Utah. The Project also includes expansion of the existing Sigurd Substation on private land to accommodate new substation equipment to interconnect the proposed transmission line with the existing system. We submit the following comments for your consideration.

General Comments

Environmentally Preferred Alternative

3A We recommend the BLM select the environmentally preferred alternative (Routes N1 and S2) identified in the DEIS. This alternative will avoid impacts to Utah prairie dog, minimize adverse impacts to greater sage-grouse brooding habitat, and minimize impacts to high quality raptor habitat. Please be aware that informal or formal consultation under Section 7 of the Endangered Species Act (ESA) may be required for Utah prairie dog depending on which alternative you choose. You may reference our letter, dated March 5, 2010, which more specifically outlines your responsibilities as a federal agency.

3A Comment and route preference noted.

COMMENT(S)

3 U.S. Fish and Wildlife Service (continued)

Analysis and Compensation for Loss of Raptor Habitat

We appreciate PacifiCorp's effort to minimize impacts to raptors by: 1) incorporating transmission line design standards to reduce mortality; 2) incorporating spatial and seasonal construction buffers around active nests during the breeding season; and, 3) minimizing tree clearing to the extent practicable. We do not agree, however, that implementation of these measures alone results in low residual impacts to raptors. As described in the DEIS, low, medium and high quality raptor habitat exists within the project ROW. The construction and maintenance of the project will likely eliminate and fragment that habitat. We recommend that you present the acreage of low, medium and high quality habitat that will be temporarily and permanently impacted by the proposed project.

3B

In accordance with Service Mitigation Policy, we recommend compensatory mitigation to replace raptor habitat values lost to unavoidable impacts. Mitigation can be accomplished by increasing habitat values of existing raptor use areas on or adjacent to project lands; restoring or rehabilitating previously altered habitat; acquiring land through fee title acquisition, conservation easements, legislative protective designations, and managing acquired land for raptor habitat values; and/or other land management strategies (Romin & Muck 2002).

3C

Analysis and Compensation for Loss of Migratory Bird Habitat

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA), part of the regulatory framework that governs implementation of the proposed action. In the spirit of Executive Order 13186 and our Memorandum of Understanding with you (dated April, 2010), we recommend that you include in the FEIS an analysis of temporary and permanent habitat loss from maintenance of the ROW and associated facilities. We also recommend that PacifiCorp provide compensatory mitigation for that loss. Intermountain West Joint Venture has identified potential focal areas for bird habitat conservation and restoration efforts which can be useful in identifying areas for offsite, in-kind habitat compensation (2005).

3D

Migratory Bird Survey Protocol

We understand that BLM will develop an Adaptive Management Plan (Plan) for wildlife as an appendix to the Plant and Wildlife Species Conservation Plan. During development of the Plan, we wish to review PacifiCorp's survey protocol for migratory bird nests and discuss specific measures PacifiCorp may implement to ensure compliance with MBTA.

3E

Specific Comments

Section 2.3.5.1 Construction Seasons, Table 2-5, Seasonal Restrictions in sensitive habitats

For migratory birds, we recommend that you extend the seasonal restriction from July 15 to July 31 and remove the word "generally" from the timeframe. Should construction occur within migratory bird breeding season, a 50-foot buffer for active nests as proposed in Table 2-5, may not be adequate for all species. We recommend that you increase the nest buffer to 100 feet to

3F

RESPONSE(S)

3B Resource sensitivity classifications, criteria for assessing the intensity of impacts, and effectiveness of selective mitigation measures, including those for raptors, were developed by BLM in collaboration with the agency interdisciplinary (ID) team, which includes representatives from Utah Division of Water Resources (UDWR) and other cooperating agencies. Agency concerns regarding impacts on raptors from the Project focused on human disturbances during nesting periods. While the Project is anticipated to modify natural habitats significant loss of productive habitat is not expected. Continued use of habitat altered by the Project also is expected. BLM and cooperating agency biologists determined that impacts on raptors would be mitigated to a low intensity by conducting preconstruction surveys and adhering to seasonal stipulations and spatial buffers around active nests, regardless of the quality of habitat.

A comparison of impacts on raptor habitats by miles crossed is presented in Tables 3-42 and 3-45. The "miles crossed" metric is commonly used in the NEPA process for large transmission line projects. This metric represents an index of potential impacts, as the potential for adverse impacts is generally related to the amount of a particular resource crossed. While not providing data on the specific amount of low, medium, and high quality habitat impacted, the methodology does facilitate the relative comparison of alternative routes that is required by NEPA.

3C BLM and USFS reviewed the type of impact, intensity, and location of potential impacts on raptors associated with construction and operation of Project and determined that compensatory mitigation for impacts on raptors associated with the Project would not be required either under current USFS or BLM policy or their obligations under the Migratory Bird Treaty Act and Executive Order 13186.

3D See also response to comment 3A.

3E PacifiCorp's *Utah Avian Protection Plan*, which includes measures taken by the Proponent to comply with the Migratory Bird Treaty Act, was distributed to the U. S. Fish and Wildlife Service (FWS) for courtesy review on October 26, 2011.

3F The recommended modifications are now reflected in Tables 2-5, 2-6, and 3-3 of the Final EIS.

COMMENT(S)

3 U.S. Fish and Wildlife Service (continued)

3F ensure that disturbance does not result in nest abandonment. These changes should also be made in Table 2-6, Standard Mitigation Measure #6 and Table 2-7, Selective Mitigation Measure #12.

3G The *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (Romin & Muck 2002) recommends spatial buffer zones for bald eagles during winter roosting from November through March. We recommend that you extend the seasonal construction restriction from March 15 to March 31. We recommend that you do not decrease the 0.5 mile spatial buffer for roosting bald eagles to 0.25 mile under any circumstances (e.g. no line of site to work area) without review from this office.

Section 2.3.5.3, Construction Activities, Table 2-6, Standard Mitigation Measures

3H Standard Mitigation Measure #7 stipulates that migratory bird and nest surveys will be conducted if temporary construction and maintenance activities cannot be avoided in the primary nesting season. We recommend that you add the following language to this measure:

> "If activities must be scheduled during the migratory bird breeding season, a site-specific survey for nesting birds will be performed starting at least two weeks prior to groundbreaking activities or vegetation treatments. A 100-foot construction buffer around each active nest will be implemented."

You should also add this stipulation to Table 2-7, Selective Mitigation Measures for consistency.

Section 2.3.5.3, Construction Activities, Table 2-7, Selective Mitigation Measures

We recommend that you add the following language to Selective Mitigation Measure #12:

3I

> "Spatial buffers and seasonal restrictions for roosting bald eagles identified in the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use* Disturbances (Romin and Muck 2002) will be followed between November 1 and March 31."

Section 2.3.6.1 Plan of Development, Plant and Wildlife Species Conservation Measures Plan, page 2-43

3J We request that you coordinate with us in the development of this plan. We recommend that the plan address effects of project construction not specifically analyzed in the DEIS, including blasting with explosives.

Section 3.2.4.3 Regional Setting, Vegetation Communities, page 3-75

3K The Utah Comprehensive Wildlife Conservation Strategy (UDWR 2005) describes the ten most at-risk habitat types (out of 24) in Utah and assigns priority based on relative abundance, degree of threat faced by each habitat type, trends in abundance and condition, number of sensitive species for which the habitat is important, and vertebrate biodiversity. Of the 15 primary habitat types that occur within the project corridor, five are listed among the top ten most at-risk habitat types by the UDWR. These habitat types are riparian, shrub-steppe, mountain shrub, grassland

RESPONSE(S)

3G The recommended modifications are now reflected in Table 2-5 of the Final EIS.

3H The recommended modifications are now reflected in Table 2-6 and 3-3 of the Final EIS.

3I See response to comment 3F.

3J BLM will coordinate with FWS when preparing the Plant and Wildlife Species Conservation Plan to be included in the Plan of Development (POD).

BLM considers blasting, if required, to be part of the construction activities outlined in the Project description. The EIS analyzes impacts on biological resources associated with implementation of the construction, operations, and maintenance of the Project as described in the Project description. As stated in Section 2.3.51 of the Final EIS, the BLM will require a Blasting Plan Framework to be included in the POD and posted on the BLM Project website when completed. The Blasting Plan Framework will identify mitigation measures needed to protect the environment, including biological resources.

3K The recommended modifications are now reflected in Section 3.2.4.3 of the Final EIS.

COMMENT(S)	RESPONSE(S)
3 U.S. Fish and Wildlife Service (continued)	
3K and aspen communities. We recommend that you reference the status of these habitats in your description of vegetation communities.	
Section 3.2.4.3 Regional Setting, Special Status Species, Table 3-32	
3L Frisco clover (*Trifolium friscanum*), Frisco buckwheat (*Eriogonum soredium*), and Ostler Peppergrass (*Lepidium ostleri*) are Candidate species under the Endangered Species Act. Habitat for these species may exist within the project area. We recommend that you add these plants to Table 3-32 and conduct appropriate habitat surveys. If suitable habitat exists, we recommend that you consider project effects to these species and develop appropriate conservation measures. You may contact Daniela Roth, USFWS Botanist, at (801) 975-3330 for more information.	3L Frisco clover (*Trifolium friscanum*), Frisco buckwheat (*Eriogonum soredium*), and Ostler peppergrass (*Lepidium ostleri*) have been included in Table D-6 to reflect the most current list of special status species that may occur in the Project area. BLM determined that the known range of these species does not extend into the study area and no suitable habitat is present. Project-related impacts on populations of Frisco clover, Frisco buckwheat, and Ostler peppergrass are not anticipated.
3M The Northern leopard frog (*Rana pipiens*) is a Tier III state sensitive species (UDWR 2005), and we are reviewing a petition to list the species under the ESA. Because the species may occur within the project area, we recommend that you add Northern leopard frog to Table 3-32 and survey the ROW for suitable habitat. If habitat exists, we recommend that you consider project effects to this species and develop avoidance and minimization measures. You may wish to coordinate with Paul Thompson (801-476-2771), Utah Division of Wildlife Resources (UDWR) aquatics biologist.	3M On October 5, 2011, FWS published a 12-month finding on the petition to list the northern leopard frog in the western United States as "threatened" (76 FR 61896). The finding presented FWS's determination that listing of the northern leopard frog is not warranted. No modifications were made to the Final EIS and no surveys will be required.
Section 3.2.4.4 Study Methodology, Impact Assessment, Types of Potential Environmental Effects	
3N We recommend that you add direct effects to biological resources from blasting to this section. Where blasting may occur in areas with sensitive wildlife resources or during sensitive time periods (i.e. breeding season), you should disclose how PacifiCorp will avoid, minimize and mitigate for those effects.	3N See response to comment 3J.
Section 3.2.4.4 Study Methodology, Impact Assessment and Mitigation Planning, Effects Analysis, page 3-89	
3O We recommend that you increase the "moderate" sensitivity rating applied to mountain shrub, grassland, aspen and shrubsteppe habitat. Mountain shrub, grassland and aspen habitats are low in relative abundance, face a high level of threat, and demonstrate a downward trend in abundance and condition (UDWR 2005). Although higher in abundance, shrubsteppe habitat is threatened by a number of human activities including land development, energy development, and invasive plants. UDWR identified a "definite decreasing trend" for shrubsteppe habitat (2005).	3O Initial resource sensitivity classifications were developed by BLM in collaboration with the agency ID team, which includes representatives from UDWR and other cooperating agencies. The classifications were determined for each vegetation community by analyzing anticipated Project-related impacts on each community and determining the community's sensitivity to that impact, as described in Section 3.2.4.4. Vegetation communities identified as needing conservation action in the Utah Comprehensive Wildlife Strategy (UDWR 2005) are identified in Section 3.2.4.3. No changes have been made to the Final EIS.
3P Where reclamation is proposed to return "high" sensitivity habitats to pre-construction conditions, you should assess and require compensatory mitigation for temporary loss in function. Where reclamation will not return the ROW to pre-construction conditions, you should assess and require compensatory mitigation for permanent loss in function.	3P In addition to reclamation post-construction, BLM and USFS will implement mitigation measures to avoid impacts on high sensitivity habitats (riparian habitats), as discussed in Section 3.2.4.4. Riparian habitats are further protected under various additional laws, statutes, and policies, as outlined in Section 3.2.3.1. Mitigation for loss of function will be performed if further studies, including wetland delineations, reveal that it is required under law.

COMMENT(S)	RESPONSE(S)

3 U.S. Fish and Wildlife Service (continued)

We appreciate the opportunity to provide these comments. For further assistance, please contact Amy Defreese, Ecologist, at the letterhead address or (801) 975-3330 x128.

Sincerely,

Betsy Herr

FOR Larry Crist
Utah Field Supervisor

Cc: UDWR – Cedar City (Attn:Bruce Bonebrake)
EPA – Denver (Attn: Larry Svoboda)
USFS - Fishlake National Forest
USFS – Dixie National Forest

COMMENT(S)	RESPONSE(S)
3 U.S. Fish and Wildlife Service (continued)	

References

Romin L. and J. Muck. 2002. U.S. Fish and Wildlife Service. Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances.

Intermountain West Joint Venture. 2005. Coordinated Implementation Plan for Bird Conservation in Utah.

Utah Division of Wildlife Resources. 2005. Utah comprehensive wildlife conservation strategy. Publication Number 05-19.

COMMENT(S) | **RESPONSE(S)**

4 U.S. Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

JUL 18 2011

DEPT OF THE INTERIOR
RECEIVED
JUL 21 2011
BUREAU OF LAND MANAGEMENT
CEDAR CITY UTAH

Ref: 8EPR-N

Tamara Gertsch, Project Manager
Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84721

Re: Draft EIS Comments for the Sigurd to Red Butte No. 2 – 345 kilovolt Transmission Project, Utah
CEQ # 20110169

Dear Ms. Gertsch:

The U.S. Environmental Protection Agency Region 8 has reviewed the Draft Environmental Impact Statement (EIS) for the Sigurd to Red Butte No. 2 – 345 kilovolt Transmission Project (Project). This has been done in accordance with the EPA's responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

Project Summary
The Draft EIS analyzes the impacts of granting right-of-way across federal lands to PacifiCorp (doing business as Rocky Mountain Power, the Proponent) for the purpose of constructing, operating and maintaining the Project. The Project includes the single-circuit, alternating-current, overhead transmission line, ancillary facilities and expansion of the existing Sigurd Substation on private land. It is located in Sevier, Millard, Beaver, Iron and Washington counties in Utah and covers a distance of approximately 160 miles. The Draft EIS analyzes several alternatives, including taking no action, and assesses the potential impacts on the natural, human and cultural environment for each of the alternatives. The Bureau of Land Management (BLM) would need to issue a right-of-way grant and the U.S. Forest Service (USFS) would need to issue a special-use permit for constructing, operating and maintaining the proposed transmission line and associated facilities. When completed, the Project would provide approximately 600 megawatts of electrical capacity to respond to anticipated load growth in southwestern Utah.

To facilitate screening and comparison of the transmission line alternative routes, the Project area was divided into two segments: a northern segment from the existing Sigurd Substation to the South Black Mountains area, and a southern segment from the South Black Mountains area to the existing Red Butte Substation near Central, Utah. There are six alternative routes in each of the northern and southern

COMMENT(S)

4 U.S. Environmental Protection Agency (continued)

segments.

Selection of the Agency Preferred Alternative in the Final EIS
The comparison of alternatives in the Draft EIS resulted in identifying both the Environmentally Preferred Alternative and the Proponent's Proposed Action. However, BLM intends to identify the Agency Preferred Alternative in the Final EIS, after the public has provided comments on the Draft EIS. The Environmentally Preferred Alternative parallels existing transmission lines for the majority of its alignment (134.0 miles out of 170.3 miles, or 79% of the alignment). Compared to other alternative alignments, it ranks highest in regard to the percentage of alignment that parallels existing transmission lines. The Proponent's Proposed Action, conversely, parallels existing transmission lines the least when compared to other alignment alternatives (50.2 miles out of 164.5 miles, or 31% of the alignment). In regard to environmental impacts, the Environmentally Preferred Alternative route has the lowest overall impact on the environment, while the Proponent's Proposed Action has the highest overall impact on the environment when compared to all alternatives. These alternatives are at each end of the spectrum in regard to anticipated environmental impacts, with the other alternatives falling somewhere in between. The EPA understands the importance of balancing an alternative's environmental impacts while also assuring system reliability (which can be negatively impacted by paralleling existing transmission lines in an area susceptible to outages due to potential for wildfires). We recommend that the Final EIS clearly disclose the reasoning behind the selection of an Agency Preferred Alternative based on the comparison of alternatives and key resource impacts.

Air Quality
The EPA is pleased with the air quality analysis initiated for the Project. Please consider the following suggestions for inclusion in the Final EIS:

4A

- Page 3-13: For NEPA projects, disclosure of impacts are not typically based on significance levels. EPA recommends full disclosure of air impacts regardless of exceeding the significance impact levels on Table 3-8.
- Page 3-15: Table 3-7 Estimated Emissions of Criteria Pollutants. Please identify PM10 contribution to N6 Total Emissions of 2,486.8 tons per year. This emission rate appears to be substantially different than other emissions presented in Table 3-7 and an explanation should be presented in the Final EIS.
- Page 3-16 Table 3-8 Air Dispersion Modeling Results. NO2 1-hour impact analysis results should be presented. Typically, if a screening modeling method results in impacts above a level of concern, a more sophisticated modeling effort may be warranted. This would allow presentation of more refined results, or identify that a mitigation strategy may be warranted to reduce adverse impacts.
- Since the Project is located 14 miles from Zion and 55 miles from Bryce (page 3-6) we recommend the BLM disclose the air quality related values to these Class I areas.

Mitigation Measures
The mitigation measures outlined in the Draft EIS are comprehensive and well defined. It is understood that the Plan of Development (POD) will include fourteen supporting implementation documents. We appreciate that one of these documents, the Noxious Weed Management Plan, is based on principles and procedures from both the BLM Integrated Weed Management Manual 9015 and the USFS Noxious Weed Management Manual 2080, and addresses a key issue identified in our scoping letter dated February 5, 2010.

2

RESPONSE(S)

4A

Maximum Project-related air quality impacts are shown in the Table 3-7 for all relevant pollutants and averaging periods.

The PM_{10} value referenced was a typographical error that has been corrected.

NO_2 1-hour impacts are now presented in the Table 3-9.

Air-quality-related values typically comprise such effects as degradation of visibility in Class I areas, nitrogen deposition, contributions to regional ozone concentrations, etc. In the Class I areas closest to the Project, visibility degradation has been identified as the most sensitive air-quality-related value, although ozone formation and nitrogen deposition are also potential concerns. However, ozone formation is influenced by regional, national, and even international emissions and a temporary activity such as transmission line construction is unlikely to influence substantially regional ozone. Nitrogen deposition, while a more localized phenomenon is a concern over annual to multi-year time periods and transmission line construction will affect only nearby Class I areas for a short period of time as construction progresses along the transmission line routes.

Visibility affects typically are assessed on a shorter time scale. A conservative screening model, VISCREEN, was run for the closest Class I area, Zion National Park, using maximum NO_2, fine particle, and soot emissions from transmission line construction activities to assess potential impacts from visible plumes. The screening results indicate that the conservative screening criteria would not be exceeded in the Class I area during the short period of time that construction will occur in closest proximity to the park.

Regional haze is also a potential issue in the southern Utah Class I areas. However, like ozone, regional haze is the result of multiple sources of emissions occurring over wide areas. While transmission-line-construction emissions could contribute to regional haze, the transitory nature of the emissions suggests that contribution would be negligible. The entire Project inventory would constitute approximately 0.6 percent of NO_x, 0.02 percent of SO_2, and 0.87 percent of $PM_{2.5}$ annual emissions in the sparsely populated seven-county Project area, based on Western Regional Air Partnership 2005 inventories (refer to http://wrapedms.org/), and would contribute to regional emissions for less than 2 years.

COMMENT(S)

4 U.S. Environmental Protection Agency (continued)

4B Dust particulates from construction have previously been identified in our scoping comments as a key issue which is of concern to the EPA. Airborne dust may not only be a visual nuisance, but can be potentially dangerous to asthma sufferers and others with respiratory illnesses. The EPA recommends that the POD supporting document addressing airborne dust impacts include mitigation measures and commitments in the Final EIS.

The Draft EIS has incorporated standard mitigation measures, including best management practices and design features associated with the construction, operation and maintenance of the Project. Selective mitigation measures beyond these standard mitigation measures have also been included in the Draft EIS. The document identifies that these measures would be warranted depending on environmental conditions, on a case-by-case basis. To reduce impacts associated with specific resource concerns (e.g., cultural, biological, visual resources) the Draft EIS identifies that the selected mitigation measures would be reviewed and refined through the NEPA process and development of the POD (to be completed before BLM and USFS RODs are signed). Depending on the Agency Preferred Alternative identified by BLM in the Final EIS and its specific resource concerns, the EPA recommends including the selective mitigation measures that would apply in the standard mitigation measures category.

4C

Project Rating

In accordance with our responsibilities under the Clean Air Act Section 309, it is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. The EPA is rating each of the alternatives in the Draft EIS as "Environmental Concerns – Insufficient Information" (EC-2). The "EC" rating means that the EPA's review of the Draft EIS has identified potential impacts that should be avoided in order to fully protect the environment. The "2" rating indicates that the EPA has identified additional information, data, analyses, alternatives or discussion that should be included in the Final EIS. Specifically, the EPA recommends additional disclosure of the selection of an Agency Preferred Alternative, air quality impacts and mitigation measures as outlined in this letter.

4D

Thank you for the opportunity to provide comments on the Draft EIS. If you have any questions regarding our comments or this rating, please contact Suzanne Bohan, Deputy Director of the NEPA Compliance and Review Program at (303) 312-6925. You may also contact David Fronczak, lead reviewer for this project, at (303) 312-6096 or fronczak.david@epa.gov.

Sincerely,

Carol L. Campbell

Carol L. Campbell
Assistant Regional Administrator
Office of Ecosystems Protection
and Remediation

Enclosure: EPA's rating system

3

RESPONSE(S)

4B As described in Section 2.3.5.1, an Erosion, Dust Control, and Air Quality Plan for implementing the design features and selective mitigation measures considered in the EIS will be developed as part of the POD.

4C The selective mitigation measure applied in the EIS to minimize or reduce potential impacts will be incorporated into the POD through the development of various implementation plans (described in Section 2.3.5.1) to be included in the POD. Surveys for biological and cultural resources and formal wetland delineation will be completed along the selected route prior to Project construction. Location-specific requirements for selective mitigation measures will be determined based on survey results and review of delineated wetlands and incorporated in the POD prior to issuance of the BLM right-of-way grant and USFS special-use authorization and initiation of construction activities.

4D See responses to comments 4A, 4B, and 4C.

COMMENT(S) | **RESPONSE(S)**

4 U.S. Environmental Protection Agency (continued)

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

4D **EC - - Environmental Concerns:** The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

4D **Category 2 - - Insufficient Information:** The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment, February, 1987.

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Local Agencies

COMMENT(S)

RESPONSE(S)

5 Millard County

"Bruce Parker" <pds@utahplanning.com>

07/18/2011 04:49 PM

To <utsrbproj@blm.gov>

cc "'Daron P Smith'" <dsmith@co.millard.ut.us>, "'Bart Whatcott'" <bwhatcott@co.millard.ut.us>, "'Jim Withers'" <jwithers@co.millard.ut.us>, "'Richard Waddingham'" <RWaddingham@frontierlaw.com>, "'Sheryl Dekker'" <sdekker@co.millard.ut.us>

bcc

Subject SIGURD TO RED BUTTE #2 TRAMSMISSION PROJECT EIS

Bruce W. Parker, AICP

Planning and Development Services

Salt Lake City, Utah

801/277-4435

pds@utahplanning.com

1

COMMENT(S) | **RESPONSE(S)**

5 Millard County (continued)

Planning and Development Services

3007 East Cruise Way
Salt Lake City, Utah
84109

801/277/4435
Fax 801/277/4760
pds@utahplanning.com

July 18, 2011

The U.S. Department Of Interior, Bureau Of Land Management
Attention: Tamara Gertsch
Bureau Of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, Utah 84721

Re: "Sigurd to Red Butte No.2 Transmission Project EIS"

Dear Ms. Gertsch,

Attached are the comments of Millard County, and provided on behalf of the Millard County Board of County Commissioners, directed to the Sigurd to Red Butte No. 2 Transmission Project EIS.

On behalf of Millard County we want to thank the Bureau of Land Management for providing the opportunity for Millard County to participate in the Sigurd to Red Butte No.2 Transmission Project EIS process and for now allowing us to provide our comments.

Respectfully submitted on behalf of the Millard County Board of County Commissioners.

Bruce W. Parker, AICP
Principal

Attachment.

cc. Board of County Commission Members
Sheryl Dekker, County Planner
Richard Waddingham, County Attorney
File.

COMMENT(S) | **RESPONSE(S)**

5 Millard County (continued)

MILLARD COUNTY, UTAH
COMMENTS RELATED TO THE

"SIGURD TO RED BUTTE NO.2 TRANSMISSION PROJECT EIS"

TO:

THE U.S. DEPARTMENT OF INTERIOR, BUREAU OF LAND MANAGEMENT
ATTENTION: TAMARA GERTSCH
BUREAU OF LAND MANAGEMENT
CEDAR CITY FIELD OFFICE
176 EAST D.L. SARGENT DRIVE
CEDAR CITY, UTAH 84721

PROVIDED BY:
MILLARD COUNTY BOARD OF COUNTY COMMISSIONERS
MILLARD COUNTY, UTAH

Via Email Transmission to utsrbproj@blm.gov

July 18, 2011

Thank you for the opportunity to provide comments on the Sigurd to Red Butte No. 2 Transmission Project ("Sigurd to Red Butte #2"). The following comments are provided on behalf of Millard County (hereinafter "Millard County") by its duly elected Board of County Commissioners (Commissioner Daron P. Smith, Commissioner Bart Whatcott, and Commissioner Jim Withers).

Millard County fully supports the concepts and processes of coordinated planning for all energy corridor planning and permitting. Additionally, as the home to the Intermountain Power Plant, a major power generation site for the western United States, and its associated power distribution facilities, Millard County understands fully its public responsibilities to be a partner in energy corridor planning. Millard County has an established record of supporting and facilitating the location of energy corridors within the County that have either an intrastate, interstate, or federal significance. This is evidenced by the location in Millard County of a number of energy corridors, including the West-Wide Energy Corridor, the Milford Wind Corridor Project, and the Kern River pipeline corridor.

Millard County understands that one of the purposes of the Sigurd to Red Butte #2 Draft EIS is to analyze and disclose the impacts of granting a right-of-way across federal land to PacifiCorp to construct and operate a 354kV transmission line. The transmission line would be located between the existing Sigurd Substation near Richfield (Sevier County) and the Red Butte Substation near Central (Washington County) Utah, a distance of approximately 160 miles. Against the back-drop

COMMENT(S)

5 Millard County (continued)

Sigurd to Red Butte No. 2 Transmission Project EIS
Millard County, Utah – Comments
7/18/2011

of support for energy producing facilities and associated transmission and distribution facilities, Millard County provides the following comments directed to the Sigurd to Red Butte #2 Draft EIS. To be concise, Millard County has limited comments to the Alternatives proposed within Millard County (N1 to N6) and those generally referred to as the "northern" Alternatives.[1]

5A
- Sigurd to Red Butte #2 Draft EIS identifies the transmission line route and analyzes various environmental matters for those lands under the administration of three BLM field offices (Cedar City, Fillmore, and Richfield) and two national forests (Dixie and Fishlake). Approximately 77% of Sigurd to Red Butte #2 is located on federal lands while the remaining portions are located on lands under state, local, or private ownership. While the Draft EIS identifies, and is determinative of various alternative routes on state, local, or private lands, the Draft EIS does not address matters affecting these lands. As identified by Section 2.6.2 (page 2-71) the "Agency Preferred Alternative" is the alternative for federal lands <u>only</u>. It is not clear if the Draft EIS identifies any of the environmental effects of the Alternatives on lands outside of federal ownership and control. Potentially, no evaluation or consideration of the effects of any routes on state, local, or private lands in identifying the Preferred Alternative may have occurred. If this is the case Millard County respectfully identifies this as too narrow and is a serious mistake in the Sigurd to Red Butte #2 Draft EIS. All Alternatives, and the N1 Alternative in particular, are proposed on large areas of private land in Millard County. If the Draft EIS is remiss to identify impacts to all lands, the best a reader can do is to infer possible effects occurring on federal lands to privately owned lands.

5B
- Alternative N1 is the longest northern Alternative and crosses 38.4 miles of private land (31.8%) (page 3-254). This Alternative impacts the greatest amount of private land of any of the northern Alternatives (Table 3-61, page 3-255). Underlining the above point, impacts to private lands should not go unrecognized. A clear and separate map identifying all land ownerships underlying, and in proximity to all Alternatives should be provided and would be extremely valuable. The Summary of Stakeholder Comments (Table 2-12, page 2-102) should reflect that Millard County previously expressed concerns with impacts to private lands located in Millard County.

5C
- Alternative N1 has a Preference Ranking of "1" for Geology and Soils, Paleontology, and Biology (Wildlife and Vegetation) (Table 2-11a, page 2-73). No Preference Ranking is provided for Air Quality. The lack of any Preference Ranking for Air Quality is a significant omission. Not all the Alternatives are the same for Air Quality. For example, Table 2-11a identifies N1 = 250 tons PM10, while N2 = 248 tons PM10 emissions. This may appear to be an insignificant PM10 difference but fugitive dust emissions is one of the most critical environmental problems facing Millard County (see below for additional comments of fugitive dust). If the 38.4 miles of private lands have not been included in the N1 air quality analysis, air quality impacts will be significantly higher than the Draft EIS reports.

[1] Alternatives N2 and N3 are identical Alternatives as they affect Millard County. Alternatives N4, N5, and N6 are identical Alternatives as they affect Millard County.

RESPONSE(S)

5A While BLM and USFS can authorize an action only on lands they administer, compliance with NEPA requires federal agencies to disclose the potential consequences of their decisions on adjacent lands, regardless of jurisdiction or ownership. The EIS evaluates potential impacts related to implementation of the Project on federal, state, and private lands. A comparison of the number of miles crossed per jurisdiction is presented by alternative in Table 2-11c.

5B Federal and state jurisdictions, county boundaries, and private lands are depicted on several maps presented in the EIS (refer to Maps 1-1, 1-2, 2-1, and 2-2, for example). Relevant land use features, such as the Millard County Utility Corridor, are presented in MV-14 (Existing Land Use) and MV-15 (Future Land Use) in Volume II of the EIS.

Additional information regarding Millard County's concerns about impacts on private lands located in Millard County has been added to Table 2-12.

5C Rankings of environmental preference presented in the Draft EIS were intended as only a general indication of the overall results of the environmental analysis. Because ranking of alternatives considered in an EIS is not a requirement of NEPA and a reader's understanding of ranking is subjective to their background or interests, environmental preference ranking information has been removed from the EIS. See also response to comment 5A.

COMMENT(S)

5 Millard County (continued)

Sigurd to Red Butte No. 2 Transmission Project EIS
Millard County, Utah – Comments
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5D
- Alternative N1 has the greatest area of both Temporary and Permanent Disturbance (Table 3-2, page3-3). (If privately owned lands have not been included in the environmental analysis to date, the area of disturbance for Alternative N1 will be even greater.) Alternative N1 is also proposed to be located on areas previously affected by the Milford Flat fire. These areas have now been reseeded in an attempt to revegetate these areas and stabilize soils from water and wind erosion (page 3-100). Millard County is regularly and heavily impacted by dust which is a significant safety and public health risk. The Draft EIS identifies "the primary impact associated with implementation of Alternative N1 would be on soils that are susceptible to wind erosion" (p. 3-32). "This alternative (is located on) 68.5 miles of soils moderately susceptible to wind erosion" (page 3-30). From Millard County's experiences any impacts to soils that are even "moderately susceptible" to wind erosion should be avoided completely, or reduced as much as possible. Alternative N1 is the alternative with the highest fugitive dust emissions (Table 3-7, page 3-14). In the face of being the Alternative with the highest levels of both soils disturbance and fugitive dust emissions, Alternative N1 has emerged as the "Environmentally Preferred Alternative." Alternative N1 has the highest negative impacts to Millard County's air quality, further compounding the already severe air quality problems of Millard County. This is exactly what Millard County seeks to avoid.

5E
- Map MV – 1b "Construction Access Levels" identifies the requirement for the construction of new access roads. To reinforce Millard County's concerns related to fugitive dust and impacts to private property, Map MV – 1b identifies all new access roads on the western most portion of N1. Millard County clearly seeks to avoid creating new access roads on areas susceptible to fugitive dust emissions. See also Map MV – 4b.

5F
- Table 3-41 identifies Alternative N1 with the smallest area of "High Impacts" to cultural resources. This may have been one of the most important factors in identifying Alternative N1 as the Environmentally Preferred Alternative. The N1 alternative avoids the Mineral Mountains and in doing so seems to avoid the Mineral Mountains obsidian resources (page 3-145). The Draft EIS fails to identify however why impacts to cultural resources, and the Mineral Mountains obsidian resources in particular, appear to receive a higher weighting than many of the other environmental factors in the consideration of the Alternatives, and the eventual identification of the Environmentally Preferred Alternative (N1).

5G
- Table 3-61, "Alternative Route Comparison Land Use and Recreation Inventory Data and Residual Impacts" (page 3-255) ignores the existing and future impacts to wind resource development. (Table 3-61 does not include BLM, State, or USFS lands in the Future Lands Crossed Analysis). Table 3-61 completely ignores the impacts to existing and planned wind energy systems created by Alternative N1. Map 4-1 identifies that Alternative N1 crosses through the very heart of the Milford Wind Farm. Millard County, in the interests of transmission line routing efficiency and to avoid additional and unnecessary impacts to private property owners, may require that Milford Wind Phases I, II, and III (and any additional phases) be capable of interconnection for transmission line siting. Additionally, Map 4-1 identifies the Mormon Mesa Wind Testing Area as a significant expansion area for future wind

RESPONSE(S)

5D Comment and route preference noted. Potential impacts on soils susceptible to erosion would be mitigated by selective mitigation measures applied in the EIS to minimize or reduce potential impacts and to be incorporated into the POD through development and implementation of an Erosion, Dust Control, and Air Quality Plan and Reclamation, Revegetation, and Monitoring Framework Plan.

5E Comment noted. See responses to comments 5A and 5D. Further, the Proponent has committed to working with private property owners on the location and placement of access roads on their property.

5F As described in Section 3.2.5.3 (refer to subheading Criteria for Assessing Intensity of Impacts), cultural intensity levels were determined based on location of cultural resources within the Project area. Once intensity levels were assigned, a comparison of impacts on cultural resources by miles crossed for each intensity level (refer to Table 3-47).

As described in Section 3.2.5.3 (refer to subheading Data Gaps and Limitations), BLM recognizes the limitations of using a methodology based on locations data. However, given the variations in site recordation standards, the BLM believes the most important information that can be obtained from site forms is location data, which provides for an understanding of site distribution patterns across the Project area. Once an alternative route is selected by the agencies, a Class III intensive field survey of the selected route and associated access roads, substations, and ancillary facilities will be conducted and the results documented in a Class III Technical Report. Following completion of the Class III Technical Report, an HPTP addressing the effects of the proposed undertaking on identified historic properties would be prepared and implemented in consultation with the BLM, SHPO, other involved agencies, and consulting parties.

See also response to comment 5C.

5G The analysis presented in the Draft EIS was based on information provided by the public and agencies, including cooperating agencies, during the scoping period and in summer 2010. Additional information on proposed wind projects in the Project area provided by First Wind and Beaver and Millard counties since the Draft EIS was published has been incorporated into the analysis and is presented in Chapter 3.

BLM considers transmission and wind energy development to be compatible uses of public lands that may be colocated provided that operational, safety, and environmental protection requirements for both uses can be implemented to prevent unacceptable impacts on any resource. Based on additional information provided by First Wind since the Draft EIS was published, the BLM facilitated a series of meetings with Rocky Mountain Power and First Wind and meetings with Millard and Beaver counties to discuss solutions that could accommodate both projects in the area of the planned Milford Wind Corridor, LLC Phase III project and proposed Milford Wind Corridor, LLC Phase IV project. The meetings were held in August and early September 2011.

5 Millard County (continued)

Sigurd to Red Butte No. 2 Transmission Project EIS
Millard County, Utah – Comments
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5G energy systems. Fully expecting that the Sigurd to Red Butte #2 transmission line owner/operator will prohibit the crossing of the line by another, Alternative N1 has the distinct and real potential to permanently separate the distribution and transmission lines of Milford Wind Phase I and II from Phase III (as identified by Map 4-1), and other future wind energy systems. Millard County identifies that the impacts to wind energy development created by Alternative N1 would be more than just "impairing future development" (page 3-258). Rather, permanently eliminating various site planning and transmission line options unnecessarily restricts wind system operators, and the permitting and regulatory agencies, to provide future wind energy systems with the least impacts as possible.

5H
- Table 3-78 "Estimated Construction Costs" provides the estimated construction costs for all Alternatives. Alternative N6 (Proponent's Proposed Action) is the least expansive of all the northern Alternatives. While identifying estimated construction costs, the Draft EIS does not elaborate and discuss direct and indirect Proponent costs, or considers the cumulative cost effects, as provided for other EIS analysis. Millard County identifies that construction costs should not be discounted entirely and warrant a full discussion and consideration in a meaningful way before identifying any Preferred Alternative(s).

5I
- Map MV – 5b "Water Resources Inventory and Impacts" identifies various shallow groundwater resources at the western-most portion of Alternative N1. Millard County is aware that ground water is the principle source of water for various ranching and grazing activities in the area. Alternative N1 potentially poses an additional threat to the integrity of ground water resources for ranching and grazing, and one that can and should be avoided.

5J
- Map MV – 15b "Future Land Use Inventory and Impacts" should be corrected for clarity and accuracy. Map MV – 15b tries to convey a large volume of information but in doing so is difficult to read. Many of the shading patterns used are similar, leading to confusion. The materials contained by Map MV – 15b may be better conveyed using 2 maps. Further, as Map MV – 15b is a map purporting to convey future land use impacts the location of the Milford Wind Farm should be identified, clearly showing that Alternative N1 bisects existing and future phases.

5K
- The Draft EIS has effectively addressed Millard County's concerns related to visual and other impacts, to the Cove Fort area. From the visualization materials contained in the Draft EIS it appears that any visual impacts to Cove Fort are either eliminated or minimized significantly.

5L
- The Millard County General Plan represents an articulation of public policies determined necessary to achieve the goals and objectives of its citizens, and to promote the overall well-being of existing and future residents. The Draft EIS correctly identifies that all northern Alternatives are inconsistent with the Millard County General Plan, as adopted. Any Alternative located in Millard County will require a Millard County General Plan amendment. The comments contained herein have been almost exclusively focused on the Alternative N1 since it presents the most concerns and creates the most negative impacts to Millard County.

5H Comment Noted Estimated construction costs are presented in Section 3.2.12.1 as information necessary for analysis of possible effects on social and economic conditions in the Project area. The information was not directly considered in the comparison of alternatives but may be used to inform the agencies' selection of the Agency Preferred Alternative on federal lands.

5I Comment and route preference noted. The EIS considers design features of the Proposed Action (Section 2.3.5.2) and selective mitigation measures (Section 3.1.3) to reduce impacts on water resources such as wells, springs, streams, rivers, and wetlands, including designing the transmission line to span these features and requirements for handling and disposing of hazardous materials used in construction.

5J See responses to comments 5B and 5G.

5K Comment noted.

5L See response to comment 5G. Based on new information provided since publication of the Draft EIS, including information from Millard County, Alternative N2-A has been selected as the Agency Preferred Alternative.

COMMENT(S)

5 Millard County (continued)

Sigurd to Red Butte No. 2 Transmission Project EIS
Millard County, Utah – Comments
7/18/2011

5L Considered against the Millard County General Plan, as adopted, a very preliminary assessment would identify Alternative N1 as being the least viable Alternative for a successful General Plan Amendment by Millard County.

5M
- The recognition of any of the Sigurd to Red Butte #2 transmission line Alternatives as a possible Millard County General Plan Amendment is a critical policy decision for the County. The policies of Millard County are such that once identified as a Millard County General Plan – Preferred Utility Corridor, the County will work to encourage future power and utility transmission lines to be located within its boundaries, or immediately adjacent. Understanding that a Preferred Utility Corridor carries significant policy standing, Millard County will act cautiously and prudently before designating any Preferred Utility Corridor. Millard County must be confident, that once identified, a Preferred Utility Corridor will meet the existing and future needs of Millard County, and its role in energy corridor planning.

On behalf of the residents of Millard County, thank you for the opportunity to present our concerns, comments and input to the Sigurd to Red Butte #2 Transmission Project Draft EIS.

Millard County Board of County Commissioners:

Commissioner Daron P. Smith
Commissioner Bart Whatcott
Commissioner Jim Withers

cc. File

5

RESPONSE(S)

5M Millard County policies and General Plan Amendment process were referenced in Sections 1.6 and 1.9. See also responses to comments 5G and 5L.

COMMENT(S)

RESPONSE(S)

6 Enterprise City

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
BLM Public Open House Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at a public meeting or mail it to the following address.

Attn: Tamara Gertsch
c/o Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Shalyn D Nelson Date: 6-29-2011
Title: City Council Mem Organization that You Represent: Enterprise City Council Self ☐
Mailing Address: P.O. Box 105 City: Enterprise State: UT Zip: 84725
Telephone: 435-878-2461

Comments: *(Please use back if additional space is needed)*

6A The proposed routes remaining near the existing easement are our preferred alternatives. As we have expressed before, the route that approaches Enterprise and proceeds up Ox Valley to the south of town (AIT route #3) is unacceptable to us as a city. Our water supplies for the city are found within this route & we oppose any activity in that Ox valley area.

Please Note:

Comments are due by July 18, 2011

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

6A Comment and route preference noted.

COMMENT(S)

RESPONSE(S)

7 Five County Association of Governments

Five County Association of Governments

1070 West 1600 South, Building B
St. George, Utah 84770

Fax (435) 673-3540

SOUTHWEST UTAH

Post Office Box 1550
St. George, Utah 84771

Office (435) 673-3548

June 14, 2011

Tamara Gertsch, Project Manager
Sigurd to Red Butte No. 2 Transmission Project
Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

Dear Tamara:

Thank you for the opportunity to review the Draft Environmental Impact Statement that analyzes the proposed Sigurd to Red Butte 345kV transmission line project. The installation of the proposed power line is vital to accommodate the demand for electrical power in southwestern Utah. Local officials in southwestern Utah have been closely involved in the analysis of alternative route alignments, and have participated as cooperating agencies.

The draft EIS adequately documents and evaluates a number of alternatives. No single alternative can address and mitigate every concern raised by the myriad of interested parties participating in the process. However, after reading through the DEIS, it is evident that Alternatives N4 and S2 (IPP West), the environmentally preferred alternative, rank highly in terms of environmental preference, local support, and minimization of impacts by paralleling existing high voltage power facilities.

7A Not every local jurisdiction prefers Alternative S2, due mainly to concerns regarding adequate separation from existing lines and the need to provide redundancy by routing the line in a separate corridor. After reviewing the DEIS, it is evident that adequate separation can be accomplished, and that fewer conflicts will be encountered by selecting Alternative S2.

More importantly, the DEIS notes that the additional power to be delivered by the proposed transmission line is needed to support the growing population of southwestern Utah. Installation by mid-2014, as projected, will bring power resources needed no later than 2014. Time is of the essence. Adequate environmental analysis is complete. The project should move forward as quickly as possible.

Sincerely,

Kenneth L. Sizemore
Executive Director

cc: Beaver County Commission
Iron County Commssion
Washington County Commission

BEAVER GARFIELD IRON KANE WASHINGTON

7A Comment and route preference noted.

COMMENT(S)

RESPONSE(S)

8 Iron County

RA 7/19

Commissioners
Wayne A. Smith
Lois L. Bulloch
Alma L. Adams
Clerk • David I. Yardley
Treasurer • Geraldine S. Norwood
Recorder • Deborah B. Johnson
Assessor • Dennis W. Ayers
Auditor • H. Eugene Adams
Attorney • Scott F. Garrett
Sheriff • Mark O. Gower

IRON COUNTY

68 South 100 East • Parowan, Utah 84761 • Phone (435) 477-8300 • Fax (435) 477-8847

July 12, 2011

BLM Cedar City Field Office
Attn: Tamara Gertsch
176 East D.L. Sargent Drive
Cedar City, UT 84721

Dear Ms. Gertsch,

8A Iron County would like to provide comment regarding the Draft Environmental Impact Statement for the Sigurd to Red Butte N0. 2 – 345kV Transmission Project. We are in concurrence with the Environmentally Preferred Alternative as described in the draft EIS, and feel that the route following the existing IPP West corridor (S2) through the county is in the best interest of the citizens of Iron County. Iron County agrees that this route will not pose any problems with wild horse management or any existing or proposed wilderness areas in the Antelope Ridge area. The S2 alternative route will have the least impact on agricultural lands and stays east and south of the unincorporated town of New Castle.

We appreciate the BLM's efforts to keep the Iron County Commission informed through this process and look forward to continued cooperation and coordination as the project moves closer to being final.

Sincerely,

Alma L. Adams
Chairman, Iron County Commissioners

cc: David Yardley, County Clerk
Mike Worthen, IC Natural Resources

DEPT. OF THE INTERIOR
RECEIVED
JUL 19 2011
BUREAU OF LAND MANAGEMENT
CEDAR CITY, UTAH

8A Comment and route preference noted.

COMMENT(S)

RESPONSE(S)

9 Washington County

Tamara Gertsch
BLM National Project Manager
5353 Yellowstone Road
Cheyenne, WY 82009
Office phone: 307-775-6115
Cell phone: 307-287-3656
Office Fax: 307-775-6203
Email: Tamara_Gertsch@blm.gov
----- Forwarded by Tamara Gertsch/WYSO/WY/BLM/DOI on 07/14/2011 11:53 AM -----

Dean Cox
<Dean.Cox@washco.utah.gov>

07/14/2011 10:46 AM

To
David Smith <David.Smith@tac-denver.com>, "Gibson, Aaron" <Aaron.Gibson@PacifiCorp.com>, "Tamara_Gertsch@blm.gov" <Tamara_Gertsch@blm.gov>, "sharon_knowlton@blm.gov" <sharon_knowlton@blm.gov>, "reilly@wapa.gov" <reilly@wapa.gov>, "Cox, Mark" <Mark.Cox@PacifiCorp.com>

cc

Subject
Washington County regarding TransWest & Sigurd Red Butte No. 2

Good Morning:

Attached please find a position letter from Washington County, Utah regarding the two NEPA reviews that are currently underway on power line transmission projects that will impact our county. Signed hard copies are being mailed to the addressed recipients.

Sincerely,
Dean J. Cox
Washington County Administrator(See attached file: Sigurd to Red Butte Number 2 and TransWest.doc.pdf)

2

COMMENT(S)

RESPONSE(S)

9 Washington County (continued)

WASHINGTON COUNTY
197 East Tabernacle ♦ St. George, Utah 84770
Telephone: (435) 634-5700 ♦ Fax: (435) 634-5753
Employer of Choice

COMMISSION

DENNIS DRAKE
Chairman
denny.drake@washco.utah.gov

ALAN D. GARDNER
Halan.gardner@washco.utah.gov

JAMES EARDLEY

July 14, 2011

Tamara Gertsch, Project Manager, Sigurd to Red Butte No. 2 Transmission Project
Bureau of Land Management
Wyoming State Office
P.O. Box 20678
5353 Yellowstone Road
Cheyenne, WY 82003
utsrbproj@blm.gov

Sharon Knowlton, Project Manager, TransWest Express Transmission Project
Bureau of Land Management
Wyoming State Office
P.O. Box 20678
5353 Yellowstone Road
Cheyenne, WY 82003
sharon_knowlton@blm.gov

Liana Reilly, Project Manager, TransWest Express Transmission Project
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228
reilly@wapa.gov

Re: Sigurd to Red Butte No. 2 and TransWest Express Transmission Project

Dear Ms. Gertsch, Ms. Knowlton and Ms. Reilly:

Washington County, Utah, appreciates the opportunity to provide comments on the recently released Draft Environmental Impact Statement for the Sigurd to Red Butte No.2 345 kV Transmission Project.

Washington County is a Cooperating Agency for the Sigurd-Red Butte No.2 project, proposed by Rocky Mountain Power (RMP). Washington County also is a Cooperating Agency for the TransWest Express Transmission Project, proposed by TransWest Express LLC (TWE). Both projects are being reviewed in separate Environmental Impact Statements by the Wyoming State Office of the Bureau of Land Management, pursuant to the National Environmental Policy Act. Western Area Power Administration also is a joint lead agency for the TWE Project EIS.

Washington County supports the rapid and responsible development of both of these significant transmission lines. We understand both projects will provide important upgrades to the regional electrical system, will increase electrical reliability across the West, and will contribute significant property tax revenues to benefit all citizens in Washington County.

COMMENT(S)

9 Washington County (continued)

9A Therefore, we ask that the Bureau of Land Management carefully and thoughtfully pursue siting plans, in collaboration with the U.S. Forest Service, to ensure that both transmission lines can be located reliably and responsibly within Washington County.

We understand that the Dixie National Forest area in northern Washington County presents some siting challenges. We appreciate the companies' commitment to "work together to develop a joint siting plan for the transmission projects within this area," as outlined in a June 6, 2011, letter sent by both companies to BLM.

9B To that point, we request that BLM continue to evaluate two of the three corridors presented in the Draft EIS for Sigurd-Red Butte No. 2. We oppose the Pinto Creek corridor as shown in the Sigurd-Red Butte No.2 Draft EIS and request that this corridor be removed from further consideration.

The BLM and U. S. Forest Service in their land use planning processes must consider all reasonably foreseeable future actions, including projects currently undergoing NEPA review such as the Sigurd to Red Butte No. 2 345 kV Transmission Project and the TransWest Express Transmission Project. As dictated by federal policy and the Energy Policy Act of 2005, the agencies must consider both environmental impacts and reliability standards in siting of electric transmission projects on federal land. The agencies' decisions regarding use of federally designated utility corridors and new corridors must strike a careful balance between minimizing environmental impacts and maximizing electric system reliability.

9C Washington County supports the development of both transmission projects, and urges a coordinated and holistic planning approach by all of the agencies involved. An integrated NEPA review and evaluation process is essential. All options must be on the table, including a reduction in the inventory of roadless areas, to reliably accommodate both transmission line projects.

Agencies must ensure that the decisions they make today do not restrict or impede opportunities for development of projects tomorrow – potentially putting jobs and economic development dollars at risk.

Sincerely,

Dean J Cox
Washington County Administrator

cc: Chairman Dennis B. Drake
Commissioner James J. Eardley
Commissioner Alan D. Gardner

RESPONSE(S)

9A The USFS has been participating as a cooperating agency in preparation of the EIS. BLM and USFS have been working collaboratively in responding to the application for the Project and will continue to do so throughout the decision and construction phases, if needed.

9B No alternative routes were eliminated from further consideration between the Draft EIS and the Final EIS. Based on the designation of a portion of the Mountain Meadows Historic Site as the Mountain Meadows Massacre Site NHL, one additional route alternative and one route variation in the southern Project area (Alternatives S7 and S7-A, respectively) are analyzed in the Final EIS. BLM and USFS are aware that Washington County approved a Conditional Use Permit for the central corridor routes (Alternatives S2, S4, and S7) in October 2011.

9C No alternatives were eliminated from further consideration between the Draft EIS and the Final EIS. An additional alternative route and route variation in the southern Project area (Alternatives S7 and S7-A) are analyzed in the Final EIS as a potential alternative route to minimize impacts on the Cove Fort IRA and the Mountain Meadows Historic Site and the Mountain Meadows Massacre Site NHL.

COMMENT(S)	RESPONSE(S)

9 Washington County (continued)

Tamara Gertsch
BLM National Project Manager
5353 Yellowstone Road
Cheyenne, WY 82009
Office phone: 307-775-6115
Cell phone: 307-287-3656
Office Fax: 307-775-6203
Email: Tamara_Gertsch@blm.gov
----- Forwarded by Tamara Gertsch/WYSO/WY/BLM/DOI on 09/15/2011 04:05 PM -----

Gretchen Merrill <gmerrill@fs.fed.us>

07/21/2011 08:08 AM

To
sharon_knowlton@blm.gov, tamara_gertsch@blm.gov

cc
Janel A McCurdy <janelmccurdy@fs.fed.us>, Rob Macwhorter <rmacwhorter@fs.fed.us>, Gretchen Merrill <gmerrill@fs.fed.us>

Subject
Fw: Quick Notes from Conversation with Dean Cox - Washington County Administrator

1

COMMENT(S)

RESPONSE(S)

9 Washington County (continued)

Sharon and Tamara -- After Tamara sent us the letter from Washington County supporting both SRB and TWE siting in the county, Kenton Call, our public affairs person, called Dean Cox, Washington County Manager, to get some clarification on the letter. The summary of their conversation is below, for the record.

Our conversation with the Region 4 Deputy Regional Forester Jerry Perez on Monday went well. In preparation for his meeting with the power company executives July 29 he asked for more detailed information on potential impacts to the IRAs and maps which showed crossing of National Forests and IRAs in more detail. I think that is exactly what we have talked about last week and what you are working with the contractors to prepare. I really appreciate your help with this.....G.

Gretchen Merrill
Public Service Group Officer
Dixie National Forest
phone 435 865-3741 fax 435 865-3791
----- Forwarded by Gretchen Merrill/R4/USDAFS on 07/21/2011 07:57 AM -----

Dean Cox
<Dean.Cox@washco.utah.gov
>

07/19/2011 04:31 PM

To
Rob Macwhorter <rmacwhorter@fs.fed.us>, Charles K Call <ckcall@fs.fed.us>

cc
Bevan Killpack <bkillpack@fs.fed.us>, Gretchen Merrill <gmerrill@fs.fed.us>

Subject
RE: Quick Notes from Conversation with Dean Cox - Washington County Administrator

Kenton,

Thank you for visiting with me on the telephone this morning.

Your summary is pretty accurate in most points. I'll offer a bit more clarification on some points if you don't mind.

All of the Commissioners have an active interest in the project.

2

COMMENT(S)

RESPONSE(S)

9 Washington County (continued)

Commissioner Eardley approved the letter before mailing. (The other two Commissioners had already left to attend the National Association of Counties (NACO) annual convention in Portland.)

Three alternative routings have been identified and studied. This is how we've named them: an eastern route (Pinto), a center route (Mountain Meadow), and a western route (Ox Valley). These may not be official names, but they are the names we have used to avoid confusion when we're discussing the different routes.

Property tax revenue is based on the value of the improvements in each county. Projects that span multiple counties such as Kern River, IPP, etc.
are centrally assessed by the state. That means these companies don't pay each county individually. The state then disburses to each county based on the value of the improvements within the respective county.

Again, please don't hesitate to call if you have a question.

Dean

From: Rob Macwhorter [mailto:rmacwhorter@fs.fed.us]
Sent: Tuesday, July 19, 2011 12:44 PM
To: Charles K Call
Cc: Bevan Killpack; Dean Cox; Gretchen Merrill
Subject: Re: Quick Notes from Conversation with Dean Cox - Washington County Administrator

Thanks Kenton this helps alot.....Gretchen, this info needs to be transferred to BLM as we continue to build possible alts for Trans West.....Rob

Robert G. MacWhorter
Forest Supervisor
Dixie National Forest
Intermountain Region, R4

1789 North Wedgewood
Cedar City, Utah, 84721

Office: 435-865-3701
Cell: 435-559-3701
email: rmacwhorter@fs.fed.us

Charles K
Call/R4/USDAFS

To

07/19/2011 12:28 PM — Rob Macwhorter/R4/USDAFS@FSNOTES

cc

Gretchen Merrill/R4/USDAFS@FSNOTES, Bevan Killpack/R4/USDAFS@FSNOTES, dean.cox@washco.utah.gov

Subject

COMMENT(S)

RESPONSE(S)

9 Washington County (continued)

Quick Notes from Conversation with Dean Cox -
Washington County Administrator

Rob:

I had a discussion with Dean Cox, Washington County Administrator, about the letter (dated July 14) that Washington County sent regarding the Sigurd to Red Butte No 2 and TransWest Express Transmission projects.

I asked Dean three primary questions: 1) How is the cooperating agency agreement working? 2) What are the county's property tax interests (identified in the letter)? 3) Who wrote the letter? Why it was written?
Any follow-ups expected?

Here are some quick bullets under each question:

1) How is the cooperating agency agreement working?
- Dean suggested that the cooperating agency relationship seems to be working fine.
- We discussed some of the past challenges with cooperating agencies and the differences between NFMA and FLPMA. Doesn't seem to be an issue right now.
- County would like to see their role as more "coordinating" rather than "cooperating. County will scale their involvement in projects depending upon the type of project and county's interests.
- No follow up needed.

2) What are the county's property tax interests (identified in the letter)?

- Counties recieve property tax benefits from powerlines that are sited in the county. For this reason, Washington County would love to see both lines sited within the county (as opposed to a NV option for TransWest Express).
- For lines that cross county boundaries, the state recieves the taxes and then redistributes the money to the counties in proportion to how many lines cross the county.

3) Who wrote the letter? Why it was written? Any follow-ups expected?
- Dean wrote the letter. Commissioner Eardley has been most involved from the Commission.
- County does not expect any additional follow-up from us.

Some additional thoughts from our discussion:

4

COMMENT(S)

RESPONSE(S)

9 Washington County (continued)

- County would prefer that both projects be located within or adjacent to the existing corridor, but if only one line can be fit, then they would prefer the Sigurd to Red Butte line to get first preference.
Alternatively, they would like to see the TransWest Express line go through Ox Valley (not sure this is even an alternative).
- County has some concerns over the scale, scope, and size of IRAs within the county.
- County is concerned over the density of powerlines in the existing corridor and while it is not being studied the county would have preferred an alternative look at siting a line through the I-15 corridor. According to Dean, Rocky Mountain Power is looking at doing a study in 2018 to locate a new line down I-15.

Hope this helps. I have copied Dean on this note to ensure that if I misrepresent something from our discussion he can correct it with our group.

Thanks,

K

C. Kenton Call
Dixie National Forest
(435) 865-3730 fax (435) 865-3791
cell (435) 691-0768 ckcall@fs.fed.us

5

Special Interest Groups

COMMENT(S)

RESPONSE(S)

10 First Wind

Peter Sullivan <psullivan@firstwind.com>

07/19/2011 12:00 AM

To "utsrbproj@blm.gov" <utsrbproj@blm.gov>

cc

bcc

Subject Sigurd to Red Butte No. 2 Transmission Project EIS

Tamara,

Please find our comments attached. My adobe software isn't working correctly, so I apologize for this being in Msoft word. I will send as PDF tomorrow.

Best,

Pete

Peter J. Sullivan

First Wind

psullivan@firstwind.com

617-620-7850

1

COMMENT(S)

10 First Wind (continued)

firstwind
CLEAN ENERGY. MADE HERE.

BLM Cedar City Field Office
Attention: Tamara Gertsch
176 East D.L. Sargent Drive
Cedar City, UT 84721
(435) 586-2401

Re: Sigurd to Red Butte No. 2 345kV Transmission Project Draft EIS

To Whom It May Concern:

This letter provides the comments of First Wind Energy, LLC (First Wind) on the draft EIS for the Rocky Mountain Power's (RMP) proposed Sigurd to Red Butte No. 2 345kV Transmission Project.

First Wind, through its project-level affiliates, owns and operates the 203.5 MW Milford Wind Corridor Phase I Project (Milford Phase I) and the 102.0 MW Milford Wind Corridor Phase II Project (Milford Phase II) north of Milford, Utah, as well as an approximately 88-mile long 345kV generator lead line (Gen Lead line) that connects these two projects to the IPP substation north of Delta, Utah. In addition, First Wind has proposed the Milford Wind Corridor Phase III Project, a private-land project west and south of Milford Phase I, and the Milford Wind Corridor Phase IV Project[1], which will be located immediately north of the Milford Phase II Project.

First Wind has reviewed the Sigurd to Red Butte Transmission project draft EIS, and understands that several alternatives to the route proposed by RMP were analyzed by the Bureau of Land Management and the cooperating agencies. First Wind is concerned with potential adverse effects of the proposed RMP transmission line (and particularly of some of the alternatives being considered in the EIS) on our existing and proposed wind projects. In addition, these potential impacts on our projects, and the impacts on certain environmental and other resources related to the co-location of the RMP line and our projects, do not appear to have been adequately recognized or evaluated in the DEIS. 10A

More specifically, First Wind understands that Alternative N1 (identified in the draft EIS as the environmentally preferred alternative) would run east-to-west through the middle of the proposed Milford Phase IV project area, and after turning south would cross the Gen Lead line west of the Milford Phase I project area. Similarly, Alternatives N2 and N4 would run east-west through the southern end of the Milford Phase I area and through the middle of the proposed Milford Phase III project area. 10B

At this time, First Wind requests that the BLM not approve alternatives N1, N2 or N4, or any other alternative that follows the above-described alignments through the area of the Milford Wind projects. First Wind also requests that the BLM include additional analyses in the Final EIS with respect to the 10C

[1] Milford Wind Corridor IV was previously named Milford Wind Corridor Phase III, and is currently under review by BLM.

179 LINCOLN STREET, SUITE 500 | BOSTON, MA 02111 | 617.980.2869 | WWW.FIRSTWIND.COM

RESPONSE(S)

10A The analysis presented in the Draft EIS was based on information provided by the public and agencies, including cooperating agencies, during the scoping period for the EIS in January and February 2010 and during the data collection phase of the EIS conducted in the summer and fall of 2010. Additional information on proposed wind projects in the Project area provided by First Wind and Beaver and Millard counties since the Draft EIS was published has been incorporated into the analysis and is presented in Chapters 3 and 4. Based on the new information provided by First Wind and discussion with First Wind since the Draft EIS was published, the Proponent supplied a letter endorsing Alternative N2-A so that both utility projects can be accommodated.

10B A wind-site testing right-of-way grant affords protection to the grantee against other wind development applications; however, it does not provide a right-of-way exclusion area for other compatible uses for which the BLM may approve (43 CFR 2808.15[b]). See also response to Comment 10A.

COMMENT(S)

10 First Wind (continued)

First Wind
July 18, 2011
Page 2

issues and impacts that are the basis for our objections to these alternatives. The reasons for these two requests are as follows:

10C
- The EIS does not address the presence of Milford Wind Corridor Phase III in the discussion of cumulative impacts. Also, existing references to Milford Wind Corridor Phase III in the EIS should be updated to the Project's new name of Milford Wind Corridor Phase IV. Milford Wind Corridor Phase III and Milford Wind Corridor Phase IV are both currently under review by Beaver County and BLM (Fillmore Field Office), respectively. Milford Wind Corridor Phase I and II are both fully constructed and operating.

10D
- Placing an overhead line through the middle of the Milford Phase IV project area, through the margin of the Milford Phase II/Milford Phase IV project areas, or through the Phase I and Phase III project areas, will create perching opportunities for raptors (including protected bald and golden eagles) and other birds that could increase the risk of take by the surrounding wind turbines. We have similar concerns with respect to the segment of Alternatives N2 and N3 that would run north-to-south just east of the proposed Phase IV project area boundary. In addition to being a potential environmental resource impact that needs to be addressed in the EIS, this could increase the risk of liability to First Wind, and potentially to BLM, under federal wildlife protection laws. First Wind has been working closely with USFWS and/or BLM to address these very issues on our facilities. The allowance (or restriction) of perching opportunities near operating wind turbines has been a pivotal concern expressed by the federal agencies. First Wind has been required to assess the implications of wind turbine placement near structures that can attract eagles and other avian species. Furthermore, First Wind has been asked to restrict the placement of turbines near such structures. The EIS must acknowledge that the introduction of transmission line poles will increase perching opportunities immediately adjacent to the wind energy facilities, and as a result will increase the potential for eagle and other raptor mortality when the birds forage or take flight from these perches.

10E
- Section 4.3.4.2, Cumulative Impacts, does not address the cumulative impacts to species protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Act. The discussion (especially as it applies to alternatives N1, N2 and N4) focuses on incremental loss or degradation of habitats used by specialty species, and concludes that an additive effect may occur. However, the section neither acknowledges nor quantifies the additional impact to avian species, especially perching raptors and eagles, when a transmission line with perching opportunities is sited in the immediate vicinity of operating and planned wind energy generation facilities.

10F
- Likewise, for all alternatives that are not co-located with wind energy facilities, the EIS must acknowledge that although the presence of RMP transmission facilities may lead to incremental loss or degradation of habitats and other like-resources (in comparison to co-location in a corridor where transmission facilities already exist), that such location will have a significantly

RESPONSE(S)

10C The Milford Wind Corridor, LLC Phase III project was not publicly announced until June 2011 when First Wind filed a conditional use permit application with Beaver and Millard counties. This information has been incorporated into the analysis and is presented in Chapters 3 and 4. See also responses to comments 10A and 10B.

10D BLM considers transmission and wind energy development to be compatible uses of public lands that may be colocated provided that operational, safety, and environmental protection requirements for both uses can be implemented to prevent unacceptable impacts on any resource. Based on additional information provided by First Wind since the Draft EIS was published, the BLM facilitated a series of meetings with the Proponent, First Wind, and Millard and Beaver counties to discuss solutions that could accommodate both projects in the area of the planned Milford Wind Corridor, LLC Phase III project and proposed Milford Wind Corridor, LLC Phase IV project. The meetings were held in August and early September 2011. Based on new information presented in those meetings, additional analysis has been included in Section 4.3.4 to address potential cumulative impacts on raptors and eagles for each action alternative. See also responses to comments 10A, 10B, and 10C.

10E Based on biological survey information provided by First Wind since the Draft EIS was published, additional analysis has been included in Section 4.3.4 to address potential cumulative impacts on raptors and eagles for each action alternative.

10F See response to comment 10E.

COMMENT(S)

10 First Wind (continued)

First Wind
July 18, 2011
Page 3

10F lower likelihood of eagle and other raptor mortality provided that the perching opportunities are further away from existing or future wind energy generation facilities.

10G
- The DEIS does not adequately evaluate the impact of the proposed alternative or other alternatives on the existing and proposed wind energy infrastructure. The BLM issued wind energy testing leases to First Wind and others with the clear understanding and intent that commercial facilities could be developed on those lands. While Chapter 3 of the DEIS does identify the existence of renewable energy projects, it provides no context or analysis of the potential impacts of locating the line within an existing or proposed commercial wind energy development.

10H
- Section 4.3.14 Health and Safety does not address health and safety related to co-locating wind turbines and transmission lines. Construction, operation and maintenance of First Wind's wind energy generation facilities require the use of specialized cranes and equipment, and the lifting and lowering of large wind turbine components. Conducting such activities in the direct vicinity of a transmission line increases the risk accidents occurring between the two facilities.

First Wind requests continued discussions with the BLM and RMP on the alignment variations and other potential measures to address these concerns, and we look forward to the additional analysis in the final EIS of these important issues. We understand the importance of RMP's proposed project and are hopeful that a mutually agreeable solution can be reached in the near future among the various interested parties, including BLM, RMP, First Wind and the affected counties.

If you have any questions, please contact me at 617-620-7850.

Sincerely,

Peter J. Sullivan
Director, Development

RESPONSE(S)

10G See responses to comments 10A, 10B, 10C, and 10D.

10H To provide for safety of company personnel and assets, the Proponent has established a line-routing criterion of an offset distance three times rotor diameter (effectively, 3.5 times the rotor diameter) from the farthest edge of the turbine to the right-of-way for transmission lines with voltages of 230kV or greater. The Proponent believes that maintaining this separation distance will allow for the safe operation and maintenance of wind facilities and the transmission line. Additional information on health and safety related to colocated facilities is provided in the National Electric Safety Code, which describes the laws and safety requirements for any work around energized transmission lines.

COMMENT(S)

RESPONSE(S)

11 Rocky Mountain Power

"Gibson, Aaron"
<Aaron.Gibson@PacifiCorp.com>

07/15/2011 09:30 AM

To
"utsrbproj@blm.gov" <utsrbproj@blm.gov>, "Rob Wilson (Rob_Wilson@BLM.gov)" <Rob_Wilson@BLM.gov>, "Tamara Gertsch (tamara_gertsch@blm.gov)" <tamara_gertsch@blm.gov>

cc
"Smith, Stuart" <Stuart.Smith@PacifiCorp.com>, Cindy Smith <clsmith@epgaz.com>

bcc

Subject
Proponent Sigurd - Red Butte Comment Letter on draft EIS

The company would like to express our appreciation for the efforts to date from the BLM on getting the EIS to this stage of development and on schedule. Attached is a copy of our letter containing comments from the Company regarding the draft EIS. A hard copy of the letter is being mailed to Rob. We sincerely appreciate the professionalism demonstrated throughout the process and look forward to the final record of decision being issued allowing the project to be placed in service by June 2014. Call me if there are any questions.

Aaron Gibson

Office (801) 756-1201

Cell (801) 376-5244

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COMMENT(S)

11 Rocky Mountain Power (continued)

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

July 15, 2011

Cedar City Field Office, BLM
Attn: Rob Wilson
176 East D.L. Sargent Dr.
Cedar City, UT 84721

Tamara Gertsch
Bureau of Land Management
P.O. Box 21150
5353 Yellowstone Road
Cheyenne, WY 82003

Re: Rocky Mountain Power Sigurd to Red Butte Draft Environmental Impact Statement (DEIS) Comment Letter

Dear Mr. Wilson and Ms. Gertsch,

Rocky Mountain Power (the Company), a division of PacifiCorp, expresses our thanks for your diligent efforts on the development and publication of the Draft Environmental Impact Statement (DEIS) for the Sigurd to Red Butte 345 kV #2 Transmission Line Project (herein referred to as the Project). We appreciate both your dedication and professionalism as the Project has progressed through the National Environmental Policy Act (NEPA) process.

We would like to reemphasize how critically important this Project is to ensuring reliable service to our retail and network customers. As a regulated public utility, the Company is required to provide electric service to all customers within its service territory without discrimination and at the lowest cost after consideration of risk. This obligation frames the process we use to make decisions regarding the maintenance and operation of and upgrades to our transmission system.

Our comments concern the following topics:

- Additional information that should be considered by the BLM.
- Further explanation of Rocky Mountain Power's purpose and need.
- Alternatives analyzed in the DEIS.

Additional information that should be considered by the BLM

RMP Public Outreach Efforts

11A The Company is pleased to see that the results of many of our public outreach efforts have been included in the DEIS. The Company incorporated feedback received during landowner meetings and scoping meetings in early 2010 to develop a significant number of re-routes to address concerns brought up by interested parties at the local, state and federal level. The Company has received positive feedback from local officials on our public outreach efforts due to our extensive efforts to mitigate concerns brought up by citizen and officials. Section 5.4 of the DEIS, "Proponent-Initiated Activities" provides a discussion of the Community Working Groups organized by the Company to collaborate with interested parties on the Project. However, the Company has conducted a number of other outreach activities that should be

RESPONSE(S)

11A Additional information on proponent-initiated outreach activities provided by the Proponent since the Draft EIS was published has been included in Section 5.4 and Appendix B.

11 Rocky Mountain Power (continued)

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

11A included in the DEIS. Additional activities should be included in Appendix C of the DEIS under the proponent's public outreach initiated activities and can be provided by the Company.

First Wind Proposed Milford Wind Farm Expansion(s)

11B Over the last several months, the Company has been working to coordinate with First Wind regarding their proposed expansion plans for the Milford Wind Farm (MWF). The originally proposed Milford Wind Phase III (now referred to as Phase IV) corridor shares a common area with the Company's proposed Project near Milford. The Company requests that the BLM consider the timing of the SF299 submittals for both projects. Rocky Mountain Power submitted its SF299 for the SRB transmission line in December of 2008. Since that time, First Wind has proposed expansion of the MWF in the same area. Prior to their proposal and the submittal of the Milford Wind Corridor Phase III SF299 in January 2011 (NEPA log number DOI-BLM-UT-W020-2011-0002-EA), the Company spent significant time and effort in consideration of its routes. The Company will continue to seek a solution to co-locate both projects with First Wind and will coordinate with the BLM if any route revisions are necessary.

11C The MWF occupies large continuous blocks of both private and federal owned property. The Company would like to request that the BLM consider accessibility issues of the IPP corridor in the areas of Link 360 and 365. The IPP corridor is a federally-designated utility corridor and is recognized as the environmentally preferred alternative in the DEIS. The Company requests that BLM identify links 360 and 365 as vital portals to access the IPP corridor.

Hybrid Route

11D In January of 2011, the BLM submitted a letter to the Company requesting additional information regarding the possibility of a "hybrid" route between alternatives S2 and S4 in order to avoid the Mountain Meadows area and minimize impacts to the Cove Mountain Inventoried Roadless Area. The Company provided a response on February 4, 2011 indicating that the new alternative route would require adding multiple line crossings of other extra high voltage transmission lines and would decrease line reliability. The letter also expressed concern that although re-routing the line may reduce impacts to the Inventoried Roadless Area, it may increase impacts to other resources, specifically cultural resources.

Since that time the BLM has asked for even further clarification on the technical feasibility of the 'hybrid' route. Additional detailed engineering is currently being conducted to fully assess the feasibility of not only constructability of the alternative hybrid route, but also the possible negative impact to the line rating. Once this assessment is complete, a separate letter will be submitted to the BLM. The Company respectfully requests that the BLM recognize that it's suggested alternative route is very complicated and requires extensive coordination with other utilities as well as detailed ground-truthing of the existing conditions at the potential crossing locations. Due to the number of sensitive resources in this area, ongoing technical analyses may likely result in route refinements that will need to be analyzed in the Final EIS.

TransWest Express (TWE)

The Company and TWE are continuously working on resolutions to any pinch points between the projects. As stated in a joint letter submitted to the BLM on June 6, 2011, electric reliability and compliance with industry standards is mandatory for both the Company and TWE. Although minimum separation distances have been proposed, both parties agree that additional separation beyond the minimum criteria would further enhance system reliability and should be considered. The Company and TWE will continue to work together to develop feasible line siting solutions.

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11B BLM considers transmission and wind energy development to be compatible uses of public lands that may be colocated provided that operational, safety, and environmental protection requirements for both uses can be implemented to prevent unacceptable impacts on any resource. Based on additional information provided by First Wind since the Draft EIS was published, the BLM facilitated a series of meetings with the Proponent, First Wind, and Millard and Beaver counties to discuss solutions that could accommodate both projects in the area of the planned Milford Wind Corridor, LLC Phase III project and proposed Milford Wind Corridor, LLC Phase IV project. The meetings were held in August and early September 2011. On November 18, 2011, in response to the new information provided, the Proponent submitted a letter to BLM also supporting another alternative, Alternative N2-A.

11C See response to comment 11B.

11D USFS requested consideration of an alternative route variation made up of a combination (or "hybrid") of Alternatives S2 and S4 to minimize impacts on the Cove Fort IRA and the Mountain Meadows Historic Site and Mountain Meadows Massacre Site NHL. As part of BLM's preliminary consideration of this alternative route, BLM requested technical information regarding the feasibility of such an alternative route from the Proponent. BLM received information on the technical feasibility of the potential alternative route from the Proponent in January and September 2011. Upon receipt of the information from the Proponent, BLM requested that the DOE Office of Electricity Delivery and Energy Reliability conduct an independent review of the technical information and general assessment of feasibility provided by the Proponent.

On November 9, 2011, DOE provided a letter response concurring with the Proponent's assessment that the use of the hybrid route could impact the reliability the transmission line due to potential risk to the system introduced by the multiple crossings of other existing transmission lines that would be required along this alternative route. However, DOE did not discount the alternative as technically or economically infeasible. In a letter dated September 28, 2011, responding to BLM regarding questions posed by DOE during their independent review, the Proponent stated they would prefer to avoid line crossings of the IPP and Sigurd to Red Butte No. 1 transmission line due to ongoing safety issues and additional ongoing risk to reliability, the Proponent would be willing to construct the Project using the Alternative S7 alignment. Alternative routes that combine elements of Alternatives S2 and S4 are analyzed in the Final EIS as Alternatives S7 and S7-A.

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11 Rocky Mountain Power (continued)

ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

Rocky Mountain Power's Purpose and Need

11E The Company believes that the proponent's Purpose and Need does not receive adequate consideration in the EIS. The Purpose and Need is a critical reason for proposing the project and should be included in more detail in Chapter 1 of the EIS. If inclusion is not possible, more frequent reference to Appendix A should be included.

Alternatives analyzed in the DEIS

11F Upon review of the DEIS, the Company understands that the analysis of the alternatives indicates that greater environmental impacts exist along the Company's proposed route than along any other alternative. The Company understands from this analysis that selection of this alternative could result in greater mitigation which equates to increased costs and potential schedule delays that are adverse to the best interest of its customers. As a result of the analysis, the Company is prepared to offer support for the BLM's environmentally preferred alternative.

Rocky Mountain Power appreciates the opportunity to work with the BLM and looks forward to continued collaboration on the Project. Please feel free to contact me with any questions at 801-756-1201 or Aaron.Gibson@PacifiCorp.com.

Sincerely,

Aaron Gibson
Customer and Community Manager

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RESPONSE(S)

11E Per 40 CFR 1502.13, the purpose and need statement must briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the Proposed Action. Further, BLM H-1790-1 (Section 6.2) requires that the purpose and need statement for an externally generated action describe the BLM purpose and need for the action (i.e., responding to application for right-of-way) rather than Proponent's purpose and need. To draw this distinction, the Proponent's purpose and need, including a discussion on reliability, was placed as an appendix in the EIS. Additional references to Appendix A, Proponent's Purpose and Need for the Project, have been added to the text of the document, where appropriate.

11F Comment noted. In addition, on November 18, 2011, in response to the new information provided, the Proponent submitted a letter to BLM also supporting another alternative, Alternative N2-A.

COMMENT(S)

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12 TransWest Express LLC

"Garry Miller" <Garry.Miller@tac-denver.com>

07/18/2011 04:33 PM

To <utsrbproj@blm.gov>, <Tamara_Gertsch@blm.gov>

cc <Sharon_Knowlton@blm.gov>, <reilly@wapa.gov>, "David Smith" <David.Smith@tac-denver.com>

bcc

Subject Sigurd to Red Butte No. 2 - 345 kV Transmission Project Draft EIS

Tamara,

Please see attached comment letter regarding the Sigurd to Red Butte No. 2- 345kV Transmission Project draft Environmental Impact Statement.

Thank you for the opportunity to provide these comments.

Garry

<<2011-07-18 TWE Sigurd_Red Butte DEIS Comments.pdf>>

Garry L. Miller

Director – Land and Environmental Affairs

TransWest Express LLC

555 Seventeenth Street

Suite 2400

Denver, CO 80202

Direct: 303.299.1546

E-mail:garry.miller@tac-denver.com

Web site:http://www.transwestexpress.net/

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COMMENT(S) | **RESPONSE(S)**

12 TransWest Express LLC (continued)

TRANSWEST EXPRESS LLC
555 Seventeenth Street
Suite 2400
Denver, CO 80202
Tel 303.298.1000
Fax 303.299.1356

July 18, 2011

Sent Via Email
utsrbproj@blm.gov

Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, Utah 84721

Attention: Ms. Tamara Gertsch

Re: Draft Environmental Impact Statement for the Sigurd to Red Butte No. 2 – 345 kV Transmission Project

Ladies and Gentlemen:

TransWest Express LLC ("TWE") submits these comments on the Draft Environmental Impact Statement ("DEIS") prepared for Rocky Mountain Power's ("RMP") proposed Sigurd to Red Butte No. 2 – 345 kV Transmission Project. TWE has proposed the TransWest Express Transmission Project ("TWE Project"), portions of which would be located in the same or nearby corridors to the proposed Sigurd to Red Butte No. 2 transmission line[1]. TWE and RMP have been working together to resolve siting issues for the proposed routes of their respective projects and will continue to work together on these issues. TWE respectfully submits these comments on the Sigurd to Red Butte No. 2 DEIS.

Responsiveness of Alternatives to Purpose and Need

12A The Sigurd to Red Butte No. 2 DEIS describes both the applicant's purpose and need (§1.2.1 and Appendix A) and the agencies' purpose and need (§1.2.2). The agencies' purpose and need is to respond to RMP's application for a right-of-way for the Sigurd to Red Butte No. 2 Transmission Project across federal lands. TWE understands that the Department of the Interior's National Environmental Policy Act ("NEPA") regulations state that while the needs and goals of the applicant may be described as background information, it is the BLM's purpose and need for action that will determine the range of alternatives. 43 C.F.R. §46.420(a)(2). Still,

[1] For purposes of this letter, RMP's proposed action is referred to as the Sigurd to Red Butte No. 2 Transmission Project. The Sigurd to Red Butte No. 2 transmission line is used when referring to the transmission line facilities to be built as a part of the Sigurd to Red Butte No. 2 Transmission Project.

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12 TransWest Express LLC (continued)

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12A it is clear that in responding to RMP's right-of-way application, BLM must consider the purpose and need for the right-of-way; any analysis of the application which disregards the applicant's stated need for the right-of-way would not produce reasonable alternatives. The Interior Board of Land Appeals ("IBLA") recognized this fact in *Bristlecone Alliance, et al.*, 179 IBLA 51 (2010), where opponents of a coal-fired power plant objected to BLM's issuance of rights-of-way to the plant developer. The opponents contended that BLM improperly considered the applicant's purpose and need in developing the alternatives analyzed in the EIS. The IBLA acknowledged that BLM's NEPA Handbook requires the BLM's purpose and need to be described; nonetheless, the IBLA concluded that the range of alternatives must be dictated by the stated goal of the project, and "only those alternatives that accomplish the goal need be considered." 179 IBLA at 65. Many courts have echoed the view that, for a project proposed by a private party, the objectives of the applicant must be considered in determining whether an alternative is reasonable. *See Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190 (D.C. Cir. 1991); *Colorado Envt'l. Coal. v. Dombeck*, 185 F.3d 1162 (10th Cir. 1999); *Citizens' Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1030 (10th Cir. 2002) (the agency should "give substantial weight to the goals and objectives of that private actor"); *Biodiversity Conservation Alliance v. BLM*, 608 F.3d 709 (10th Cir. 2010).

A significant, if not paramount, purpose of RMP's proposed Sigurd to Red Butte No. 2 Transmission Project is to provide increased transmission reliability. The Summary of the DEIS notes that RMP's proposed route was selected, in large part, because it provides physical separation from the existing high voltage transmission lines in the area (*i.e.*, the IPP 500 kV transmission line and the Sigurd to Red Butte No. 1 345 kV transmission line[2]), thus promoting RMP's reliability objectives. DEIS at p. S-12. Similarly, Appendix A, which sets forth RMP's purpose and need in detail, emphasizes the need for a 345 kV transmission line in a different corridor from the existing 345 kV line to the maximum extent practical[3]. DEIS at p. A-1. The stated need for a second 345 kV line between the Sigurd and Red Butte substations in a different corridor than the existing RMP Sigurd to Red Butte No. 1 transmission line is "to add reliability in case of a potential transmission outage in the area that could interrupt electric supply to customers." DEIS at p. A-1.

Several of the alternatives do not accomplish the goal of achieving increased system reliability because they would place the Sigurd to Red Butte No. 2 transmission line in the same corridor as the existing Sigurd to Red Butte No. 1 transmission line (*e.g.*, Alternatives S2, S4). The DEIS fails to analyze the impacts of these alternatives on the stated goal of increased reliability. Table 2-11d within the DEIS provides a comparison of 'System Reliability' issues for the various routes; however, the comparative statements fail to make comparisons on the basis of the proposed Sigurd to Red Butte No. 2 transmission line being in a different corridor

[2] The Sigurd to Red Butte No. 1 345 kV transmission line is also described as the Sigurd to Three Peaks to Red Butte transmission line. DEIS at p. A-1.
[3] For a definition of 'corridor' see Report to Congress: Corridors and Rights-of-Way on Federal Lands, U. S. Department of Agriculture et al (November 7, 2005) at p. vii. "*Existing designated transmission and distribution corridors* on Federal land are defined as all electric transmission line ROW corridors that have been formally designated by law, Secretarial order, land use planning process, or other management decision."

RESPONSE(S)

12A During the public comment period, it was recommended that BLM analyze effects on system reliability associated with each alternative route. When analyzing impacts, BLM is not required to speculate about all conceivable or worst-case impacts. Rather, BLM must evaluate the reasonably foreseeable significant effects of the Proposed Action. Predicting the likelihood of an event that could result in outages would require complex system and statistical analyses. Given the number of variables and the assumptions that would have to be made for such analyses, any resulting impact predictions would be speculative.

While some alternative routes may provide for greater reliability (refer to Table 2-11d), all alternative routes analyzed in detail in the EIS are technically and economically feasible. They are supported by the Proponent as such, including those colocated with existing transmission lines.

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12 TransWest Express LLC (continued)

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12A than the existing Sigurd to Red Butte No. 1 transmission line. Comparisons are made with respect to lines being in 'parallel' with other transmission lines. However, there is no specific disclosure or analysis comparing the proposed action and the alternatives with regard to RMP's purpose and need to site the Sigurd to Red Butte No. 2 transmission line in a different corridor than the Sigurd to Red Butte No. 1 transmission line. While some of the issues cited within the system reliability sections of Table 2-11d are pertinent to overall transmission system reliability as administered by the National Electricity Reliability Council (NERC) and the Western Electricity Coordinating Council (WECC), there is a lack of sufficient specific system reliability analysis as it pertains to providing reliable service to southwestern Utah.

The only specific analysis listed with respect to reliability impacts associated with the Sigurd to Red Butte No. 2 transmission line in Table 2-11d is the quantification of various line crossings. While line crossings are inevitable when siting major transmission lines such as the Sigurd to Red Butte No. 2 transmission line, typical utility practice is to minimize the number of crossings to the greatest extent possible. TWE notes that all of the Southern Area alternative routes for the Sigurd to Red Butte No. 2 transmission line (DEIS Figure 2-10) include at least one line crossing of the existing Sigurd to Red Butte No. 1 transmission line. Three of the Southern Area alternative routes (S1, S4, and S5) only have a single line crossing due to the fact that the line is proposed to be located east of the existing Sigurd to Red Butte No. 1 transmission line. Two of the Southern Area alternatives (S3 and S6) require an additional line crossing. The environmentally preferred alternative (S2) requires two additional crossings for a total of three line crossings of the existing Sigurd to Red Butte No. 1 transmission line. Minimization of line crossings is a factor in system reliability and therefore a part of RMP's purpose and need. This should be considered in selection of the agency preferred alternative.

12B TWE notes that Section 368 of the Energy Policy Act of 2005 requires agencies, including BLM and the Forest Service, to take into account the need for new electricity transmission facilities to, among other purposes, improve reliability. The DEIS does not adequately address system reliability consistent with the applicant's purpose and need when describing the consequences of the several alternatives.

Environmentally Preferred Alternative

TWE recognizes that the environmentally preferred alternative includes much of the §368 (of the Energy Policy Act of 2005) designated transmission corridors approved in the Records of Decision for the Programmatic EIS on the designation of energy corridors on federal lands in the eleven western states (*i.e.*, Segment 116-206 of the designated corridors sometimes referred to as the IPP Corridor). However, the Records of Decision issued by both the BLM and the Forest Service on the Westwide Corridors EIS make it clear that the decisions do not require right-of-way applicants to place their facilities within the designated corridors and do not prevent the agencies from approving rights-of-way outside of the designated corridors. While an agency is required to disclose the environmentally preferred alternative in the record of decision, 40 C.F.R. §1505.2(b), an agency is not required to select that alternative. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). Certainly, an agency may conclude that the

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12B See response to comment 12A.

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environmentally preferred alternative also satisfies the other purposes and needs for the proposed action. However, the BLM and the Forest Service must weigh other statutory obligations, including the need for improved reliability of the electric transmission system, in reaching its decision on the Sigurd to Red Butte No. 2 transmission line proposal. In weighing these competing goals, BLM and the Forest Service should consider whether siting the Sigurd to Red Butte No. 2 transmission line in the same corridor as well as crossing the Sigurd to Red Butte No. 1 transmission line twice or more will result in the need for future additional transmission lines because the Sigurd to Red Butte No. 2 Transmission Project may not achieve the goal of improved reliability which is fundamental to RMP's purpose and need. *See* DEIS at p. A-4[4].

12C There is no discussion in the DEIS of the environmental impacts of future transmission line construction which could be necessitated by a route for the Sigurd to Red Butte No. 2 transmission line which does not achieve the goal of improved reliability.

Electricity from Renewable Sources

Except for mention in passing that the proposed Sigurd to Red Butte No. 2 transmission line will provide "options" to integrate new energy resources, including renewable energy, DEIS at p. A-11, there is no indication in the DEIS that the planned transmission line will wheel power from renewable energy sources. In contrast, the TWE Project is designed to transmit approximately 20,000 gigawatt hours per year of electric energy generated primarily from renewable energy sources in Wyoming. *See* TransWest Express Transmission Project – Preliminary Right-of-Way Application SF 299 (January 2010) at p. 16. Therefore, the TWE Project will facilitate the White House's goal of obtaining 25% of the nation's electricity from renewable sources by 2025 and is consistent with the direction contained in Section 4 of Secretarial Order No. 3285 that BLM encourage the timely development of renewable energy and associated transmission. To the extent that locating the Sigurd to Red Butte No. 2 transmission line in the same corridor as has been proposed by TWE will displace the TWE line, the DEIS should disclose that such alternative will make it more difficult to meet the White House's goals for renewable energy or to comply with Secretarial Order No. 3285.

12D

TWE filed its right-of-way application at approximately the same time as RMP filed its application for the Sigurd to Red Butte No. 2 Transmission Project and, pursuant to the policies of the BLM and the Forest Service to encourage applicants to site proposed transmission lines within the designated energy corridors, TWE attempted to utilize the IPP corridor where possible. *"New Energy Frontier," A Joint Report to Congress on Siting Energy Development Projects on Federal Lands* (May 2011) at p. 62-63. It appears likely that, at least in some segments, such as Alternative S2, siting the Sigurd to Red Butte No. 2 transmission line within the IPP corridor will preclude TWE from using that same corridor (at significant incremental cost and delay to TWE) because of multiple line crossings by the Sigurd to Red Butte No. 2 transmission line. The fact that the NEPA process for the TWE Project has moved more slowly

12E

[4] "In the event a transmission line fails to perform in accordance with these [NERC and WECC] standards, the Company would be required to remedy the problem to the satisfaction of WECC, which historically has resulted in restricting the operating capacity of the lines to levels that will not cause disruptions to the grid and/or the construction of additional transmission line(s)."

12C See response to comment 12A.

12D The cumulative effects of the Proposed Action and other current and future projects and activities, including the TransWest Express Transmission Project, are discussed in Chapter 4. When analyzing cumulative effects, BLM is not required to speculate about all conceivable impacts. Rather, BLM must evaluate the reasonably foreseeable significant effects of the Proposed Action. Predicting the likelihood that a decision on the Proposed Action would impact the goals and objectives or project costs or schedule of another proposed project, which also is considering a similar alignment as one alternative route, would require that a number of variables and assumptions would have to be made for such analysis. Any resulting impact prediction would be highly speculative.

The information on current and future projects analyzed in this Final EIS is current as of June 2012. As of this date, it is our understanding the BLM and Dixie National Forest are considering a range of reasonable alternatives in preparation of the administrative Draft EIS for the TransWest Express Transmission Project, including alternative routes that cross into Nevada and avoid the Dixie National Forest.

12E See response to comment 12D.

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than for the Sigurd to Red Butte No. 2 Transmission Project should not result in a decision to allocate that corridor exclusively to the Sigurd to Red Butte No. 2 transmission line, particularly given RMP's stated goal to locate that line in a different corridor than the existing IPP and the Sigurd to Red Butte No. 1 transmission lines so as to maximize reliability under the NERC and WECC guidelines.

Supplemental DEIS

12F TWE understands that, the agencies are now considering a modified alternative in the southern portion of the project that would essentially combine Alternatives S2 (IPP West) and S4 (IPP East) in the vicinity of the Mountain Meadows Massacre Site[5]. Under such an alternative, the route of the Sigurd to Red Butte No. 2 transmission line would travel approximately 1500 feet west of the existing transmission line in the IPP Corridor until it neared the location of the Mountain Meadows Massacre Site and then would move east to a location approximately 1500 feet east of the existing transmission line so as to avoid proximity to the Mountain Meadows Site. The result of such a hybrid alternative (which was not examined in the DEIS) would be to preclude the ability to locate any other transmission line within the IPP Corridor in that area. If the agencies elect to consider this hybrid alternative in the final EIS, such an alternative would be a substantial departure from the alternatives examined in the DEIS and would therefore require a supplemental EIS.

12G A supplemental EIS is required when an agency makes substantial changes in the proposed action that are relevant to environmental concerns. 40 C.F.R. §1502.9(c)(1)(i). If a new alternative is qualitatively within the spectrum of alternatives that were discussed in the draft and is only a "minor variation" from the alternatives analyzed in the draft, then a supplemental DEIS is not required. Council on Environmental Quality "Forty Most Asked Questions" 46 Fed. Reg. 18026, 18035 (March 17, 1981). However, where a new alternative "entails a different configuration of activities and locations, not merely a reduced version of a previously-considered alternative," a supplemental EIS is required. *Dubois v. U.S. Dep't of Agriculture*, 102 F.3d 1273, 1292 (1st Cir. 1996). In the Otero Mesa case, the Court of Appeals for the Tenth Circuit explained that an agency may not decline to analyze the alternative it actually adopts, simply because the overall level of environmental protection it offers falls between that offered by the alternatives that were analyzed. *State of New Mexico v. Bureau of Land Management*, 565 F.3d. 683 (10th Cir. 2009). While a hybrid alternative as described above might provide additional protections for the Mountain Meadows site, the DEIS does not analyze the cumulative impacts from such an alternative if the TWE line is not co-located with the Sigurd to Red Butte No. 2 transmission line. For example, the DEIS concludes that co-location of the Sigurd to Red Butte No. 2 transmission line in the IPP corridor along with the TransWest line under Alternative S2 (and S4) would minimize fragmentation of habitat and therefore is anticipated to be "a beneficial impact for generalist species and the regional ecological condition." DEIS at p. 4-26. The DEIS does not examine the cumulative impacts of the TWE line when added to the impacts of the Sigurd to Red Butte No. 2 transmission line if the

[5] The Mountain Meadows Massacre Site was designated a National Historic Landmark on June 30, 2011.

RESPONSE(S)

12F See response to comment 12D.

12G In response to agency and public comments received on the Draft EIS and additional information received since the Draft EIS was published, an additional alternative route, Alternative S7 (a combination of two previously analyzed alternative routes, Alternatives S2 and S4), and one minor route variation, Alternative S7-A, were developed for analysis in the southern Project area and presented in the Final EIS. These alternative routes do not constitute a substantial change of alternatives.

The cumulative effects analysis presented in the Draft EIS evaluates the reasonable foreseeable significant effects if all future projects are implemented. Additional discussion has been added to Chapter 4 to clarify that if not all future projects were constructed, cumulative impacts would be lower than if all future projects currently proposed (as of June 2012) are implemented.

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12 TransWest Express LLC (continued)

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12G lines are not co-located. Similarly, the DEIS concludes that co-location of the Sigurd to Red Butte No. 2 transmission line and the TWE line in the IPP corridor under Alternatives S2 and S4 "would minimize the establishment of new access roads into areas not suitable for OHV and other motorized travel, minimizing the cumulative effects on USFS Areas of Potential Wilderness and semi-primitive motorized and non-motorized areas." DEIS at p. 4-37. There is no analysis of the cumulative effects on those resources in the event the lines are not co-located under Alternatives S2 and S4. Consequently, if the agencies anticipate considering an alternative in the final EIS which creates a hybrid between Alternatives S2 and S4, it will be necessary to circulate a supplemental DEIS to disclose to the public the impacts of that hybrid alternative.

Analysis of Impacts to Cultural Resources

The DEIS describes the impacts on cultural resources of the proposed action and the several alternatives using Class I and Class II data on the respective routes and notes that, "once a route is selected," DEIS at p. 3-157, intensive Class III surveys will be conducted and impacts on any newly identified sites would be mitigated in accordance with the Programmatic Agreement. The Programmatic Agreement outlines a phased approach to the identification, assessment, and treatment of cultural resources for the project. TWE endorses this approach as effective in disclosing potential impacts while also minimizing unnecessary survey costs that may be incurred by an applicant in conducting Class III surveys on alternatives which may not be selected as the agency preferred alternative. A Programmatic Agreement allows the agency to fulfill its obligations under Section 106 of the National Historic Preservation Act in support of its Record of Decision. Cultural resources would continue to be considered during the post-EIS phase of the project and Class III surveys would be conducted on the selected route, associated access roads, substations, and similar ancillary facilities. DEIS at p. 3-146. The Programmatic Agreement allows the agencies flexibility in selecting an agency preferred alternative constrained only by the range of alternatives described in the EIS, 40 C.F.R. §1505.1(e).

Thank you for your consideration of these comments. We appreciate the opportunity to comment on the Sigurd to Red Butte No. 2 – 345 kV Transmission Project draft EIS.

Respectfully submitted,

Garry L. Miller
Director – Land & Environmental Affairs

cc: Sharon Knowlton, BLM – TWE Project Manager
Liana Reilly, Western Area Power Administration – TWE Project Manager

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COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress

"KevinCMueller" <kevin@uec-utah.org>
07/18/2011 04:51 PM

To <utsrbproj@blm.gov>
cc <gregory.osborne@duke.edu>
bcc
Subject Sigurd to Red Butte Transmission Project Draft EIS: UEC comments 1 of 3

	Description: logo

July 18, 2011

BLM Cedar City Field Office

Attention: Tamara Gertsch

176 East D.L. Sargent Drive

Cedar City, Utah 84721

Comments on Sigurd to Red Butte Transmission Project

Draft Environmental Impact Statement (DOI-BLM-UT-c010-2009-0048-EIS)

1

COMMENT(S)

13 Utah Environmental Congress (continued)

We speak for the Trees

Utah Environmental Congress

July 18, 2011

BLM Cedar City Field Office
Attention: Tamara Gertsch
176 East D.L. Sargent Drive
Cedar City, Utah 84721

Comments on Sigurd to Red Butte Transmission Project
Draft Environmental Impact Statement (DOI-BLM-UT-c010-2009-0048-EIS)

Dear Ms. Gertsch,

The Utah Environmental Congress (UEC) appreciates this opportunity to provide comments on the DEIS that has been prepared for the Sigurd to Red Butte No. 2-345kV Transmission Project. UEC is an interested party and would like to be maintained on the contact and mailing lists for this project.

Introduction; Incorporation of Comments

UEC's primary objective is the protection of National Forests in Utah and the wildlife that depend upon them. UEC is an interested party with concerns, recommendations, and objections relating to the various action alternatives proposed, as well as the supporting DEIS impacts analysis, because the proposal will inevitably result in some negative impacts to resources on the Fishlake and Dixie National Forests. These negative impacts range from irreversible and irretrievable commitments and losses of inventoried unroaded/undeveloped areas, inventoried potential wilderness areas, IRA, soils, forests, wildlife individuals and communities and their habitats.

13A For reasons outlined below and in UEC's scoping comments, we urge selection of the environmentally preferred alternative over any other action alternative, and over the applicant's preferred alternative in particular.

UEC supports and agrees with the (more BLM-focused) DEIS comments submitted by the Southern Utah Wilderness Alliance (SUWA). To that effect and to reduce redundancy UEC incorporates by reference SUWA's DEIS comments into these comments.

1817 S. Main Street; Ste. 10 • Salt Lake City, UT 84115
Ph (801) 466-4055 • Fax (801) 466-4057
www.uec-utah.org

RESPONSE(S)

13A Comment and route preference noted.

COMMENT(S)

13 Utah Environmental Congress (continued)

Forest Plan/LRMP Direction; NFMA Direction; LRMP Amendments Necessary

There are serious concerns with seemingly incorrect or incomplete consideration in the DEIS concerning the manner in which each action alternative is or is not consistent with the management requirements prescribed by the LRMPs for the Fishlake and Dixie National Forests. While the DEIS does not address this issue head-on, on thing is certain: the applicant's preferred alternative would be in substantial violation of the Dixie and Fishlake N.F. LRMPs. While all of the other action alternatives are or may be in violation with applicable LRMPs, the violations are more significant (as defined under the NFMA, not NEPA) for the Applicant's preferred action. These LRMP conflicts include Forest Plan standards and guidelines, management direction, management requirements, management area prescriptions, objectives, VQO and related LRMP ROD-level commitments.

13B This insufficient DEIS consideration of the applicable LRMP and NFMA direction is foundational and systemic in nature. For example when disclosing LRMP direction specific to visual resources management, the DEIS never discloses or considers the binding commitments made in the Fishlake LRMP VQO designations, and corresponding LRMP standards. Some of the action alternatives would violate the VQOs that are not considered. The treatment is similarly insufficient for the management requirements applicable for Fishlake LRMP

13C Management Areas 3A, 4A, 4B, 6B, and 5A. As a final example, the DEIS indicates the LRMP utility corridors are not mapped. We looked, and they are mapped in both applicable LRMPs.

13D LRMP and NFM A monitoring duties (including those for MIS and other quantitative management indicator monitoring) triggered by the proposed actions and the requisite LRMP amendments are granted similarly missing to insufficient consideration in the DEIS.

Applicable USFS NFMA and NEPA implementing policies, together, direct that a proposed action must be made consistent with the LRMP. If it cannot be adjusted such that it is consistent with LRMP direction, the choice may be made to either deny (in this case) the applicant's request or to include requisite site-specific LRMP amendments as a component of the proposed action. The same tests and refinements apply to action alternatives. Because the LRMP violations are most obvious and glaring for the proponents proposed action we will use that as an example below, but the same problems to varying degrees with the rest of the action alternatives.

13E In short, the DEIS fails to meet duties imposed by the NFMA and NEPA due to its failure disclose and then analyze in detail each (presumably unavoidable) LRMP conflict for each alternative, and then include the corresponding site-specific LRMP amendment as a part of each respective action alternative to be analyzed in detail as required by the tests and standards under NFMA and NEPA.

13F There may be many reasons for this systemic failure to meet legal duties imposed by the NFMA. It looks like *one* among these is that the DEIS appears to skip back and forth between use management requirements from the LRMPs in effect and that apply …. And unfinished draft revised plan documents shelved years ago. Use of direction specific to those unfinished sets of revised plan documents to the exclusion of the applicable LRMPs would constitute failure to take NEPA's hard look, and a failure to ensure that projects and plans be consistent with the LRMP – a duty imposed by the NFMA.

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RESPONSE(S)

13B Information on minimum visual quality objectives for Fishlake National Forest Land and Resource Management Plan (LRMP) Management Areas has been included in Section 3.2.8.5.

USFS has documented for the project record that all action alternatives considered in the EIS are compliant with the Dixie National Forest LRMP and Fishlake National Forest LRMP and applicable standards and guidelines.

13C Section 3.2.9.4 (refer to subheading Linear Facilities and Utility Corridors) of the EIS states that "designated utility corridors…within…Fishlake and Dixie National Forests are identified in their land use plans." USFS utility corridors located on the national forests also are mapped in MV-14.

13D A Biological Specialist Report presenting analysis of the Regional Forester's sensitive species list and species identified as Management Indicator Species (MIS) is included as Appendix E of the EIS to make the analysis more available for public review. The report discloses the potential effects of the Proposed Action, in accordance with USFS requirements and summarizes the determination of effects for each alternative to inform a determination of LRMP consistency.

13E See response to comment 13B.

13F See response to comment 13B.

COMMENT(S)

13 Utah Environmental Congress (continued)

13F Use of the shelved and unfinished draft forest plan sets of documents to the exclusion of direction in the actual LRMPs triggers an additional legal inadequacy because the shelved plans were promulgated via use of the illegal '2005 NFMA rule.' The USFS was prohibited years ago from developing or implementing LRMPs under the '2005 NFMA rule' by a Federal Court Order that threw out and enjoined the rule. So, aside from not being the controlling NFMA direction, use of the shelved and unfinished draft forest plan 'sets of documents' would constitute violation of the Federal Court Order that enjoined the government from using such NFMA direction.

The draft EIS is incomplete because it fails to take a "hard look" at the proposed project's direct, indirect, and cumulative effects on climate change.

13G The Supreme Court has affirmed that federal agencies must take a "hard look" at the environmental consequences of its proposed action. Because BLM 1) failed to analyze the effects the project may have on climate change, and 2) failed to consider relevant scientific information and several effects that the proposed act could have on climate change, the draft EIS is incomplete.

NEPA mandates that agencies take a "hard look" at the environmental consequences of their proposed actions. Kleppe v. Sierra Club, 427 U.S. 390, 409 n.21 (1976). To take a "hard look" at the environmental consequences, the plain language of NEPA requires that agencies identify "methodologies" and "analyses" used to determine the environmental impacts of the proposed action. See 40 C.F.R. 1502.24. Furthermore, mere "anecdotal evidence" is not sufficient to support the agency's conclusions. Nat'l Audubon Soc'y v. Dep't of Navy, 422 F.3d 174, 194 n. 9 (4th Cir. 2005).

13H NEPA also mandates that the agency analyze the cumulative effects of the project. In determining the cumulative effects that the proposed project may have, an analysis must be done with regards to effects on climate change. Ctr for Biological Diversity v. Nat'l Highway Traffic Safety Admin., 538 F.3d 1172, 1217 (9th Cir. 2008). In fact, "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." Id. Futhermore, "the fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency's] control . . . does not release the agency from the duty of assessing the effects of its actions on global warming within the context of other actions that also affect global warming." Id.

13I First, the draft EIS is incomplete because BLM completely failed to analyze the effects the project will have on climate change. The draft EIS is completely devoid of scientific reference with regards to climate change. Instead, the EIS arbitrarily claims that "the lack of specific scientific tools designed to predict climate change on regional or local scale limits the ability to quantify future potential impacts." EIS p, 3-18. This dismissal is exactly what courts have tried to avoid by stating that "the fact that climate change is largely a global phenomenon . . . does not release the agency from the duty of assessing the effects of its actions on global warming within [this] context." Ctr. For Biological Diversity, 538 F.3d at 1217. This arbitrary dismissal

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RESPONSE(S)

13G The potential impact on climate change was not raised as an issue during scoping. Further, there are no established or required thresholds to determine when quantitative analysis of climate change is required. Nonetheless, for disclosure purposes, estimated greenhouse gas emissions related to Project-related activities have been added to Section 3.2.1. In addition, further qualitative analysis regarding the impacts of greenhouse gas emissions on climate change in the Great Basin region, with scientific reference, has been included in the Final EIS in Section 3.2.1.3.

13H As discussed in Sections 3.2.1.3 and 4.3, based on the cumulative character of the phenomena of greenhouse gas emissions and global climate change, it is impractical to link the effects of climate change to greenhouse gas emissions associated with a particular project. See also response to comment 13G.

13I See response to comment 13H.

COMMENT(S)

13 Utah Environmental Congress (continued)

demonstrates that the draft EIS does not take the necessary "hard look" at the proposed project's effects on climate change. Therefore, the draft EIS is incomplete.

13J Second, it is insufficient to solely analyze what affects this project will have on climate change. There should be some discussion of how future shifts in climate will affect the proposed project. As wind patterns shift, as the Rocky Mountain Region becomes drier and hotter, there is a chance restoration efforts will be affected. Since the draft EIS conducts no analysis into how climate change may affect this project, it is incomplete.

Failing to analyze how this project will affect, and be affected by, climate change, makes this draft EIS incomplete. This lack of analysis runs against NEPA's intent of ensuring that the agency acts on complete information. See Robinson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). For these reasons the draft EIS fails to take a "hard look" at the environmental consequences of the proposed action.

The draft EIS is inadequate because it fails to specify why the proponent chose its alternative

NEPA mandates that agencies keep the public informed and involved to the "extent practicable."

13K Even though the draft EIS admits that the proponent's preferred alternative is one of the most environmentally damaging, the EIS fails to adequately explain why the proponent prefers it. As a result, the public cannot understand the merits of this alternative. Therefore, the draft EIS is inadequate.

The plain language of NEPA's implementing regulations mandate that agencies involve the public in preparing and implementing their NEPA procedures. In fact, agencies must "make diligent efforts to involve the public" when implementing NEPA procedures. 40 C.F.R. § 1506.6. Furthermore, regulations command that agencies "involve environmental agencies, applicants, and the public, to the extent practicable." 40 C.F.R. § 1501.4. Finally, "public scrutiny [is] essential to implementing NEPA." 40 C.F.R. § 1500.1.

Public involvement is a crucial aspect of NEPA, as it helps agencies make proper and informed decisions. Consequently, a reviewing court decides whether an EA is valid by asking whether the "content and preparation foster both informed decision-making and *informed public participation*." State of Cal. v. Block, 690 F.2d 753, at 761 (9th Cir. 1982) (emphasis added).

13L Here, the draft EIS fails to involve, inform, and allow for the public participation because it fails to explain why the proponent chose its preferred alternative. The proponent's preferred alternative does not follow an existing transmission line corridor. The draft EIS admits that "colocation" (having the new transmission line lie adjacent to existing transmission lines) creates much less environmental effects to raptors, segmentation of habitat, loss of wilderness, etc. However, in spite of being more environmentally damaging, the proponent chooses its preferred alternative. The only reason espoused by the proponent, for choosing its alternative, is that it provides "for physical separation from other existing high-voltage power lines." Draft EIS p. S-12. The EIS gives no explanation as to why this is beneficial. It is left entirely unclear.

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RESPONSE(S)

13J Additional discussion has been added to Section 4.3. Design features of the Proposed Action (Section 2.3.5.2) and mitigation measures applied for protection of other resources (Section 3.1.3), such as treatment of noxious and invasive weeds during construction and post-construction monitoring, also will mitigate cumulative impacts of climate change on the Project.

On August 16, 2010, the Proponent provided a letter advising the BLM of the route alternative they had identified as the Proponent's Preferred Alternative, which was reflected in the Draft EIS. In the letter, the Proponent explains that the identification of their proposed alternative was based on the provision for physical separation from existing transmission lines and length of the alternative route (i.e., shortest distance provides the least cost passed on to ratepayers). The explanation provided by the Proponent in the letter is included in Section 2.6.3, Proponent's Preferred Alternative.

13K Physical separation provides increased reliability to the overall grid through the wider separation of assets that could otherwise be disrupted as the result of a single extreme event (e.g., storm or structural failure) if the lines were all placed in proximity to each other. As a regulated utility, the Proponent has an obligation to comply with reliability standards set by the North American Electric Reliability Corporation and the Western Electricity Coordinating Council and to address reliability within its existing transmission system and in development of additional transmission capacity. A detailed description of the Proponent's purpose and need for the Project, including addressing reliability, is presented in Appendix A.

13L See response to comment 13I.

13 Utah Environmental Congress (continued)

13L NEPA is supposed to help agencies make informed decisions. Inherent in this, is the idea that there will be a cost benefit analysis. Here, no specific benefits are given as to why the proponent prefers its alternative. Without this information the agency cannot make an informed decision. Therefore, the draft EIS is inadequate.

What are the benefits of the proponent's preferred alternative, that could outweight the enormous detriments that it can cause to the environment? UEC strongly urges adopting the environmentally preferred alternative, as it will be economic and more environmentally safe.

The draft EIS is inadequate under Forest Service Sensitive Species Policy/Directives; Monitoring

An EIS is inadequate if it is arbitrary and capricious. When an agency does not follow its own rules and regulations, its decision is arbitrary and capricious. Here, the agency does not follow USFS rules and regulations with regards to the draft EIS. Therefore the decision and the FONSI should be reversed and remanded.

All implementing projects must be consistent with the agency's own regulations. NFMA is specific in stating that projects be consistent with the Forest Plan. 16 U.S.C. § 1604(i). Furthermore, agency actions must be reversed as arbitrary and capricious when the agency fails to follow its own rules and regulations. Cherokee Nation of Okla. v. Norton, 389 F.3d 1074, 1087 (10th Cir. 2004); *Simmons v. Block*, 782 F.2d 1545, 1550 (11th Cir.1986); Sierra Club v. Van Antwerp, 709 F.Supp.2d 1254, 1258 (S.D. Fla. 2009). Although review of the agency's decision is deferential, a court must reverse if the agency's decision is not supported by substantial evidence. Hoyl v. Babbit, 129 F.3d 1377, 1382 (10th Cir. 1997); Federal Power Comm'n v. Transcontinental Gas Pipe Line Corp., 423 U.S. 326, 331 (1976) (recognizing that if an agency's decision is not supported by the administrative record, it should be reversed and given to the agency for further consideration).

13M USFS has rules and regulations focused on maintaining viable populations and habitat for sensitive species. The following rules are contained in the Forest Service Manual (FSM), and USDA Regulation[1]:

- FSM 2620.1 states that its direction is taken from, *inter alia*, 36 C.F.R. § 219 (1982) and the USDA's policy on Fish and Wildlife, Dep't. Reg. 9500-4, which directs USFS to manage "habitats for all existing native and desired non-native . . . wildlife species in order to maintain at least viable populations of such species" and "habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species generally throughout its current geographic range."

[1] A more comprehensive overview of key rules, policy, and regulation for monitoring, maintaining, and improving population viability and habitats for key sensitive species that, together, establish population monitoring duties not met for Boreal Toad populations in this project area, are found in the 2002 Washington Office White Paper authored by Marc Bosch. Enclosed.

13M USFS is participating as a cooperating agency in the preparation of the EIS. USFS has concluded that analysis contained in the EIS meets USFS NEPA requirements for project-level decisions. Further, a Biological Evaluation is being prepared for the selected route and will be finalized prior the USFS issuing a Record of Decision (ROD) on the Proposed Action and a special-use authorization for the right-of-way.

13 Utah Environmental Congress (continued)

- FSM 2622.01(2) requires USFS to manage habitat to provide for the maintenance of viable populations of existing native wildlife, generally well-distributed throughout their current geographic range.
- FSM 2670.22 requires Forests to "ensure" that sensitive species do not become threatened or endangered because of USFS actions, and that viable populations must be maintained throughout the species entire range.
- FSM 2670.45)(4) requires Forest Supervisors to determine distribution, status, and trend of sensitive species.
- FSM 2672.1 requires USFS to provide special management emphasis to ensure the viability of sensitive species and to preclude trends toward endangerment that could result in Federal listing. It states, "there must be no impacts to sensitive species without an analysis of the significance of adverse effects on the populations, its habitat, and on the viability of the species as a whole."

The regulations implementing NFMA and USDA policy establish similar monitoring and preservation duties for species with viability concerns. The regulations and duties that have not been met include the following:

- 36 CFR 219.26 Diversity. "Forest planning shall provide for diversity of plant and animal communities and tree species consistent with the overall multiple-use objectives of the planning area. Such diversity shall be considered throughout the planning process. Inventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition. For each planning alternative, the interdisciplinary team shall consider how diversity win be affected by various mixes of resource outputs and uses, including proposed management practices."
- The 1983 USDA Departmental Regulation 9500-4 provides further direction to the Forest Service, expanding the viability requirements," Habitats for all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species. In achieving this objective, habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range ... Monitoring activities will be conducted to determine results in meeting population and habitat goals."
- Specific direction concerning use of **best available data** is provided in the **1982 NFMA** implementing regulations at 36 CFR 219.12(d): "Each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative jurisdiction. The Supervisor will assure that the interdisciplinary team has access to the best available data. **This may require that special inventories or studies be prepared.** The interdisciplinary team shall collect, assemble, and use data, maps, graphic material, and explanatory aids, of a kind, character, and quality, and to the detail appropriate for the management decisions to be made."

13N

13O In addition, the Dixie Forest Plan also mandates protection of sensitive species. In a section discussing wildlife and fish, the plan states, "habitat will be improved for sensitive species.

6

13N Forest diversity is considered through analysis of potential impacts on the variety of species and habitat types addressed in the EIS. The EIS was prepared in accordance with the Fishlake and Dixie National Forest LRMPs (dated 1986 and amendments). Viability of each USFS sensitive species is addressed specifically in the Biological Evaluation prepared for the selected route. The Biological Evaluation will be finalized prior the USFS issuing a ROD on the Proposed Action and a special-use authorization for the right-of-way. Additional discussion has been added to Sections 3.2.4.3 and 3.2.4.4 and Appendix E to clarify management for forest-wide diversity and viability of species.

The Agency ID Team, including USFS biologists, collected and analyzed the best available data in preparation of the EIS and Biological Evaluation, including USFS monitoring data, habitat data, natural heritage program data, and comprehensive life history data published by the Dixie and Fishlake National Forests. Data used in the analysis were updated throughout the NEPA process as new data became available.

13 Utah Environmental Congress (continued)

13O including aquatic species." Dixie Forest Plan p. IV-20. Furthermore, as a standard, the plan states that USFS must "manage habitat for viable populations of all existing vertebrate wildlife species." If the USFS doesn't adhere to its own forest plan, it is a clear violation of NFMA. See 16 U.S.C. § 1604(i). Lastly, the Dixie Forest Plan says that all federally listed species must be treated as Management Indicator Species. *Dixie Forest Plan* p. IV-33.

13P Here, the draft EIS is arbitrary and capricious because it does not follow the agency's own rules and regulations with regards to many sensitive species. Additionally, the decision does not meet corresponding duties for monitoring and preserving sensitive species established in the 2003 Forest Plan and NFMA.

13Q The draft EIS states "surveys for BLM and USFS sensitive species are schedules to be performed in the spring and summer of 2011." No site specific surveys have been done for the proposed area. These surveys should have been done before the draft EIS is put out for public comment.

13R Conducting this proposed project is not in accordance with FSM 2670.22, nor corresponding authorities listed above, which require Forests to "ensure" that sensitive species are monitored and protected so they are not threatened by USFS actions. Without knowing whether certain sensitive species/federally listed species inhabit the project area, USFS certainly cannot ensure that viable populations are maintained throughout the entire species range. See FSM 2670.22.

13S The draft EIS does not follow corresponding Forest Plans, NFMA, and rules and regulations for monitoring and preserving USFS Sensitive species. Accordingly, there is no assurance that viable populations will be maintained throughout the entire species range. Therefore, the draft EIS is inadequate.

13T Lastly, the Dixie Forest Plan mandates that federally listed species be treated as Management Indicator Species. Through its lack of monitoring, and failure to acknowledge what federally listed species are being treated as Management Indicator Species, the draft EIS is inadequate.

The draft EIS does not demonstrate compliance with the MBTA and Executive Order 13186

Executive Order 13186 ("EO") mandates agencies to take a "proactive approach to promote conservation of migratory birds." The draft EIs fails to demonstrate compliance with this executive order. In fact, the proponent's preferred alternative seems to run against this mandate.

The Memorandum of Understanding for this EO orders agencies to "strive to protect, restore, enhance, and manage habitat of migratory birds." *Memorandum of Understanding* p. 3. Additionally, this memorandum mandates the BLM and USFS to "[a]void or minimize the unintentional take of migratory birds to the extent practicable."

13U Here, the draft EIS has not demonstrated compliance with this EO. In fact, the draft EIS admits that the proponent's preferred alternative runs through high quality migratory bird habitat. Draft EIS 3-119.

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13O The EIS has been prepared in consideration of the management goals and objectives of the Fishlake and Dixie National Forest LRMPs (dated 1986 and amendments). The LRMP text cited by the commenter is included in the Dixie LRMP as a general direction and description of desired future condition, which do not represent standards or requirements for individual projects approved on the forests. The USFS has determined that implementation of the Proposed Action or alternatives is in conformance with the previously referenced plans.

Additional discussion has been added to Section 3.2.4.3 to clarify that threatened and endangered species found on USFS-administered lands would be treated as MIS and where these species are located on USFS-administered lands within the study area.

13P See responses to comments 13M, 13N, and 13O.

13Q The analysis presented in the EIS is based on the most recent data available—primarily literature, published and unpublished reports, land use plans, maps, and agency databases. Sources of data for general wildlife (i.e., raptors and big game) are identified in Section 3.2.4.4.4. Biological surveys were conducted in the spring and summer of 2011 for federally listed threatened, endangered, and candidate species with the potential to occur in the study corridor for all alternative routes. Surveys for BLM and USFS sensitive species will be conducted only on the selected route. Further, a Biological Evaluation for USFS sensitive species is being prepared for the selected route, which will include the survey results, and will present findings determining whether USFS actions will cause a trend towards federal listing for each USFS sensitive species potentially affected by the Project. The Biological Evaluation will be finalized prior the USFS issuing a ROD on the Proposed Action and a special-use permit authorizing right-of-way.

13R Federally listed and USFS sensitive species that may be affected by the proposed project are presented in Table 3-37. Further, Table 3-37 identifies federally listed and USFS sensitive species potentially affected by the Proposed Action by alternative. Species potentially affected by each alternative and potential effect are described in Section 3.2.4.5. Data supporting the analysis are presented in Appendices D and E. The Biological Evaluation prepared for the Project will present findings of whether USFS actions will cause a trend towards federal listing for each USFS sensitive species potentially affected by the Project.

13S See response to comment 13R.

13T Text has been added to Section 3.2.4.3 to clarify that threatened and endangered species discovered on USFS-administered lands would be treated as MIS and to generally describe where these types of species may occur on the national forests within the Project area.

13U Analysis of impacts on migratory birds and vegetation communities used as habitat for these species is discussed in Sections 3.2.4.3, 3.2.4.4, and 3.2.4.5. A comparison of impacts on vegetation communities used as habitat by migratory birds by miles crossed also is presented in these sections. Available information for migratory bird presence in the study area and migratory bird habitat associations are presented in Appendix D of the Final EIS. The analysis in the EIS considers proactive measures to minimize the unintentional take of migratory birds including design features of the Proposed Action (refer to design features 6, 7 and 8 presented in Section 2.3.5.2) and selective Mitigation Measure 12 (Table 3-3). Additional analysis required to meet USFS obligations under the agency's Memorandum of Understanding with the Fish and Wildlife Service is included in Appendix E.

13 Utah Environmental Congress (continued)

13V This does not demonstrate compliance with EO. The proponent's preferred alternative seems so harmful that the agency cannot claim it is "avoid[ing] or minimize[ing] the unintentional take of migratory birds practicable." This is especially so when there is a viable environmentally preferred alternative.

The draft EIS is incomplete because it fails to comply with 36 C.F.R. § 294.1

13W 36 C.F.R. § 294.11 states that Inventoried Roadless Areas ("IRAs") shall be protected from future road construction with few exceptions. Constructing transmission lines is not one of those exceptions. Alternative S4 runs through existing IRAs. As part of this alternative, new road construction would be needed in the IRAs. Therefore, alternative S4 should be dismissed.

13X 36 C.F.R. § 294.11 specifically states that new roads should not be constructed in IRAs. See 36 C.F.R. § 294.11. The draft EIS admits that alternative S4 will run through designated IRAs. See DEIS, 3-73. Additionally, the draft EIS admits that new roads will need to be constructed for this alternative. See DEIS, 2-12. The draft EIS fails to demonstrate how this could possibly be in compliance with the mandate.

Consideration of Impacts to Inventoried Unroaded-Undeveloped Areas/Potential Wilderness Areas Is Necessary

13Y The source inventory mapping for the Inventoried Roadless Areas (IRA) on the Dixie and Fishlake National Forests is not current. It is stale data completed circa 1984 at a poor scale. It certainly is not the best available data concerning evaluation of how this project involves impacts to potential wilderness areas. Also relevant is the fact that, counter to indications otherwise in the DEIS, USFS IRAs and the corresponding 2001 'Roadless Rule' have nothing to do with Wilderness management, preservation, or recommendation. It concerns a nationwide regulatory standard for prohibitions on new road construction and timber cutting in IRA maps included in a 2001 FEIS. Aside from the many other facts, one simple example illustrating that this regulatory standard is not synonymous with Wilderness is this: Under the Roadless Rule, motorized recreation inside IRA is considered to be a positive "roadless area value." Study of impacts to IRA alone is not sufficient under NEPA, nor does it meet Forest Service policy in the Intermountain Region, for study project-level consideration of impacts to inventoried potential wilderness areas, also known as unroaded/undeveloped areas.

13Z To rectify this the DEIS needs to be revised such that it studies in detail the impacts of each action alternative to the Dixie and Fishlake inventories of unroaded/undeveloped areas (aka 'potential wilderness area' and not 'unroaded/undeveloped area' in subsequent/current FSH revisions)

13AA From the period of 2002 to about 2006 the Dixie and Fishlake National Forests conducted such an inventory or roadless undeveloped/areas. We are enclosing PDF and/or GIS files of each, and

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13V See response to comment 13U.

13W Alternative S4 was developed to analyze the impacts of a less restrictive transmission line siting option than would be required by the 2001 Roadless Area Conservation Rule (RACR) due to uncertainty in the future status of the rule. When the Draft EIS was published, different Federal courts had issued differing court decisions in on the status of the RACR. However, on March 2, 2012, the U.S. District Court in Wyoming lifted their injunction on the RACR, which enabled implementation of the RACR nationwide.

In a letter to BLM and USFS dated May 21, 2012, the Proponent committed to accessing the right-of-way within IRAs for construction at structure sites via helicopter supported by overland travel (refer to Sections 2.3.3 and 2.3.5.2). No blade work would be performed to assist overland travel within the IRAs. Use of helicopter-only methods supported by overland travel to access and construct within the IRAs is compliant with the RACR.

13X See also response to comment 13W.

13Y The Dixie and Fishlake National Forests use spatial data for roadless areas created in 1999 (for both forests) as the basis for the official IRA boundaries. This data layer also is used in the EIS.

13Z See responses to comments 13W and 13Y. Also, the analysis of impacts on IRAs and unroaded/ undeveloped areas on USFS-administered lands has been expanded (refer to Section 3.2.9),

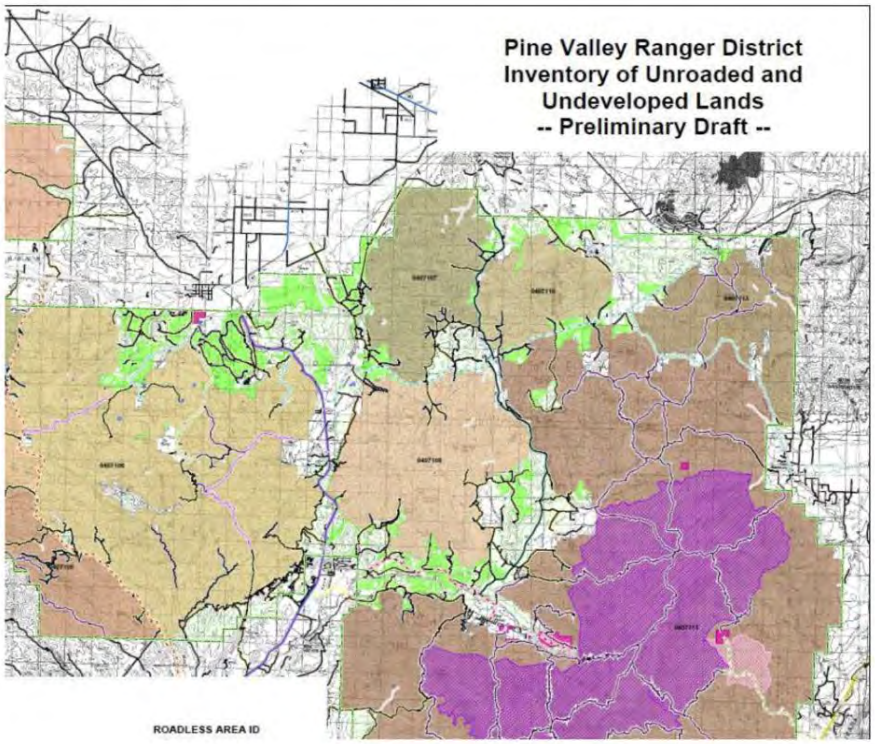
13AA A draft inventory of unroaded/undeveloped areas was conducted jointly by the Dixie and Fishlake National Forests during forest plan revision efforts. The draft inventory conducted was based on direction in the "*Intermountain Region Planning Desk Guide: A Protocol for Identifying and Evaluating Areas for Potential Wilderness.*" The analysis of impacts on IRAs and unroaded and undeveloped areas on USFS-administered lands has been expanded (see Section 3.2.9).

COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress (continued)

13AA have inserted screen captures of the impacted undeveloped/unroaded areas below. The full sized PDF source for each screen capture is enclosed with these comments.



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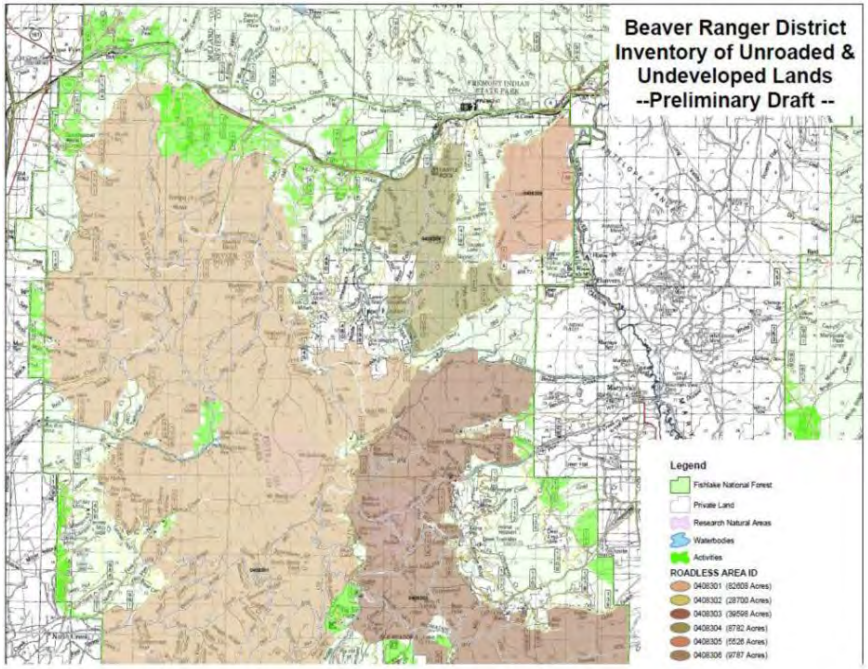
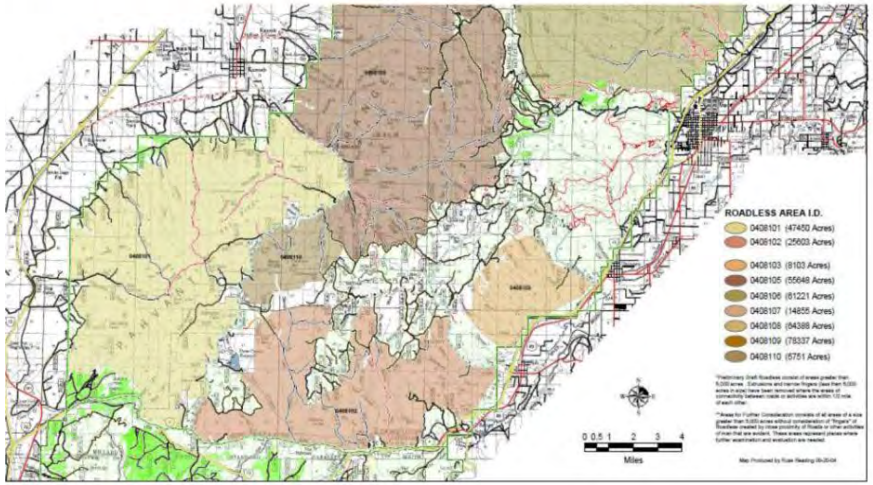
COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress (continued)





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COMMENT(S)

13 Utah Environmental Congress (continued)

13AB When one compares the above to DEIS map 2-2 (southern alternatives) it qui8ckly becomes apparent that alternative routes S3 and S6 would split one inventoried unroaded/undeveloped potential wilderness area entirely in half. Similarly Alternatives S1 and S5 (proponents proposed action) would cut very significantly into two or three inventoried areas. Scoping should have shed light on this huge conflict among alternative uses of available resources, and we believe the DEIS will remain inadequate (and will not promote better decisionmaking) until it is revised such that it identifies impacts to unroaded/undeveloped areas as a significant and alternative-driving issue.

Conclusion

13AC We believe that many of the concerns outlined above could be avoided by selecting the environmentally preferred alternative in the Record Of Decision. It certainly is the most consistent with the LRMPs and causes the fewest irreversible and irretrievable commitments and losses of resources on the National Forest lands involved. The proponent's preferred alternative (and Alternatives S1, S4, S6) would do exactly the opposite.

Sincerely,

Kevin Mueller,
Program Director
Utah Environmental Congress
1817 South Main, Ste 10
Salt Lake City, Utah 84115

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RESPONSE(S)

13AB See response to comment 13AA. The analysis of impacts on IRAs and unroaded/undeveloped areas on USFS-administered lands has been expanded (refer to Section 3.2.9).

Inventoried unroaded/undeveloped areas represent a data inventory and are not a management prescription. Guidance for management of unroaded/undeveloped areas outside of IRAs falls under general forest or management area direction. The forests manage these lands for multiple resource benefits while maintaining their undeveloped character to the extent possible.

13AC Comment and route preference noted.

COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress (continued)

MARC BOSH-US Forest Service Washington Office

MARCH 2002

Some Statutory, Regulatory and Policy Authorities on Selected Topics: Diversity, Viability, Management Indicator Species, and Information and Data
USDA Forest Service

Diversity

Specific direction concerning **diversity** is given in both the 1976 NFMA statute and implementing regulations of 1982. The NFMA provides statutory direction for managing the National Forest System to provide for diversity of plant and animal communities. Section 6(g)(3)(B) of the NFMA states:

> The [planning] regulations shall include, but not be limited to . . . (3) specifying guidelines for land management plans developed to achieve the goals of the [RPA] Program which ... (B) provide for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives, and within the multiple-use objectives of a land management plan adopted pursuant to this section, provide, where appropriate, to the degree practicable, for steps to be taken to preserve the diversity of tree species similar to that existing in the region controlled by the plan.

To ensure an adequate consideration of diversity, the NFMA planning regulations (36 CFR 219) address diversity at several points. First, the regulations provide a definition of diversity to guide land and resource management planning:

> 36 CFR 219.3 Definitions and terminology. "Diversity: The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan."

Other sections of the NFMA regulations that specifically use the term "diversity" are:

> 36 CFR 219.26 Diversity. "Forest planning shall provide for diversity of plant and animal communities and tree species consistent with the overall multiple-use objectives of the planning area. **Such diversity shall be considered throughout the planning process. Inventories shall include quantitative data making possible the evaluation of diversity in terms of its prior and present condition**. For each planning alternative, the interdisciplinary team shall consider how diversity win be affected by various mixes of resource outputs and uses, **including proposed management practices.**"

> 36 CFR 219.27 Management Requirements. "(a) Resource Protection. All management prescriptions shall-- . . . (5) Provide for and maintain diversity of plant

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COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress (continued)

and animal communities to meet overall multiple use objectives, as provided in paragraph (g) of this section: ... (g) Diversity. Management prescriptions, where appropriate and to the extent practicable, shall preserve and enhance the diversity of plant and animal communities, including endemic and desirable naturalized plant and animal species, so that it is at least as great as that which would be expected in a natural forest and the diversity of tree species similar to that existing in the planning area. Reduction in diversity of plant and animal communities and tree species from that which would be expected in a natural forest, or from that similar to the existing diversity in the planning area, may be prescribed only where needed to meet overall multiple use objectives. . . "

FSM 2620 includes direction regarding habitat planning and evaluation, including specific forest planning direction for meeting biological diversity requirements: "A forest plan must address biological diversity through consideration of the distribution and abundance of plant and animal species, and communities to meet overall multiple-use objectives." (FSM 2622.01)

Viability

Specific direction concerning **viability** is provided in the 1982 NFMA implementing regulations at 36 CFR 219.19:

"Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area." (36 CFR 219.19)

The 1983 USDA Departmental Regulation 9500-4 provides further direction to the Forest Service, expanding the viability requirements to include plant species:

"Habitats for **all existing native and desired non-native plants, fish, and wildlife species will be managed to maintain at least viable populations of such species.** In achieving this objective, habitat must be provided for the number and distribution of reproductive individuals to ensure the continued existence of a species throughout its geographic range ... **Monitoring activities will be conducted to determine results in meeting population and habitat goals.**"

Specific FSM direction, from 1986, concerning viability of plant and animal species includes:

"Management of habitat provides for the maintenance of viable populations of existing native and desired non-native wildlife, fish, and plant species, generally well-distributed throughout their current geographic range" (FSM 2622.01(2))

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COMMENT(S)

RESPONSE(S)

13 Utah Environmental Congress (continued)

"**Maintain viable populations of all native and desired non-native wildlife, fish and plant species** in habitats distributed throughout their geographic range on National Forest System lands."' (FSM 2670.22(2))

Management Indicator Species

Specific management requirements and direction concerning **management indicator species** is provided in the 1982 NMFA implementing regulations at 36 CFR 219.19, and in the Forest Service Manual 2600:

"Each alternative shall establish objectives for the maintenance and improvement of habitat for management indicator species selected under paragraph (g) [sic) (1) of this section, to the degree consistent with overall multiple use objectives of the alternative. To meet this goal, management planning for the fish and wildlife resource shall meet the requirements set forth in paragraphs (a)(1) through (a)(7) of this section." (36 CFR 219.19(a)

"In order to estimate the effects of each alternative on fish and wildlife populations, certain **vertebrate and/or invertebrate species present in the area shall be identified and selected as management indicator species** and the reasons for their selection will be stated. These species shall be selected because their population changes are believed to **indicate the effects of management activities**. In the selection of management indicator species, the following categories shall be represented where appropriate: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because their population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality. . ." (36 CFR 219.19(a)(1))

"Planning alternatives shall be stated and evaluated in terms of both amount and quality of habitat and of animal population trends of the management indicator species". (36 CFR 219.19(a)(2))

"**Population trends of the management indicator species will be monitored** and relationships to habitat changes determined. This monitoring will be done in

cooperation with State fish and wildlife agencies, to the extent practical." (36 CFR 219.19(a)(6))

"Habitat determined to be critical for threatened and endangered species shall be identified, and measures shall be prescribed to prevent the destruction or adverse modification of such habitat. Objectives shall be determined for threatened and endangered species that shall provide for, where possible, their removal from listing as threatened and endangered species through appropriate conservation measures, including the designation of special areas to meet the protection and management needs of such species." (36 CFR 219.19(a)(7))

14

COMMENT(S)

13 Utah Environmental Congress (continued)

Forest Service Manual direction concerning habitat planning is contained in 2620. "I. Management Indicators. Plant and animal species, communities, or special habitats selected for emphasis in planning, and **which are monitored during forest plan implementation** in order to assess the **effects of management activities on their populations and the populations of other species with similar habitat needs which they may represent.**" (FSM 2620.5)

"**Select management indicators for a forest plan or project that best represent** the issues, concerns, and opportunities to support recovery of Federally-listed species, provide continued viability of sensitive species, and enhance management of wildlife and fish for commercial, recreational, scientific, subsistence, or aesthetic values or uses. **Management indicators representing overall objectives for wildlife, fish, and plants may include species, groups of species** with similar habitat relationships, or habitats that are of high concern." (FSM 262 1. 1)

"**Select ecological indicators (species or groups) only if scientific evidence exists** confirming that measurable changes **in these species or groups** would indicate trends in the abundance of other species or conditions of biological communities they are selected to represent". (FSM 2621.1(3))

"Document, in the permanent planning records for a forest plan, the rationale, assumptions, and procedures used in selecting management indicators" (FSM 2621.1(4))

"Document, **within the forest or project plan**, how management indicators collectively address issues, concerns, and opportunities for meeting overall wildlife and fish, including endangered, threatened, and sensitive species goals **for the plan or project area**". (FSM 2621.1(5))

"To preclude trends toward endangerment that would result in the need for Federal listing, units must develop conservation strategies for those sensitive species whose continued existence may be negatively affected by **the forest plan or a proposed project**. To devise conservation strategies, first conduct biological assessments of identified sensitive species. In each assessment, meet these requirements:

1. Base tile assessment on the current geographic range of the species and the area affected by the plan or project. If the entire range of the species is contained within the plan or project area, limit the area of analysis to the immediate plan or project area. If the geographic range of the species is beyond the plan or project area, expand the area of analysis accordingly.
2. Identify and consider, as appropriate for the species and area, factors that may affect the continued downward trend of the population, including such factors as: distribution of habitats, genetics, demographics, habitat fragmentation, and risk associated with catastrophic events."

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RESPONSE(S)

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13 Utah Environmental Congress (continued)

3. Display findings under the various management alternatives considered in the plan or project (including the no-action alternative). Biological assessments may also be needed for endangered or threatened species for which recovery plans are not available. See FSM 2670 for direction on biological assessments for endangered and threatened species." (FSM 2621.2)

"In analyzing the effects of proposed actions, conduct habitat analyses to determine the cumulative effects of each alternative on management indicators selected in the plan or project area. . . " (FSM 2621.3)

"The forest plan must identify habitat components required by management indicators; determine goals and objectives for management indicators; specify standards, guidelines, and prescriptions needed to meet management requirements, goals, and objectives for management indicators. Prescribe mitigation measures, as appropriate, to ensure that requirements, goals, and objectives for each management indicator will be sufficiently met during plan implementation at the project level." (FSM 2621.4)

"**Conduct monitoring of plans and projects** to determine whether standards, guidelines, and management prescriptions for management indicators are being met and are effective in achieving expected results. Use monitoring and evaluation to guide adjustments in management and to revise or refine habitat relationships information and analysis tools used in planning". (FSM 2621.5)

Data

Specific direction concerning use of **best available data** is provided in the **1982 NFMA** implementing regulations at 36 CFR 219.12(d): "Each Forest Supervisor shall obtain and keep current inventory data appropriate for planning and managing the resources under his or her administrative jurisdiction. The Supervisor will assure that the interdisciplinary team has access to the best available data. **This may require that special inventories or studies be prepared.** The interdisciplinary team shall collect, assemble, and use data, maps, graphic material, and explanatory aids, of a kind, character, and quality, and to the detail appropriate for the management decisions to be made!'

Specific direction concerning use of **information and scientific data** is also provided in the NEPA implementing regulations at 40 CFR 1502.24: "Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix."

Specific direction concerning use of the **best available scientific and commercial data available.** in fulfilling federal agency responsibilities to insure that any action authorized, funded or carried out is not likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of habitat of such species which has been determined to be critical, is given in the **Endangered Species Act,** 1973 (as amended) at Section 7(a)(2): "In fulfilling the requirements of this paragraph each agency shall use the best scientific and commercial data available."

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COMMENT(S)

RESPONSE(S)

14 Southern Utah Wilderness Alliance

"Neal Clark" <neal@suwa.org>

07/27/2011 10:06 AM

To <utsrbproj@blm.gov>

cc

bcc

Subject SUWA's Sigurd to Red Butte Comments- 1/2

Tamara,

Attached please find SUWA's comments on the Sigurd to Red Butte No. 2 345kV transmission project DEIS (DOI-BLM-UT-C010-2009-0048). As I explained in the voicemail I just left at your office, I just returned from vacation and realized that the comments I emailed to you on July 18th were blocked by the BLM server. Oddly, the failed mail delivery email went directly to my junk mail folder, so I never saw it. I'm going to attach the comments and exhibits in two separate emails and, hopefully, they'll go through. Please confirm that you've received the comments and attached exhibits, and let me know if you have any questions or concerns.

Thanks,

Neal

Neal Clark

Field Attorney | Southern Utah Wilderness Alliance

76 S. Main St., #3

Moab, UT 84532

COMMENT(S)

RESPONSE(S)

14 Southern Utah Wilderness Alliance (continued)

"Neal Clark" <neal@suwa.org>

07/27/2011 10:07 AM

To <utsrbproj@blm.gov>

cc

bcc

Subject SUWA's Sigurd to Red Butte Comments- 2/2

Tamara,

Attached please find the exhibits to SUWA's comments on the Sigurd to Red Butte No. 2 345kV transmission project DEIS (DOI-BLM-UT-C010-2009-0048).

Thanks,

Neal

Neal Clark

Field Attorney | Southern Utah Wilderness Alliance

76 S. Main St., #3

Moab, UT 84532

Telephone: 435.259.7090

Email: neal@suwa.org

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COMMENT(S) | **RESPONSE(S)**

14 Southern Utah Wilderness Alliance (continued)

southern utah wilderness alliance

July 18, 2011

Tamara Gertsch
Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84721

Letter and Exhibits sent via email to: utsrbproj@blm.gov

RE: Sigurd to Red Butte No. 2 345kV Transmission Project [DOI-BLM-UT-C010-2009-0048]

Dear Tamara,

Please accept the following draft environmental impact statement (DEIS) comments on the Sigurd to Red Butte No. 2 345 kV Transmission Project (Project) (DOI-BLM-UT-C010-2009-0048) submitted by the Southern Utah Wilderness Alliance (SUWA).

As you know, SUWA has a long-standing interest in the management of BLM lands in Utah and regularly participates in the decision-making process for land use plans and site-specific proposals around the state. SUWA members and staff enjoy a myriad of activities on BLM-managed public lands, including hiking, biking, nature viewing, photography, and quiet contemplation in the solitude offered by wild places. SUWA is particularly interested in decisions that could affect lands included in the Utah Wilderness Coalition's wilderness proposal—America's Red Rock Wilderness Act (H.R. 1925/S. 799 in the 111th Congress, hereafter "ARRWA"). Based on the proposed transmission routes in the DEIS, the Project abuts and, in some locations, overlaps ARRWA lands and has the potential to impacts lands with wilderness characteristics (*See* Exhibit A).

In summary, after reviewing the Project DEIS, SUWA continues to have serious concerns about the Project. In particular, many of the proposed alternatives will result in irreparable damage to ecologically-sensitive areas (such as intact ecosystems and currently nominated Areas of Critical Environmental Concern (ACECs)), and areas currently proposed for wilderness designation (*i.e.*, lands identified by the Utah Wilderness Coalition as possessing wilderness characteristics and proposed as part of ARRWA). In making a final decision on the Project, BLM must prevent unnecessary and undue degradation, minimize impacts to natural and cultural resources and minimize the effects of climate change by choosing a transmission route that avoids impacting lands with wilderness characteristics.

COMMENT(S)

14 Southern Utah Wilderness Alliance (continued)

Southern Utah Wilderness Alliance
Signed to Red Butte DEIS Comments
July 18, 2011

I. The Project DEIS Violates the Federal Land Policy Management Act

14A FLPMA requires BLM to inventory areas for visual resources. Specifically, BLM must "prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values . . . including outdoor recreation and scenic values." 43 U.S.C. § 1711(a). The "inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values," including wilderness characteristics, critical habitat for species, and visual resources. *Id.*

14B As the Project DEIS correctly states, VRM classes are "assigned through the land use planning process [(*i.e.*, resource management plans (RMPs))] and used to determine management decisions." DEIS at 3-202. The DEIS further notes that, while both the Richfield and Fillmore field offices lacked VRM class data, the St. George and Cedar City field offices provided VRM class information to the BLM in developing the VRM analysis. *See* DEIS at Appendix E. While SUWA commends the Project DEIS' extensive review of visual impacts to locations within the proposed project area, the Project's visual impacts analysis for both the St. George and Cedar City field office project areas is based on outdated visual resource inventories (VRIs) contained in decades old RMPs. Just as BLM must conduct a new VRI for both the Richfield and Fillmore field offices, FLPMA requires that BLM conduct a new VRI for the St. George and Cedar City field office portions of the project area. The baseline data against which the Project's impacts were measured has not been maintained or updated since the initial RMP analyses.

The proposed project, by its very nature, has the potential to greatly impact visual resources through the installation of transmission lines as well as the creation and maintenance of a right-of-way and access roads. The Project also has the potential to impact visual resources by disturbing soils, eliminating trees and changing the vegetation in the area. By basing the St. George and Cedar City field office portions of the analysis on VRIs that have not been updated in 12 and 25 years, respectively, BLM has not met its mandate to maintain a continually updated inventory of visual resources under FLPMA as well as the requirement to take a hard look at environmental impacts under NEPA.

14C ***Comment***: As part of the ongoing Cedar City RMP process, BLM must update its VRI. To proceed with the Project in compliance with FLPMA, BLM must either wait until the agency has updated its VRI as part of the Cedar City RMP process, or must complete a separate VRI for the Project. While the St. George RMP was developed in more recent years than the Cedar City RMP, BLM must nevertheless conduct a VRI for those areas impacted by the proposed project. Likewise, BLM must complete a VRI for the areas impacted by the proposed project in the Richfield and Fillmore field offices. Without accurate, up-to-date baseline information, BLM cannot accurately analyze the Project's impacts to visual resources.

II. The Project DEIS Violates the National Environmental Policy Act

1. BLM Must Consider a Reasonable Range of Alternatives

NEPA requires BLM to consider a range of reasonable alternatives. The range of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA

2

RESPONSE(S)

14A Since the Draft EIS was published, the visual resource inventory (VRI) for the BLM Richfield and Fillmore Field Offices has been finalized. The VRI data has been incorporated into the analysis presented in the Final EIS.

14B The VRI for the BLM Cedar City Field Office was recently updated and was incorporated into the analysis presented in the Final EIS. The VRI for the BLM St. George Field Office was determined to be adequate and complete for inclusion within the EIS. In addition to the planning level VRI data, a project level inventory data collection was completed to further address Project impacts.

14C See comments 14A and 14B.

14 Southern Utah Wilderness Alliance (continued)

Southern Utah Wilderness Alliance
Sigurd to Red Butte DEIS Comments
July 18, 2011

requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. *See* 40 C.F.R. §§ 1502.14(a), 1508.25(c). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action." *Nw. Envtl. Defense Center v. Bonneville Power Admin.*, 117 F.3d 1520, 1538 (9th Cir. 1997). An agency violates NEPA by failing to "*rigorously explore and objectively evaluate all reasonable alternatives*" to the proposed action. *City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1310 (9th Cir. 1990) (quoting 40 C.F.R. § 1502.14) (emphasis added). This evaluation extends to considering more environmentally protective alternatives and mitigation measures. *See, e.g., Kootenai Tribe of Idaho v. Veneman*, 313 F.3d 1094, 1122–23 (9th Cir. 2002) (and cases cited therein).

14D

NEPA requires that an actual "range" of alternatives be considered, as to "preclude agencies from defining the objectives of their actions in terms so unreasonably narrow that they can be accomplished by only one alternative (i.e. the applicant's proposed project)." *Col. Envtl. Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999), *citing Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997). This requirement prevents the environmental analysis from becoming "a foreordained formality." *See City of New York v. Dep't of Transp.*, 715 F.2d 732, 743 (2d Cir. 1983). *See also Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002).

Further, in defining what is a "reasonable" range of alternatives, NEPA requires consideration of alternatives "that are practical or feasible" and not just "whether the proponent or applicant likes or is itself capable of carrying out a particular alternative;" in fact, "[a]n alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable." Council on Environmental Quality (CEQ), *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Questions 2A and 2B, available at* http://ceq.hss.doe.gov/nepa/regs/40/40p3.htm; 40 C.F.R. §§ 1502.14, 1506.2(d). Specifically, the CEQ's Forty Most Asked Questions, states that:

14E

> In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. *Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense*, rather than simply desirable from the standpoint of the applicant.

14F

CEQ's Forty Most Asked Questions 2.a. (emphasis added).

With specific regard to the Project DEIS, BLM has yet to determine the agency's preferred alternative route. In identifying the agency's preferred alternative, BLM should choose an alternative that both minimizes adverse environmental impacts and avoids impacting wilderness quality lands by requiring co-location of the route within the existing IPP and Sigurd to Red Butte No. 1 corridors.

14G

Comment: BLM should choose the environmentally preferred alternative (*i.e.*, alternative routes N1 and S2). Choosing the environmentally preferred alternative as the agency's preferred alternative is consistent with FLPMA's requirement that BLM "prevent unnecessary or undue

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14D BLM agrees with the comment. The commenter has not provided any specific information on items of deficiency related to the alternatives developed and analyzed in the EIS. BLM maintains that a reasonable range of alternatives has been considered in the EIS.

14E As described in Sections 1.2 and 1.3, the decision to be made by BLM and USFS is whether or not to grant the Proponent a right-of-way to construct, operate, and maintain the proposed facilities on lands they administer and under what terms and conditions. In so doing, the BLM (as lead agency) will analyze, through the EIS, the Proponent's plan for, and the potential environmental impacts of constructing, operating, and maintaining the Project. The alternatives analyzed in the EIS represent alternatives that reflect the discretion available to BLM and USFS, consistent with from the overarching policy and direction in FLPMA, requirements under the Energy Policy Act of 2005, and other statutory and regulatory requirements. See also response to comment 14D.

14F See responses to comments 14E and 14F.

14G Comment and route preference noted.

COMMENT(S)

14 Southern Utah Wilderness Alliance (continued)

Southern Utah Wilderness Alliance
Signed to Red Butte DEIS Comments
July 18, 2011

degradation of the lands" and "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved." 43 U.S.C. §1732(b) and (d)(2)(a).

a. BLM Must Verify the Data Provided by the Project Proponent

14H Under NEPA, BLM must independently verify the information provided by the project proponent and third-party contractor that purports to justify the purpose and need of the proposed project, the proponent's preferred alternative, the alternatives analyzed and, ultimately, the route chosen in the FEIS/ROD. If an agency chooses to delegate the responsibility for preparing a NEPA analysis, it must be able to point to *record evidence* establishing that the required independent evaluation has occurred, especially with regard to a NEPA document's critical alternatives analysis. *See Utahns for Better Transp. v. Dep't of Transp.*, 295 F.3d 1111, 1165 (10th Cir. 2002) (stating that "NEPA . . . require[s] that the agency verify the accuracy of information supplied by an applicant") (citing 40 C.F.R. § 1506.5(a)). With specific regard to the proposed project and the proponent's preferred alternative, if BLM chooses a route alternative that is not co-located within an existing transmission corridor, BLM must provide a statement in the ROD verifying that it has independently evaluated the data supporting its conclusion that co-location is not a technologically feasible alternative.

14I ***Comment:*** Pursuant to NEPA, BLM must provide record evidence that indicates it independently verified the information provided by the NEPA third-party contractor and proponent, Rocky Mountain Power/PacifiCorp, supporting the purpose and need for the proposed project, the DEIS alternatives (specifically the proponent's preferred alternative) and the alternative chosen in the FEIS/ROD.

b. BLM Must Choose the Environmentally Preferred Alternative to Minimize Environmental Impacts

14J BLM should adopt the environmentally preferred alternative route as the agency's preferred alternative because it requires co-location of the route with the existing IPP and Sigurd to Red Butte No. 1 transmission corridors and, thus, minimizes the environmental impacts from the proposed project. Co-location of transmission lines has multiple benefits for natural and cultural resources and helps minimize the negative impacts to ecosystems and scenic quality. Specifically, co-location eliminates the need for the additional, extensive road construction that accompanies transmission line construction and, thus, vastly decreases the myriad negative impacts to soils, vegetation, wildlife and habitat associated with the presence of roads throughout an ecosystem. As the Project DEIS properly points out, the areas impacted by the proposed project contain high-quality habitat for species such as sage grouse, pronghorn, elk and mule deer- all of which will be negatively impacted from any new ground disturbing activities.

Comment: By choosing the environmentally preferred alternative, BLM can help minimize the environmental impacts to soils, vegetation, species and habitat throughout the proposed project area.

4

RESPONSE(S)

14H BLM has an obligation to independently evaluate information regarding the technical and economic feasibility of the alternatives submitted by the Proponent; however there is no requirement to validate the Proponent's purpose and need or goals and objectives for a project. Under FLPMA, BLM has the discretionary authority to grant a right-of-way across lands it administers to qualified individuals, businesses, or government entities for public systems or facilities.

All alternatives analyzed in detail in the EIS are technically and economically feasible, including those colocated with existing lines and those proposed in undisturbed areas. After reviewing the analysis presented in the EIS, the BLM and USFS decisionmakers will include the rationale for their decisions in their respective RODs.

14I See response to comment 14H.

14J Comment and route preference noted. The selection of the Agency Preferred Alternative is discussed in Section 2.6.2.

COMMENT(S)

14 Southern Utah Wilderness Alliance (continued)

Southern Utah Wilderness Alliance
Sigurd to Red Butte DEIS Comments
July 18, 2011

c. BLM Must Choose the Environmentally Preferred Alternative to Avoid Impacting Wilderness-Quality Lands

14K BLM should choose the environmentally preferred alternative as it locates the transmission line within existing transmission corridors and, therefore, avoids unnecessary and undue impacts to environmentally-sensitive landscapes. Specifically, the proposed alternative N1 ("Black Rock Road to IPP North of Milford Wind Farm") is preferred to other alternatives as it avoids impacting the Mineral Mountains and, in doing so, avoids crossing through an area nominated by SUWA as an ACEC. *See* Exhibit B (previously submitted as Exhibit P in SUWA's scoping comments). The Mineral Mountain ACEC contains a very high density of cultural sites as well as provides habitat for numerous wildlife species, including species protected under the federal Endangered Species Act and listed as Utah Sensitive Species. *See* Exhibit B at 4.

Although both alternative routes S2 ("IPP West") and S4 ("IPP East") fall within the existing IPP and Sigurd to Red Butte No. 1 corridors, alternative S2 is vastly preferred to alternative S4 because of the location of the lines when paralleling the existing IPP corridor. Specifically, alternative route S2 runs on the west side of the IPP corridor, thus avoiding additional impacts to the Antelope Range wilderness character unit. Antelope Range is currently proposed for wilderness designation by the Utah Wilderness Coalition as part of America's Red Rock Wilderness Act. Conversely, alternative route S4, which parallels the IPP corridor to the east, will result in encroachment and irreparable impacts to the Antelope Range's wilderness characteristics.

The environmentally preferred alternative satisfies Rocky Mountain Power/PacifiCorp's goal of developing a new transmission line while protecting the wilderness-quality landscapes and environmentally-sensitive areas surrounding the proposed project area. Although not preferred by the project proponent, the environmentally preferred alternative is a practical solution to meeting the stated purpose and need of the proposed project. It makes little sense to destroy valuable, natural landscapes with entirely new transmission corridor construction when existing, previously impacted energy corridors can meet the same project objectives. In other words, the environmental impacts resulting from the prior construction of the IPP and Sigurd to Red Butte No. 1 corridors have already occurred and, therefore, BLM should choose the
14L alternative that locates the proposed transmission line in the same or similar location. There appears to be little gain from constructing an entirely new transmission corridor and, conversely, a lot to lose with regard to destruction of a fully-functioning, intact ecosystem.

14M ***Comment:*** BLM must choose the environmentally preferred alternative to ensure the Project's environmental impacts are minimized and that ecologically sensitive habitats are avoided. Choosing the environmentally preferred alternative as the agency's preferred alternative is consistent with BLM's obligation to "prevent unnecessary and undue degradation of the [public] lands", 43 U.S.C §1732(b), and is a sensible way to meet the stated purpose and need of the proposed project while minimizing environmental degradation through co-location of the transmission line.

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RESPONSE(S)

14K Comment and route preference noted.

Per BLM's policy, no special protections are afforded to areas nominated as areas of critical environmental concern during the BLM planning process. BLM has an obligation to protect, to the best of its ability, resource values in adherence to existing regulations, policy, and law whether or not nominations for areas of critical environmental concern are submitted. Cultural and biological resource values in the Mineral Mountains area are addressed in the EIS.

As discussed in Section 3.2.10.4 all BLM field offices reviewed the Proposed Action and alternatives and determined areas affected by the Project clearly lack wilderness characteristics. Information on the review for wilderness characteristics conducted by each BLM field office is presented in Appendix K.

14L Comment and route preference noted.

14M Comment and route preference noted.

COMMENT(S)

14 Southern Utah Wilderness Alliance (continued)

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2. BLM Must Take a Hard Look at the Project's Environmental Impacts

NEPA dictates that agencies take a "hard look" at the environmental consequences of a proposed action and that the resultant environmental analysis "be appropriate to the action in question." *Metcalf v. Daley*, 214 F.3d 1135, 1151 (9th Cir. 2000); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). In order to meet NEPA's "hard look" standard, BLM must assess impacts and effects that include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, *whether direct, indirect, or cumulative*." 40 C.F.R. § 1508.8 (emphasis added).

a. BLM Must Take a Hard Look at the Project's Impact on Climate Change

14N There is broad scientific consensus that climate change is occurring, with sweeping changes that will affect the desert southwest, including the lands implicated in the project area and other lands managed by the Cedar City field office. The Project DEIS fails to analyze these predicted changes in regional climatic conditions as required by, among other mandates, Secretarial Order No. 3289 (Order 3289), which recognizes that "[t]he realities of climate change require us to change how we manage the land, water, fish and wildlife, and cultural heritage and tribal lands and resources we oversee." Order 3289 § 1 (September 14, 2009). Order 3289 specifies the need to manage for shrinking water resources and evolving wildlife needs for habitat and corridors, among other resources. *Id.* Particularly given the arid, sensitive desert environment in southwestern Utah, BLM must analyze how its decisions will contribute to climate change impacts, as well as how the lands and resources in the proposed project area will be impacted by climate change.

For years BLM has been aware that climate change is occurring. In the last administration, Department of Interior Deputy Secretary Lynn Scarlett told the House Interior Appropriations Subcommittee that global climate change could dramatically reshape America's public lands with increased species extinctions and wildfire. Ms. Scarlett is quoted in media stories as saying, "[o]n the ground, we're seeing a lot of changes . . . some of them dramatic." *See* http://www.earthportal.org/news/?p=93. Ron Huntsinger, the BLM's own science coordinator, said, "*[w]e can anticipate further reductions in the level of allowable uses on public lands due to the loss of productivity and capacity* . . . The results are more fragile ecosystems, a greater susceptibility to the outbreaks of attacks by parasites and disease, increased vulnerability to wildland fire and erosion and an overall reduction in the carrying capacity of the land." *Id.* (emphasis added).

The BLM's observations and predictions coincide with the findings of an array of climate specialists and other scientists. For example, a recent study by the U.S. Geological Survey predicts that precipitation in the upper Colorado River basin will decrease by 15-20%, and that temperatures will rise by 4-6 degrees Celsius due to climate change. *See* U.S.G.S., IMPACTS OF CLIMATE CHANGE ON WATER AND ECOSYSTEMS IN THE UPPER COLORADO RIVER BASIN (August 2007). Increased temperatures are expected to decrease runoff by as much as 30%, with dry soil

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RESPONSE(S)

14N The potential impact on climate change was not raised as an issue during scoping. Further, there are no established thresholds to determine when quantitative analysis of climate change is required. Nonetheless, for disclosure purposes, estimated greenhouse gas emissions related to Project activities have been added to Section 3.2.1.3. In addition, further qualitative analysis regarding the impacts of greenhouse gas emissions on climate change in the Great Basin region, with scientific reference, has been included in the Final EIS.

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14 Southern Utah Wilderness Alliance (continued)

conditions worse than those experienced during the Dust Bowl and subsequent droughts. *Id.* Dust storms are predicted, some of which obscure highway visibility and create safety risks.

Frighteningly, these predictions are conservative. *Id.* The southwestern ecosystems of the future, including those lands implicated in the proposed project, will be more vulnerable to climatic changes such as increased wildfire and drought. Because of this vulnerability, it is particularly important that BLM protect roadless tracts of ecologically-critical lands in the proposed project area, as these refugia can better defend against fire, drought and other climate change-related effects.

The USGS report further notes that soil-disturbing activities such as recreation, grazing and energy exploitation "reduce or remove the natural components that stabilize desert soils [which] increases soil loss through wind and water erosion." *Id.* These uses also enhance the invasion of exotic vegetation, which is much more likely to exacerbate the frequency and intensity of wildfire. *Id.* This creates a feedback loop in which soil disturbance decreases ecosystem resilience to land use impacts (*e.g.*, roads, vegetation treatments, and off-road vehicle use) and further increases the frequency and magnitude of erosion events. *See id.*

A U.S. Climate Change Science Program working group published a report on September 11, 2007, that predicts and elaborates on the widespread impact of climate change on public lands in areas like the high arid deserts of the Colorado Plateau. *See* THE EFFECTS OF CLIMATE CHANGE ON AGRICULTURE, LAND RESOURCES, WATER RESOURCES AND BIODIVERSITY http://www.climatescience.gov/Library/sap/sap4-3/default.php. The report notes that "the climate changes that we can expect are very likely to continue to have significant effects on the ecosystems of the United States." *Id.* at 3. For example:

- Climate effects on disturbances such as fire, insect outbreaks and wind and ice storms are very likely important in shaping ecosystem structure and function;
- Grasslands will transform into woody shrub lands with reduced capacity for water absorption and greater vulnerability to channelization and erosion;
- Droughts early in the 21st Century are likely to increase rates of perennial plant mortality in arid lands, accelerate rates of erosion and create opportunities for exotic plant invasions;
- Proliferation of non-native annual and perennial grass is virtually certain to predispose sites to fire. The climate-driven dynamics of the fire cycle is likely to become the single most important feature controlling future plant distribution in U.S. arid lands;
- Climate change is likely to result in shrinking water resources and place increasing pressure on montane water sources to arid land rivers, and increase competition among all major water depletions in arid land, river, and riparian ecosystems;
- Major disturbances like floods and droughts that structure arid land river corridors are likely to increase in number and intensity (with associated increases in erosion and native plant loss);
- Land use change, increased nutrient availability, increasing human water demand and continued pressure from exotic species will act synergistically with climate warming to *restructure* the rivers and riparian zones of arid lands;

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- Climate change will increase the erosive impact of precipitation and wind;
- Surface soils will become more erodible; and
- Increases in wind speed and gustiness will likely increase wind erosion.

The report also notes:

> Given that many organisms in arid lands are near their physiological limits for temperature and water stress tolerance, slight changes in temperature and precipitation . . . that affect water availability and water requirements could have substantial ramifications for species composition and abundance, as well as the ecosystem goods and services these lands can provide for humans.

Id. at 9. While these findings are dramatic, the report further notes that "[i]t is likely that these changes will increase over the next several decades in both frequency and magnitude, and it is possible that they will accelerate." *Id.* at 23. *See also* Government Accountability Office, CLIMATE CHANGE: AGENCIES SHOULD DEVELOP GUIDANCE FOR ADDRESSING THE EFFECTS ON FEDERAL LANDS AND WATER RESOURCES (August 2007), *available at* http://www.gao.gov/new.items/d07863.pdf.

14O Pursuant to NEPA's hard look requirement, the Project DEIS must consider the above-listed studies and the predicted effects of climate change, and assess the existing conditions and the potential changes in a discussion of the impacts of the various alternatives. Climate change must be a prominent feature of the future management considerations for the proposed project area and other BLM lands managed by the Cedar City field office, and BLM must demonstrate that it has begun to grapple with the management challenges that climate change presents. Although SUWA commends BLM for acknowledging the validity of both climate change and the role played by anthropogenic greenhouse gas emissions, DEIS at 3-18, this is nevertheless insufficient to meet BLM's obligations under both NEPA and Order 3289. The hard look mandated by NEPA requires more than merely stating "BLM does not have an established mechanism to accurately predict the effect of resource management-level decisions" on climate change. The Project DEIS must consider the predicted effects of climate change in its assessment of existing conditions as well as in an evaluation of the potential impacts to global warming from the various alternatives of the proposed project.

14P The Project DEIS must include a description of the current effects of climate change on existing conditions, including the prevalence of exotic plant species, the availability of water and the health of riparian areas, and the zones of soil erosion or vulnerability to soil erosion. All of these conditions provide critical baseline information necessary for the BLM to determine whether the proposed project area and resources can sustain the Project in either the long or short term. Without this basic foundational information about the existing health of the land, it is impossible to make any informed decision about the level, location and type of activities it can support in the future.

14Q ***Comment:*** The Project, which proposes to cut a wide swath across large sections of intact landscapes (from both transmission lines and roads), could have serious impacts to the ecosystem when combined with the likely inevitable impacts of climate change. To ensure these impacts

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14O See response to comment 14N.

14P As discussed in Section 3.2.1.3, based on the cumulative character of the phenomena of greenhouse gas emissions and global climate change, it is impractical to link the effects of climate change to greenhouse gas emissions associated with a particular project. See also response to comment 14N.

14Q Additional discussion has been added to Section 4.3. Design features of the Proposed Action (Section 2.3.5.2) and mitigation measures applied for protection of other resources (Section 3.1.3), such as treatment of noxious and invasive weeds during construction and post-construction monitoring, also will mitigate cumulative impacts of climate change on the Project.

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14Q are minimized or eliminated, and to comply with its duty under NEPA, BLM must take a hard look at the Project's impacts on climate change and climate change's impacts on the Project. *See* 40 C.F.R. § 1508.7.

14R ***Comment:*** To best protect ecosystems, BLM must manage for resilience and sustainability. To do this, the Project DEIS must include descriptions of baseline information necessary to evaluate climate change effects on the resources in the proposed project area. The DEIS must also quantify the greenhouse gas emissions expected from the Project, and analyze its potential contribution to global warming.

14S ***Comment:*** An understanding of both the predicted impacts of climate change and the Project's potential contributions to climate change should shape the alternatives under consideration by the BLM in the DEIS. The BLM must select an alternative only after taking into account how climate change is already affecting the resources in the proposed project area, and assessing the contributions of the Project to climate change. The DEIS must include current research and findings on climate change in its analysis, and must address climate change in the cumulative impacts analysis. The DEIS must employ responsive management decisions that will best protect the large ecosystems impacted by the various alternative routes, as intact ecosystems can provide strong resistance to the effects of climate change.

14T ***Comment:*** The Project DEIS must take a hard look at mitigating vulnerability to climate change. BLM must ensure that the project's soil- and vegetation-disturbing activities do not render ecosystems less resilient and more vulnerable to the negative effects of climate change.

b. BLM Must Take a Hard Look at the Project's Risk of Spreading Invasive Species

It has been scientifically documented and widely accepted that soil disturbing activities invite the spread of invasive, non-native species into an area, and that this non-native vegetation outcompetes native species and provides fuel for high-intensity fires. *See, e.g.*, Invasive Weeds – A Real Problem, Los Padres National Forest fact sheet, *available at* http://www.fs.usda.gov/wps/portal/fsinternet/!ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3gDfxMDT8MwRydLA1cj72DTUE8TAwjQL8h2VAQAMtzFUw!!/?ss=110507&navtype=BROWSEBYSUBJECT&cid=STELPRDB5106113&navid=150130000000000&pnavid=150000000000000&position=Feature*&ttype=detailfull&pname=Los%20Padres%20National%20Forest-%20Nature%20&%20Science (stating that invasive weeds usually rely on some form of soil disturbance for initial establishment, and that disturbing native vegetation, introducing foreign plants and seeds, overgrazing rangelands, and construction and recreation vehicle use all contribute to invasive weed problems) (last visited July 18, 2011); and Tu, Mandy, Hurd, Callie, & Randall, John M, *Weed Control Methods Handbook: Tools & Techniques for Use in Natural Areas*, THE NATURE CONSERVANCY at 1.1 (April 2001), *available at* http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1532&context=govdocs (indicating that workers and machines, even when working to remove already-established invasive species, "may severely trample vegetation and disturb soil, providing prime conditions for re-invasion by the same or other invasive species") (last visited July 18, 2011). Any activity that causes surface ground disturbance will increase the risk of soil erosion, weed proliferation, dust storms and the

14R See response to comment 14P.

14S See responses to comments 14N, 14P, and 14Q.

14T See responses to comments 14N and 14P.

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loss of native plant and animal life. These impacts will be exacerbated in the expected hotter, drier climate conditions of the future.

The DEIS states, "[m]oderate impacts would be the same for all alternatives and would include permanent loss of habitat in some vegetation communities from reduced viability of native plant populations through introduction of invasive, non-native, or noxious weed species." DEIS at 3-103, 3-107, 3-110, 3-114, 3-117, 3-120, 3-125, 3-128, 3-131, 3-134, 3-137, 3-140. In addition, "disturbance and removal of existing vegetation during construction would increase the potential for the spread of invasive non-native plant species into the study corridors altering wildfire regimes and reducing the viability of native plant populations." DEIS at 4-22. Finally, the DEIS states, "[n]ew access roads, combined with new disturbance in the right-of-way and staging areas, could lead to an increased potential for proliferation of invasive species such as cheatgrass." DEIS at 4-38. While the DEIS makes frequent mention of the potential for invasive species proliferation, the DEIS completely fails to quantify the level of impacts or likely results of the increase in invasive species, and fails to provide substantive documentation for its conclusion that the impacts would be "moderate" and would be "the same for all alternatives." NEPA requires that BLM take a hard look at the risk of spreading invasive species through analysis of the increased risks and potential impacts for each project alternative. Merely acknowledging that there may be a resultant increase in invasive species within the proposed project area is insufficient to meet NEPA's hard look mandate.

14U ***Comment*:** BLM must take a hard look at the Project's risk of spreading invasive species by disclosing the increased risks and potential impacts of invasive species in relation to *each* of the project alternatives. Given that so many of the predicted outcomes of climate change center on increased soil erodability, dust storms, shrinking water resources, loss of riparian areas, invasion of exotic plants and the spread of hotter, larger wildfires, the DEIS must adequately analyze and disclose the potential for invasive species expansion for *each* alternative so that BLM can make an informed decision that will minimize the potential for the spread of invasive species.

***Comment*:** The DEIS must include mitigation measures to address the potential introduction and spread of invasive species if any surface disturbing activity is approved. Developing a mitigation plan as part of the final plan of development – as proposed in the Project DEIS, DEIS at 2-21 – does not allow the public to provide meaningful input on the impacts of the various alternative routes and the sufficiency of the mitigation plan.

III. The Project DEIS Violates the National Historic Preservation Act

Pursuant to the National Historic Preservation Act (NHPA), 16 U.S.C. §§ 470 *et seq.*, BLM must protect cultural resources, and the Project DEIS must analyze the potential effects of the proposed project on cultural resources. Because transmission line projects have the potential to destroy and irretrievably damage irreplaceable cultural resources, it is particularly important that BLM comply with all aspects of the NHPA. To comply with Section 106, BLM must initiate meaningful consultation with the State Historic Preservation Officer (SHPO) and appropriate Tribes. The NHPA instructs that consultation among agency officials and other interested parties should commence at the early stages of project planning. *See* 36 C.F.R. § 800.1(c). Section 106 of the NHPA requires BLM to identify historic properties affected by its

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14U The analysis of large transmission line projects presents some unique challenges. Typically, as is the case for the Project, the NEPA impact assessment and alternatives comparison processes are conducted before completion of final engineering design of the transmission line and access roads, which would be required for quantification of weed impacts for each alternative. Rather, the analysis presented in the EIS is based on preliminary engineering data. Further, comprehensive data regarding weed presence are not available for the entire Project area. The impact assessment and alternatives comparison for potential impacts related to weeds is based on the best available data on weed presence and vegetation community types present in the study corridors.

The study methodology for assessing potential impacts on vegetative communities, including the spread of noxious weeds, was developed by BLM in collaboration with the agency ID team. The relative risk for spread of noxious weeds for each alternative cannot be quantitatively analyzed due to the lack of comprehensive data on weed presence for each alternative. As identified in Section 3.2.4.5, all action alternatives would involve similar surface-disturbing activities in similar habitats. As described in Section 2.3.5.1, the BLM and USFS would require environmental protection measures including the completion of a weed inventory on the selected route, development a Noxious Weed Management Plan in accordance with the BLM Integrated Weed Management Manual 9015 and the USFS Noxious Weed Management Manual 2080, and development of a Reclamation, Revegetation, and Monitoring Plan to be incorporated into the POD to minimize the potential for introduction and spread of noxious weeds under any action alternative. Without comprehensive data on weed presence for each alternative route, any conclusion regarding the relative risk of introducing or spreading noxious weeds in the EIS by alternative would be speculative. The analysis presented in the Draft EIS evaluates the risk for spreading of noxious weeds associated with each alternative using the best available data and is sufficient to meet NEPA's "hard look" mandate.

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decisions and to develop measures to avoid, minimize or mitigate any adverse effects on historic properties. 16 U.S.C. § 470f, 36 C.F.R. §§ 800.4, 800.6. Thus, BLM must conduct a Class III inventory of the project area *prior* to issuing a decision and conducting any ground-disturbing activities, and must avoid and protect any and all cultural resources that it discovers. In addition, BLM must be mindful of its responsibilities under section 110 of the NHPA, which requires BLM to proactively identify, evaluate and nominate National Register-eligible historic properties under its jurisdiction or control.

The Project DEIS states:

> [c]ultural resources also would be considered during the *post-EIS* phase of the Project. Consultation . . . would continue and Class III intensive pedestrian surveys of the selected route, associated access roads, substations, and similar ancillary facilities would be conducted. The results of the Class III inventory would be presented in a separate technical report. The final Class III Technical Report would enable BLM . . . to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties.

DEIS at 3-146 (emphasis added). Based on the approach set out in the DEIS, it appears that BLM intends to publish a record of decision (ROD) for the Project *prior* to completing a Class III survey of the area of potential effect and, therefore, *prior* to determining whether the Project
14V will result in "no adverse effect" on cultural resources.

The NHPA requires BLM to make all supporting documentation available to the public *prior* to making a finding that the Project will have "no adverse effect" on cultural resources. Failing to do so is in direct violation of the NHPA. The NHPA clearly states:

> [i]f the agency official finds that . . . there are historic properties present but the undertaking will have no effect upon them as defined in §800.16(i), the agency official shall provide documentation of this finding, as set forth in §800.11(d), to the SHPO/THPO. The agency official *shall* . . . make the documentation available for public inspection *prior to approving the undertaking*.

36 C.F.R. § 800(d)(1) (emphasis added). Here, BLM has completed Class I and II surveys over much of the Project's alternative routes, yet has not completed any new Class III surveys. If BLM postpones the Class III surveys until after BLM approves the Project (*i.e.*, after BLM issues a finding of no significant impact (FONSI)/ROD), BLM has no way of ensuring that there will be no adverse effect on cultural resource. This approach clearly violates the unambiguous language of the NHPA regulations.

Comment: Under its NHPA obligations, BLM must conduct a Class III survey of the area of potential effects prior to issuing a ROD. . It is only after BLM has completed the Class III survey, that it can make a determination as to whether the proposed project will have "no adverse effect" on cultural resources. If BLM ultimately determines the project will have no adverse effect, the agency must adequately document its determination and make the non-sensitive

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14V The BLM has chosen to implement a phased approach to Section 106 compliance as allowed under 36 CFR 800.4(b)2. As explained in that same section, the agency official may defer the final identification and evaluation for the project if a programmatic agreement is completed. The BLM has drafted a Programmatic Agreement in consultation with consulting parties to fulfill its Section 106 responsibilities. As a result, a Class III inventory is not required before the RODs are signed.

Additional discussion clarifying the approach for survey and treatment of historic properties has been added to Section 3.2.5. As outlined in the Programmatic Agreement (also described in Section 5.2.2.2 and presented in Appendix G), a Class III intensive field survey of the selected route and associated access roads and ancillary facilities will be conducted and the results documented in a Class III Technical Report. All cultural resources identified during the intensive surveys would be evaluated for eligibility to the NRHP based on criteria set forth in the federal regulation 36 CFR 60.4. The final Class III Technical Report would facilitate BLM, in consultation with the SHPO, to identify historic properties and make determinations on potential effects on those properties. Following completion of the Class III Technical Report, the HPTP addressing the effects of the proposed undertaking on identified historic properties would be prepared and implemented in consultation with the BLM, SHPO, other involved agencies, and consulting parties. The HPTP will be incorporated as part of the POD, which will be finalized and

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14V portions of the survey, report and recommendations available for public review and comment *before* issuing a final decision on the proposed project.

CONCLUSION

Thank you for your consideration of these DEIS comments. SUWA continues to have concerns with the Project and intends to remain involved in the planning process. Please send a copy of the FEIS/ROD when it is ready for public comment to either neal@suwa.org, liz@suwa.org or to P.O. Box 968, Moab, UT 84532. If you have any questions or concerns, please contact me.

Sincerely,

/s/ Neal Clark

Neal Clark
Field Attorney
neal@suwa.org
435.259.7090

/s/ Liz Thomas

Liz Thomas
Field Attorney
liz@suwa.org
435.259.5440

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List of Exhibits

- Exhibit A- Map of ARRWA Units
- Exhibit B- Mineral Mountain ACEC Nomination

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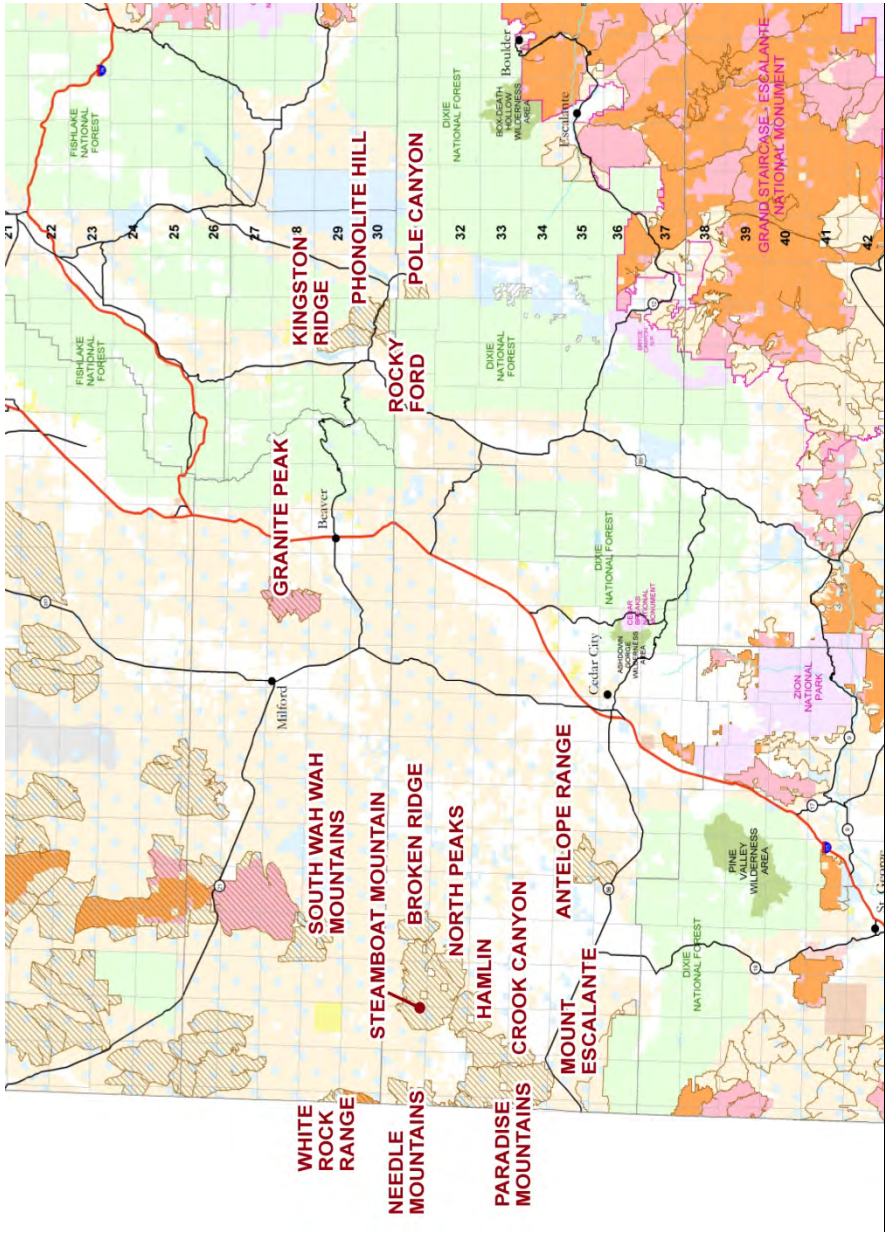

COMMENT(S)	RESPONSE(S)
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EXHIBIT P

COMMENT(S)	RESPONSE(S)

14 Southern Utah Wilderness Alliance (continued)

MINERAL MOUNTAINS ACEC NOMINATION

The Southern Utah Wilderness Alliance (SUWA) nominates the Mineral Mountains for designation as an Area of Critical Environmental Concern (ACEC) (see attached map for ACEC boundaries). This ACEC nomination is pursuant to the direction given to the Bureau of Land Management (BLM) by law, regulation and policy when developing, revising, or amending land use plans.

> *In the development and revision of land use plans, the Secretary shall … give priority to the designation and protection of areas of critical environmental concern.* – Federal Land Policy and Management Act (FLPMA), Title II, Section 202(c)3

> *The term "areas of critical environmental concern" (often referred as "ACECs") means areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.* – FLPMA, Title I, Section 103(a)

ACEC designation is a key land management planning decision, undertaken at *either* drafting of a Resource Management Plan (RMP) *or* through a plan amendment. Regulations state that to be an ACEC, certain criteria establishing the *relevance* and *importance* must be met. 43 CFR 1610.7-2. BLM must review and assess the relevance and importance values identified in this ACEC nomination, and must also assess threats posed by the proposed action described in the oil and gas leasing Environmental Assessment (UT-040-08-036) that threatens these values. The Cedar City Field Office must prepare the necessary RMP amendment to designate the Mineral Mountains ACEC.

Location

The nominated Mineral Mountains ACEC is located west of Interstate 15 and northwest of the town of Beaver, in Beaver County. The Mineral Mountains provide a dramatic western skyline to travelers on I-15. The range is the largest exposed plutonic body in Utah featuring a remarkable, complex and scenic geological resource. Composition ranges from quartz monzonite in the northern portion of the range to granite in the southern portions which contains excellent smoky quartz and feldspar crystals prized by rock hounds. There are certain areas featuring basaltic lava evidencing more recent volcanism. There are three obsidian flows, up to 65 feet thick, which have been used by indigenous peoples for thousands of years. Obsidian tools and scatter originating from the Mineral Mountains have been found all over the region.[1]

[1] Sources: *Wildhorse Canyon Obsidian Quarry Nomination Form*, National Register of Historic Places, Utah Division of State History; and Utah Geological Survey website

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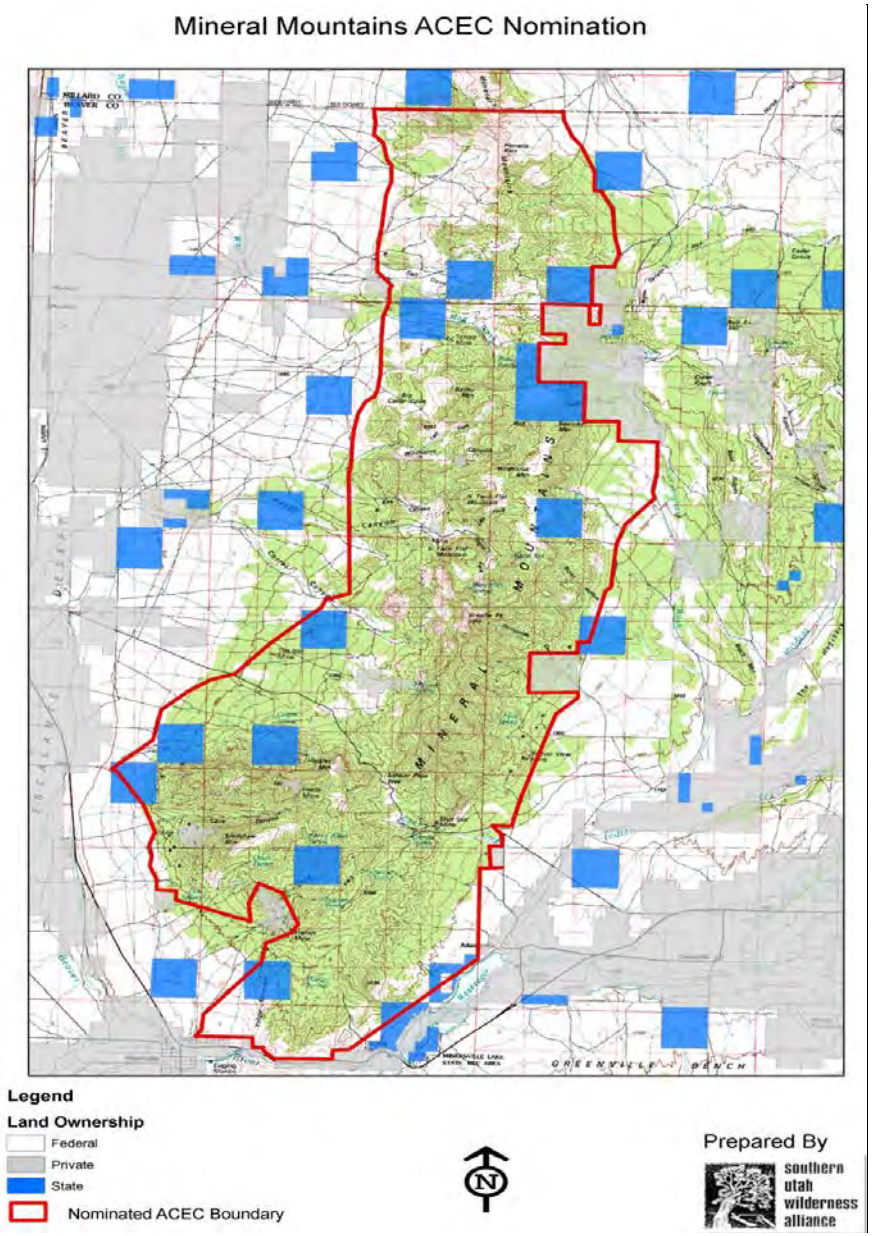
The nominated ACEC includes the historic Wildhorse Canyon obsidian quarry, listed in the National Register of Historic Places (FRHP), as well as other significant cultural sites, including obsidian shaping and manufacturing sites in the vicinity. See attached map for boundaries. **Relevance** The nominated Mineral Mountains ACEC meets the *relevance* criteria of 43 CFR 1610.7-2: *There shall be present a significant historic, cultural or scenic value; a fish or wildlife resource or other natural system or process; or a natural hazard.* The Mineral Mountain area contains a very high density of cultural sites – which the BLM notes in the leasing EA ([UT-040-08-036] page 16). The obsidian quarry at Wildhorse Canyon has been listed on the Federal Register of Historic Places since 1976. There are three obsidian flows that are up to 65 feet thick. Three varieties of obsidian are present: True obsidian, pitchstone, and brown obsidian.[2] Extensive tailings piles evidence that quarry and manufacturing operations occurred here for thousands of years, not just for one culture or one period. Significant cultural resources extend beyond the FRHP site, as chipping and manufacturing camps have been found in the Mineral foothills.[3] The Mineral Mountains nominated ACEC contains the following fish and wildlife resources, or habitat which meets relevancy as a natural process of system: Utah DWR Mammal Habitat Coverage data Mule deer and black bear. Utah GAP Analysis data Ferruginous hawk – UT sensitive species, Williamson's sapsucker, burrowing owl - UT sensitive species, Lewis' woodpecker - UT sensitive species, Swainson's hawk, peregrine falcon, osprey, northern goshawk – Conservation Agreement Species, bald eagle, willow flycatcher, ringtail cat, Virgin River montane vole, pika, Townsend's big-eared bat - UT sensitive species, Utah prairie dog listed as threatened under the Endangered Species Act, Utah mountain kingsnake, Utah milk snake, and Western boreal toad. In the wake of the recent 2007 Milford Flat fire and previous fires there is extensive habitat damage, especially to the upland sagebrush flats. This is historic sage grouse brooding territory, and with careful restoration work, could again support this population. [2] Utah Geological Survey website [3] Janetski, J.C. "Trade in Fremont society: contexts and contrasts." Journal of Anthropological Archaeology 21 (2002).	

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	
In addition to unique and important cultural and wildlife resources, the Mineral Mountains contain a significant scenic resource. Several volcanoes are located within the nominated ACEC. The highly eroded granite regions are unique in the area and region and continue to draw visitors to the area to recreate. **Importance** The cultural values contained by the nominated Mineral Mountains ACEC are more than locally significant -- the area has qualities that make it irreplaceable, unique and exemplary. This is evidenced by the listing of the Wildhorse Canyon obsidian quarry with the National Register of Historic Places. The cultural values around the Mineral Mountains are threatened and vulnerable if not managed in such a way as to preserve and protect these values. The scattered cultural sites in the nominated ACEC are fragile, rare in such concentrations, irreplaceable, and certainly vulnerable to development, including oil and gas exploration and development. The presence of three varieties of obsidian is rare and remarkable. No other quarry in Utah has three varieties, making this value more than regionally significant. Protection of cultural resources is a national priority; therefore any cultural resource identified as relevant is also determined to be important according to the BLM ACEC Manual 1613. The occurrence of the species listed under the federal Endangered Species Act and Utah Sensitive Species (please see above list in "Relevance" section) makes the area and species more than locally significant, thereby meeting the importance criteria. These threatened and endangered species create a wildlife value that is vulnerable and threatened by the surface disturbing activities associated with oil and gas development and by the proposed actions contemplated in the EA presently open for comment (UT-040-08-036). Scenic values are highly rare with regards to lands managed by the Cedar City Field Office, but as well within Utah's West Desert. The character of the range attracts visitors from the surrounding communities, throughout Utah and from elsewhere. The scenic qualities are distinct to the region – many other Basin and Range mountain ranges lack such impressive and scenic geological values. **Special Management** The cultural, scientific, ecological, and scenic values of this ACEC are at risk from various forms of human encroachment, including energy development and off-road vehicle travel. The BLM must prioritize designation of the Mineral Mountains ACEC before completion of a final oil and gas leasing EA, as activities associated with oil and gas exploration and development, and subsequent off-road vehicle use may impair the	

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	
values contained in the nominated ACEC. The BLM must devise and implement management to protect those values that are identified in the ACEC area. In order to adequately protect the unique, rare and nationally significant resource values of the proposed ACEC, the following management prescriptions should be applied: • Public lands in the ACEC should be retained in public ownership. Non-federal lands in the ACEC should be acquired through purchase, exchange, or donation to further the accomplishment of the resource objectives and to increase manageability of the area. Any lands acquired by BLM within the ACEC should be managed in accordance with the ACEC prescriptions. • Except for sites located along frequently visited trails, ways or roads, all archaeological sites within the proposed ACEC should be managed for conservation. Sites located along frequently visited travel corridors shall be managed for public values and interpreted for educational use. Surveillance and law enforcement measures should be increased within the ACEC to deter vandalism and other destructive activities. Such programs may involve the employment of site steward programs, in which volunteers will be trained to monitor the sites and report resource degradation. Cooperative agreements with interested Indian tribes, government agencies, and qualified organizations should be used for protecting and otherwise managing archaeological resources. • The ACEC should be assigned a VRM Class I or II. • The ACEC should be closed to fuel wood sales. • The ACEC should be designated a right-of-way avoidance area. • The ACEC should be closed to oil and gas lease sales, or managed, at a minimum, as a no-surface occupancy (NSO) area. • BLM should strive to exchange or purchase any existing oil and gas leases in the ACEC. • For any existing oil and gas leases in the ACEC -- BLM must prepare an EIS at the APD stage, and must add lease restrictions to protect the flora and fauna of the ACEC. • The ACEC should be closed to disposal of mineral materials. • BLM should recommend that the area be withdrawn from mineral entry. Pending Secretarial approval of the withdrawal, mining plans of operation should be required for all mining exploration and development activities. • Lands within the ACEC should be classified as primitive, or semi-primitive non-motorized for areas with designated routes. Motorized travel must be limited to <u>designated</u> roads and trails to protect the resources in the ACEC. Fencing, barricading, and signing should be employed as necessary to eliminate unauthorized vehicle access and impacts to protect the resources. • Standards for Rangeland Health, including monitoring and assessment programs, must be employed to determine if management objectives for this proposed ACEC area are being met. If monitoring revels that the objectives and standards are not being met, adjustments in permitted land uses will be made to the extent such are determined to be contributing factors. Changes will include reduction in numbers and changing season of use to minimize direct competition wildlife.	

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	
• No new wildlife or "range" improvements should be allowed in the ACEC, except to preserve natural habitat for native species of plants and animals. • Non-native species must not be introduced into the ACEC. • No mechanical vegetation treatments should be allowed within the ACEC, except those designed to restore native conditions, such as native seeding to restore native plant species. • All natural springs in the ACEC should be maintained in their natural condition. Temporary exclosures (consistent with other management prescriptions, i.e. VRM or IMP) should be considered in order to protect the springs from impacts from domestic livestock grazing. • BLM should preclude any diversions or developments along any creeks or streams in order to protect the integrity of this natural system. • Restrict climbing within spatial buffers around cultural sites.	

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	



COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	

PHOTOS OF MINERAL MOUNTAINS NOMINATED ACEC

All photos credited to Ray Bloxham

Photo 1 – looking southeast in the Park.

Photo 2 – Looking southeast. The Park is a highly scenic area within the Mineral Mountains.

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	
Photo 3 – Looking south from the Park.	
Photo 4 – Looking south from the Park.	

COMMENT(S)	RESPONSE(S)
14 Southern Utah Wilderness Alliance (continued)	
Photo 5 – looking northwest at granite outcropping.	
Photo 6 – Looking east Granite Peak.	

COMMENT(S)

RESPONSE(S)

15 Sportsmen for Fish and Wildlife, Dixie Chapter Committee

Todd Abelhouzen <rta@intermountainrecovery.com>
Sent by: rtabelhouzen@gmail.com

07/18/2011 09:15 PM

To
utsrbproj@blm.gov, Randy_Trujillo@blm.gov

cc
nolan.gardner@sgcity.org, stevegurney@live.com, kyle hawker <hawkerenterprises@hotmail.com>, Austin Anderson <austin@ajconstructioninc.com>, Bob Nicholls <benich2006@skyviewmail.com>, CJ Wade <cjwade@stephenwade.com>, CHAD E NOWERS <ROCKINGNRANCH@msn.com>, Cole Pilling <cpilling@tmcrushing.com>, David Clark <dclark@utah.gov>, Don IPSON <dipson@utah.gov>, Donnie Hunter <sadkee@netutah.com>, Dave Woodhouse <dwoodhouse@sfcn.org>, Dave Black <daveb@racivil.com>, Wes Davis <wdavis@naiutahsouth.com>, Erik Sorensen <erik@sorensenwade.com>, Robert Eves <eves@suu.edu>, "Troye@encehomes.com" <troye@encehomes.com>, Greg Easton <gje@eastontp.com>, Steve Flinders <steveflinders@fs.fed.us>, Kole Freeman <kolefreeman@yahoo.com>, JOHN GRAHAM <grahams6@hotmail.com>, James Gilson <jtgilson@emerytelcom.net>, Jake Graff <jakegraff@yahoo.com>, Gary Syrett <gary@rubysinn.com>, Rocking G Lofts <zgelk@hotmail.com>, Scott Grange <scottg@browning.com>, Teresa Griffin <teresagriffin@utah.gov>, Rusty Hall <trophyhunter@digis.net>, Travis Hansen <travis.hansen@ads-pipe.com>, Hal Cherry <hcswf@infowest.com>, Ira McArthur <ira@infowest.com>, Indyauto7@yahoo.com, Jeff Coon <jeffreylcoon@msn.com>, Jeremy Perkins <jperkins@olwm.com>, Ken Labrum <kenbigram@hotmail.com>, Brad Last <blast@utah.gov>, MIKE

1

COMMENT(S)

15 Sportsman for Fish and Wildlife, Dixie Chapter Committee (continued)

KEIM <primekeim@msn.com>, Kurt Wood <trannyman2@hotmail.com>, Kent Nobis <kentn@racivil.com>, LANCE ROBERTS SFW <ihunt365@gmail.com>, Lyle Bayles <lyle.bayles@sjc.ceu.edu>, Douglas Messerly <dougmesserly@utah.gov>, niki.warner@beyondbb.com, martyl@canyonmedia.net, ncence@infowest.com, Shane Olsen <shanedessnow@live.com>, "Scott A. Jackson Jackson" <Scott.Jackson@mvtrac.com>, randyc@washco.state.ut.us, Todd Abelhouzen <rta@intermountainrecovery.com>, Tim - AMS <Tim@amssg.net>

bcc

Subject

Sigurd to Red Butte No. 2 345kV Transmission Project

To whom it may concern,
After much review and group discussion the Sportsman for Fish & Wildlife Dixie Chapter Committee representing over 1000 Sportsmen in Southern Utah make the following recommendations, comments, and suggestions for the Sigurd to Red Butte No. 2 345 kV Transmission Project.

15A The new Power Transmission Lines if allowed should only be allowed to follow existing easements & highways and not be allowed to further encroach on critical Wildlife Habitat. Many of the areas proposed for "route changes" cross and encroach on critical Mule Deer Fawning and Summer Range as well as transitional Mule Deer Habitat in Washington and Iron Counties.

Adding stress to these habitats would only increase the damage to the already challenged Mule Deer Populations.

15B There are certainly issues relating to the existing Power Transition Lines but there is no need to bring other habitat into the realm of these same or additional challenges. By keeping the encroachment and adversity within the existing areas allows other areas to stay as wild and untouched as possible. We are aware that subsequent "easement requests" may be made and are not willing to allow for the risk to the areas where Mule Deer Fawns which are the future of our Mule Deer Herds might be harmed further.

The SFW Dixie Chapter's Moto is: Putting the Resource First! Protecting habitat, wildlife and the opportunity for youth recruitment will help us to reach this goal.

R. Todd Abelhouzen

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RESPONSE(S)

15A Comment and route preference noted. Analysis of impacts on big game crucial range by alternative is presented in Tables 3-42 and 3-45.

15B See response to comment 15A.

COMMENT(S)	RESPONSE(S)
15 Sportsman for Fish and Wildlife, Dixie Chapter Committee (continued)	
SFW, Dixie Chapter Chairman &SFW, Executive Committee Member 800-983-7376 Office, 435-703-0224 cell CONFIDENTIALITY NOTICE- This notice is: Strictly confidential. If you are not the intended recipient of this notice, you may not disclose, print, copy or disseminate this information. If you have received this in error, please reply and notify the sender (only) and discard the notice.	

COMMENT(S)

RESPONSE(S)

16 Citizens for Dixie's Future

Michael Small <utahsmalls@msn.com>
07/18/2011 01:38 PM

To <utsrbproj@blm.gov>
cc Christi Biniaz <christi.biniaz@gmail.com>
bcc
Subject Comments on DEIS (Sigurd to Red Butte Transmission Line)

Attached are my comments. Please note that these are both my personal comments and the comments of Citizens For Dixie's Future (CDF). I am a board member of CDF. Thanks again for the opportunity to comment.

Mike Small

356 Damascus Drive
Saint George, UT 84790

435 673-0710

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COMMENT(S)

16 Citizens for Dixie's Future (continued)

Attn: Tamara Gertsch

c/o Bureau of Land Management

Cedar City Field Office

176 East D.L. Sargent Drive

Cedar City, UT 84720

RE: SIGURD TO RED BUTTE NO.2 345 KV TRANSMISSION PROJECT DEIS 11-22

DOI-BLM-UT-COIO-2009-0048-EIS --- CASE FILE: 83067

Dear MS Gertsch:

My name is Mike Small and I have lived in St. George, Utah, for 25 years. I am also a part-time resident of Pine Valley, Utah, and am an active member of the Pine Valley Volunteer Fire Department. Additionally, as a retired BLM wildlife biologist I have slightly over three decades experience as an incidental wildland fire fighter. Below are a few comments and concerns I have regarding this proposed electrical transmission line.

These comments are primarily mine, but also represent those of Citizens For Dixie's Future (CDF), an organization whose purpose is to maintain and improve the quality of life in Washington County.

First, I did attend the recent workshop in St. George and felt everyone was friendly and helpful. That event was useful in helping me understand the various proposed and alternative routes and other issues. And I certainly understand that obviously the DEIS documents themselves took a lot of hard work and expertise to develop. I enjoy and support having good, reliable electrical service.

My written comments presented here will mostly address some fire management, safety, visual, and biological concerns in Washington County, and are chiefly directed at Route Segment 260, especially in the area where it crosses the Pine Valley Road.

16A 1. The DEIS document is well organized and relatively easy to follow. However in my opinion some sections, such as earth resources, seem to have more detail than other probably more pertinent sections, such as biological resources.

16B 2. The Public Health and Safety section was inadequate because it did not address wildland fire fighter safety in proximity to a 345 KV electrical transmission line in

RESPONSE(S)

16A The structure and content of each resource section was developed by BLM in coordination with the agency ID team to provide the detail they believed necessary to address the issues and concerns identified for each resource during scoping and to comply with regulatory or policy requirements.

16B Wildland fire ecology and management are discussed in Section 3.2.11. Fire prevention and mitigation measures will be implemented through an Emergency Preparedness and Response Plan and a Fire Protection Plan to be developed in coordination with USFS and other cooperating agencies and included in the POD.

COMMENT(S)

16 Citizens for Dixie's Future (continued)

16B enough detail. Fire activity near high voltage electrical transmission lines can cause multiple hazards which can electrocute or seriously injure firefighters.

16C 3. The DEIS is also inadequate because it did not discuss the fact that the Pine Valley Road though narrow is the only paved access to and from Pine Valley. In a fire emergency this road could easily become closed. On a summer holiday weekend over 3000 people can be found in the town of Pine Valley and on the nearby Dixie National Forest, including the Pine Valley picnic and camping areas.

16D 4. One very significant omission on the list of federally listed species which may be found in the area is the California condor, an endangered species, and the bird with the widest wingspan of any flying bird in North American (9.5 feet). California condors were re-introduced to northern Arizona on December 12, 1996, and have expanded into southern Utah. This condor population is expected to continue to grow and become more widely distributed. Currently a number of condors are regularly found in Zion National Park and these birds can readily fly 100 miles in a day. They have been in Washington County many times, I have personally seen them in Hurricane, Ivins, St. George, and a few miles east of New Harmony. There is no reason they could not be found on occasion near Pine Valley or Central.

16E 5. This document needs to reassure the public that the electrical conductors and other charged equipment and insulators will be at least ten (10) feet apart in order to avoid possible electrocution of California condors.

16F 6. The DEIS comment on page 4-38 that the project potentially pose safety hazards to fire fighters is a gross understatement. During a fire near high voltage transmission lines particulate matter in the smoke can transmit fatal electrical charges to firefighters. Water sprayed directly onto charged conductor lines can also transmit deadly electricity back to the firemen holding the hose nozzles. Smoke from a fire can obscure transmission lines from pilots of low flying helicopters and fixed wing aircraft which are fighting the fire. Heavy smoke and flames can cause arcs to the ground.

16G 7. In addition, cheatgrass increases resulting from construction disturbance of the route of the transmission line by themselves increase the risk of fire occurrence. In the case of Route Segment 260, there is no existing good access for firefighters to get to a fire along the proposed line; the alternative routes in Washington County generally have better access for firefighting.

16H 8. Over 25% of the land in Washington County has burned in the last eight years, some more than once. The increase in fire frequency, fire size, and fire severity in this area is troubling. There is no question in my mind that during the life expectancy of this project, large fires will occur along this line. I hope that building and operating the line regardless of which route is selected will not increase fire occurrence in vicinity of the transmission line. However, the Route

RESPONSE(S)

16C See response to comment 16B.

16D California condor also is discussed in detail in Appendices D and E.

16E Potential effects related to conductor spacing are addressed in Section 3.2.4.5. The proposed conductor spacing for the Project is consistent with Avian Power Line Interaction Committee guidelines.

16F See response to comment 16B.

16G Design features of the Proposed Action (Section 2.3.5.2) and mitigation measures applied for environmental protection (Section 3.1.3) include proactive measures to prevent the establishment of weeds in the right-of-way, such as treatment of noxious and invasive weeds during construction and post-construction monitoring.

16H Comment and route preference noted.

COMMENT(S)	RESPONSE(S)
16 Citizens for Dixie's Future (continued)	
16H Segment 260 south of Newcastle to me poses more firefighting difficulties than do the other choices which are closer to State Route 18 and are in more of an utility corridor.	
16I 9. One other firefighting consideration is that especially of Route Segment 260 south of Pinto, the initial firefighters who would likely respond to a fire along the line, if built, are volunteer firefighters from Pine Valley and Central. Most are older retired folks and it could be several hours before a sizeable force of paid federal wildland firefighters would arrive.	16I Comment and route preference noted.
16J 10. Perhaps the biggest negative impact for most people of the Route Segment 260 would be the long term cumulative impact of visual change in the natural environment. Presently the natural viewshed along the Pine Valley Road is general intact. There are currently interesting natural perspectives all along that road of the vegetation and wilderness mountains, and also from the residences. This project's Route Segment 260 would certainly add an undesirable industrialized view. While not quite the same as a knife cut across the Mona Lisa, the Segment Route 260 would also diminish some great views of the Pine Valley Mountains from State Route 18.	16J Comment and route preference noted. Visual effects of the Project were analyzed in the EIS and are presented in Section 3.2.8.
16K 11. Finally, mitigation items which are frequently added to transmission lines are often at cross purposes. For example, non-spectral conductors are often used to lessen visual impacts of electrical transmission lines, but also make the lines more difficult to see by biologists doing helicopter big game counts, law enforcement personnel looking for illegal crops, and firefighters being transported by helicopter to a fire. In another example, adding aviation safety balls to transmission lines sometimes makes the lines more visible when the goal should be to minimize the lines visibility on a distant horizon. Safety balls where a line crosses a roadway or maybe even a canyon are good, but please do not get carried away with mitigations measures where there is not a problem.	16K Comment noted.
Bottom line, Segment Route 260 has too many problems and should be rejected. The analysis in this DEIS is good in many ways, but is inadequate especially with wildland fire management concerns.	
Thank you for the opportunity to comment. Please contact me if any of these comments need clarification. I can be reached at 435 673-0710.	
Mike Small 356 Damascus Drive Saint George, UT 84790	

COMMENT(S)

17 Mountain Meadows Massacre Descendents

Rt 7/2

DEPT OF THE INTERIOR
RECEIVED
JUL 19 2011
BUREAU OF LAND MANAGEMENT
CEDAR CITY UTAH

PATRICIA NORRIS
PRESIDENT – MOUNTAIN MEADOWS MASSACRE DESCENDENTS
545 CR 846
OMAHA, ARKANSAS, 72662
07/01/2001

Ms. Tamara Gertsch
BLM Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84721

Dear Ms. Gertsch;

Thank you for the opportunity to present our concerns to you in regards to the **Sigurd to Red Butte No. 2 Transmission Project EIS**. Page S-12 of the EIS states that the study has determined the preferred route to be a combination of Alternative N1 and Alternative S2. If we read this correctly, S2 is the route planned to come through the Mountain Meadow Massacre Site.

On behalf of our group, we would like to address the following points:

1. The Mountain Meadow Massacre Site was awarded national historic landmark status on June 23, 2011.
2. Wagon Train Members of the Baker and Miller families were Cherokee.
3. How does Pacific Corporation plan to deal with the possibility of uncovering human remains through excavations for the footings for the H-frames which will carry the transmission lines through the "preferred S-2" Mountain Meadow Massacre site?
4. "The Historic Properties Treatment Plan is confidential." Will the Mountain Meadows Massacre Descendants group(s) have access to that report?
5. We hope the S-5 corridor option will be reconsidered in light of the new information we are providing in this letter.

17A 1) First, the correction - The Mountain Meadow Massacre Site was awarded national landmark status by Secretary of the Interior, Ken Salazar on June 23, 2011. It is our understanding that this award generates new possible protections/procedures to the Section 106 process. We anticipate renewed discussions as a consulting party and would like to reiterate Secretary Salazar's words when he said, " . . . that this designation will help meet the goals of . . . "America's Great Outdoors Initiative to establish a conservation ethic for the 21st century and reconnect people, especially

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RESPONSE(S)

17A The EIS has been revised to acknowledge the designation of the site as a NHL since the Draft EIS was published.

COMMENT(S)

17 Mountain Meadows Massacre Descendents (continued)

17A young people, to our nation's historic, cultural, and natural heritage." (Aside: if it helps, this correction needs to be made to pages S-10, 3-154, 3-162, 3-169, 3-170, 3-174.)

17B 2) We believe we may be afforded some protection under the American Indian Religious Freedom Act. Both the Baker family and the Miller family were Cherokee. Appendix C of the EIS reports that Shannon A. Novak's book, House of Mourning: A Biocultural History of the Mountain Meadows Massacre was used as a reference. The family of Captain John Twitty Baker, co-leader of the massacred victims of the wagon train, was Cherokee originally from Guildford County NC 1768. Pages 159-161 of Ms. Novak's book describes three teeth from Native American ancestry found in the mass grave belonging to two people – one of which was a child about the age of six.

In *Lyng V. Northwest Indian Cemetery Protective Association (1988)*, it was argued that "altering the land site/view [of Native American burial sites] constitutes invasions of tribal self-understanding" and "the dissipation of tribal identity is the consequence of land desecration" (Brown, Brian Edward. Religion, Law, and the Land: Native Americans and the Judicial Interpretations of Sacred Land. Greenwood Press, 1999. pg. 6, 7). The "visual sensitivity" discussed in this case and the impact it has on a Native American gravesite will give strength to the importance of place as mentioned Chapter 3, page 162 of the EIS report.

The most disturbing admission in the report for us is stated in Table 4-4 (Cumulative Effects) describing the cultural and historical damage to Mountain Meadows as "**irreversible and irretrievable**."

We're concerned the EIS used just two reference books to investigate the significance of Mountain Meadows. It appears Ms. Novak's reference to Cherokee people being buried at Mountain Meadow was missed, or considered irrelevant.

We hope to pursue possible options through the aid of the National Association of Tribal Historic Preservations Officers in Washington, along with the Cherokee Historic Officer in Cherokee, NC. It is our understanding that this issue can be pursued after the July 18 deadline and via Section 106 guidelines. We have noted that all the tribes involved in the evaluation process were western tribes, and the Cherokee Nation was overlooked.

3) In addition to the discussion of the view shed, in the June 7, 2010 meeting on Section 106 consultation, one specific question was raised - what will be the impact on human remains through excavations for the footings for the H-frames which will carry the transmission lines through the "preferred S-2" Mountain Meadow Massacre site? We could find no information on how Pacific Corp plans to address the possibility of uncovering the remains of our ancestors? The LDS Church History Department wrote to us after that meeting to tell us that the "proposed route segment 444 is the closest

2

RESPONSE(S)

17B The American Indian Religious Freedom Act applies to recognized American Indian tribes and their members. Specifically, the law is to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites (Public Law 95-341, 42 U.S.C. 1996 and 1996a).

BLM contacted the Cherokee Nation and the Eastern Band of Cherokee Indians to inform them of the proposed project and invite them to participate in the Section 106 consultation process. Both tribes informed BLM that they are not interested in the Project or participating in the Project consultations.

COMMENT(S) | **RESPONSE(S)**

17 Mountain Meadows Massacre Descendents (continued)

in proximity to known sites of historical significance. It will cross SR 18 immediately south of the turn off to the lower monument [includes 2 possible grave sites currently being investigated – page 3-154 implies one grave site at Mountain Meadow] and will be very close to the upper monument on Dan Sill Hill."

4) Page 3-159 states "The Historic Properties Treatment Plan is confidential." Will the Mountain Meadows Massacre Descendants group(s) have access to that report? As a consulting party, will we be notified when the Programmatic Agreement including the cultural resource study conducted for this EIS is finalized and available (p.3-147)?

5) Table 3-159 and table 3-161 both suggest alternate route S-5 (proponent's proposed action) carries more weight than the Mountain Meadow S-2 site. We just want to go on record as "please, don't use S-2 – use S-5 instead."

We are all feeling a bit hopeless and irrelevant after reading the EIS report. Maybe I should have started my letter off with . . . "For what it's worth . . ." In addition to Ms. Novak's scientific work, the only other reference listed was the book produced by Mr. Turley and the Mormon Church. We had hoped that the EIS would have studied materials that were not biased toward the Mormon interpretation of events. In Appendix C, we read where initial meetings took place a year before we were even aware of this project. Those meetings were attending by Senator Orrin Hatch's office, Senator Bob Bennett, Senator Ralph Okerland, Representative Jim Matheson – all powerful members of the Church of Jesus Christ of Latter Day Saints.

Thank you in advance for taking the time to read this letter, and being kind enough to consider the feelings of a few over the power and money of many. We've worked for over twenty years with different members of the LDS church in order to resolve old hurts and prejudices. We felt that we had come very far in the work that we've done together. But those that we have worked with are very small in number when compared to the scope of this power line project and the large number of Mormon citizens and politicians involved. We have always known many would prefer to see the Mountain Meadow Massacre Site just go away. It looks like based on this report that is exactly what is planned to happen.

Sincerely,

Patricia Norris, gggranddaughter of Captain Alexander Fancher
I lost 9 immediate family members, as well as many other relatives in
The Mountain Meadows Massacre, and they are all buried
"somewhere" in the Mountain Meadows Valley

cc: Lysa Wegman-French
Patricia Hoffman
Sharon Knowlton
Nate Thomas

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Individuals

COMMENT(S)

18 Jason Gubler

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT

BLM Public Open House Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at a public meeting or mail it to the following address.

Attn: Tamara Gertsch
c/o Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Jason Gubler Date: 6/30/2011, St. George

Title: Organization that You Represent: Self X

Mailing Address: City: State: Zip:

Telephone (optional):

Comments: *(Please use back if additional space is needed)*

18A Members of my family own10 20-acre parcels of lands (RMP map 79) located adjacent to each other within the study corridor for the two central routes proposed. We currently use the property for recreation, grazing, gardening (including an orchard/fruit trees) and all have concrete plans to build more houses and structures for our family's use in the future. Selection of this route would impact my entire family in the ways listed below. One concern is that we have a water system on our property and/or my family's adjacent properties, which occur in the study area for the proposed transmission line. Various parts of this water system (spring, well, two water tanks, two head houses, 4 in. water pipeline to our properties) occur on these properties in my family's ownership. The parcel no. that the spring is located on (owned by my uncle, McKay Hafen) is E-1488-0000-0000. The east central route would go directly over this spring. I am concerned the project impacting the flow of this spring, which is our family's water source, and/or the construction of the line limiting future development of the water source for our use. My aunt has a trailer that they keep on the property (parcel no. E-1488-0003-0000) and are opposed to having the transmission line cross their property. I am also concerned about impacts to my uncle's cabins (parcel no. listed above) and recreational structures (community center, picnic pavilion, restrooms/showers, playground – parcel no E-1488-0002-0000) that we have built my parent's land, which occur in the study corridor for west-central route. Further, I own parcel no. E-1488-0006-0000). My parcel has the water well and water tank, and occurs in the study corridor for both central routes. I prefer the westernmost (Ox Valley) alternative because it would avoid our properties and impact less private land.

Please Note:

Comments are due by July 18, 2011

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment -- including your personal identifying information -- may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

RESPONSE(S)

18A Comment and route preference noted. The EIS considers design features of the Proposed Action (Section 2.3.5.2) and selective mitigation measures (Section 3.1.3) to reduce impacts on water resources such as wells, springs, streams, rivers, and wetlands, including designing the transmission line to span these features and requirements for handling and disposing of hazardous materials used in construction.

Proximity to homes and potential aesthetic effects on sensitive viewers were considered as presented in Section 3.2.8.5 in the Draft EIS. As a result of comments received during public review of the Draft EIS, the Proponent has modified the route alignment of Link 441 in this area to avoid crossing private parcels. The route is now located on BLM-managed lands.

COMMENT(S)

RESPONSE(S)

19 Peggy Gubler

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT

BLM Public Open House Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at a public meeting or mail it to the following address.

Attn: Tamara Gertsch
c/o Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Peggy Gubler Date: 6/30/2011, St. George

Title: Organization that You Represent: Self X

Mailing Address: City: State: Zip:

Telephone (optional):

Comments: *(Please use back if additional space is needed)*

19A **Members of my family own10 20-acre parcels of lands located adjacent to each other within the study corridor for one of the proposed routes. We currently use the property for recreation, grazing, gardening (including an orchard/fruit trees and all have concrete plans to build more houses and structures for our family's in the future. Selection of this route would impact my entire family in the ways listed below. One concern is that we have a water system on our property and/or my family's adjacent properties, which occur in the study area for the proposed transmission line. Various parts of this water system (spring, well, two head houses, 4 in. water pipeline to our properties) occur on these properties in my family's ownership. The parcel no. that the spring is located on (owned by my brother, McKay Hafen) is E-1488-0000-0000. One of the proposed routes goes directly over this spring. I am concerned the project impacting the flow of this spring, which is our family's water source, and/or the construction of the line limiting future development of the water source for our use. I am also concerned about impacts to my brother's cabins (parcel no. listed above) and recreational structures (community center, picnic pavilion, restrooms/showers, playground – parcel no E-1488-0002-0000) that we have built my land, which occur in the study corridor for one of route alternatives. Further, my son, Jason Gubler owns parcel no. E-1488-0006-0000. His parcel has the water well and the water tank, and also occurs within the study corridor. I prefer the westernmost alternative because it would impact less private land.**

Please Note:

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19A See response to Comment 18A.

COMMENT(S)

20 Kirk Harrison

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To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Kirk Harrison Date: 6/29/2011
Title: Organization that You Represent: Self ☐
Mailing Address: 1514 Sunrise Circle City: Boulder City State: NV Zip: 89005-4210
Telephone (optional):

Comments: *(Please use back if additional space is needed)*

20A I am a landowner in Pinto Valley, Utah. Link 260 is proposed to go not only through Pinto Valley, but my land as well. I am adamantly opposed to this line in the Pinto Valley as well as through my private land. My family settled in Pinto in 1860. Respectfully, I submit the proposed project is totally inappropriate for this area. I have handled condemnation cases previously and will exhaust any and all appeals, if necessary. In addition, there previously was a man that lived in the Pinto Valley who was an expert in Indian artifacts. In particular, he was credited with a major Anasazi find, including a rare clovis point. He told me that the area south/southeast of my property, where the proposed line is presently routed, was a major Anasazi indian emcampment. I would add that the central alternative routes already have existing linear facilities and access routes. Moreover, that area is already studied; rights of way have previously been obtained; roads necessary for line construction are already in place; and the adjacent areas are already environmentally impacted.

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RESPONSE(S)

20A Comment and route preference noted.

The USFS archaeologist for the Dixie National Forest has conducted numerous cultural resource surveys in the Pinto Valley and has not encountered any large Anasazi encampments. Large Paiute encampments and large Archaic encampments, as well as some discrete Anasazi sites such as isolated pot drops, have been identified. However, none of the large encampments documented are located within study corridor for Alternative S1 (through the Pinto Valley). In addition, the USFS archaeologist is not aware of any Clovis projectile point finds in the Pinto Valley area.

The USFS archaeologist invites members of the public to share their knowledge regarding archaeological sites they have encountered in the Dixie National Forest. Any documented information gathered on archaeological sites, such as Universal Transverse Mercator coordinates, map plots, or photographs can be submitted directly to the USFS archaeologist. It should be noted that artifacts illegally collected have been removed from their in situ context; as such, then retain no scientific integrity that can be used to establish temporal or cultural affiliations in support of the formal site documentation necessary for the protection of archaeological sites under federal law.

Before any RODs would be signed by the BLM and USFS, a Class III intensive field survey of the selected route and associated access roads and ancillary facilities would be conducted and the results documented in a Class III Technical Report. All cultural resources identified during the intensive surveys would be evaluated for eligibility to the NRHP based on criteria set forth in the federal regulation 36 CFR 60.4. The final Class III Technical Report would facilitate BLM, in consultation with the SHPO, to identify NRHP-eligible properties and make determinations on eligibility of, and potential effects on, those properties. Following completion of the Class III Technical Report, the HPTP addressing the effects of the proposed undertaking on identified historic properties would be prepared and implemented in consultation with the BLM, SHPO, other involved agencies, and consulting parties.

COMMENT(S)

21 Jim and Marilyn Lurth

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Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Jim + Marilyn Lurth Date: 6/28/11
Title: Concerned Citizen Organization that You Represent: Self ☐
Mailing Address: P.O. Box 355 City: Minersville State: UT Zip: 84752
Telephone: 438-386-2554

Comments: *(Please use back if additional space is needed)*

21A Please select the "N1" route for the power line. It's in an area where nothing is - no farms, only 1 road. And on the west side of the valley there is already a power line. People are used to seeing power lines on the west side of the valley, so another one is no big deal.

The "N6" route for the power lines have to be routed around farms on the Milford Flat & can't follow the gas pipeline. Then it would have to be routed around in Minersville Fields = a current map we saw has the power lines going over the Minersville farmland.

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RESPONSE(S)

21A Comment and route preference noted. BLM has verified Alternative N6 does not cross any active agricultural operations that are not compatible with a transmission line.

COMMENT(S)

22 Gordon Poppitt

From: "Gordon Poppitt" [poppitt@infowest.com]
Sent: 07/07/2011 07:52 PM CST
To: Tamara Gertsch
Cc: "Alan Gardner" <Alan.Gardner@washco.utah.gov>; "jeff/pat hart" <bdixiedear@infowest.com>; <ronnie@teamvause.com>; "steve haluska" <stevenhaluska@gmail.com>; "dean cox" <dean.cox@washco.utah.gov>; "Denny Drake" <Denny.Drake@washco.utah.gov>; "james eardley" <jeardley@washco.state.ut.us>; "dave patterson" <davep@wcattorney.com>
Subject: Re : Rocky Mounytain Power routing

Tamara,

22A From the Enterprise meeting , it was VERY obvious that all of the concerns which I had submitted with regard to the potentially disastrous impact upon Central community's water district (by running the route to the East of current lines) have been ignored in the EIS.....
Incredibly , the politics of allowing the LDS church declare the Mountain Meadows purchase as a Historical Site between the presentations , has been allowed to divert the most "logical" routing to become that which will once again depredate the community of Central to it's most detrimental status ...

If , indeed , you do allow the "corridor" configuration to be "your choice" , then ,at least, use the Westernmost potential route (S-4..?) as the eventual choice .....

we already have asituation wherein the present Sub-Staion growth has defaced the area , has submitted residents to vastly larger lighting intrusions at night , and has depreciated the view and environment by the enormous growth (tumor) which has already occurred ....
The future will turn this community ,previously one of calming choice , into one of worthless property values , ugly visual views , and in time to a ghetto.

<Maybe State and federal agency executives should be obligated to own property/properties in the areas most impacted by their seemingly uncaring decisions .....??

Sad that politics is the eventual decision-maker in projects of such detrimental impact as this.....!!

1

RESPONSE(S)

22A There is no "sole source" aquifer in the Project area. As defined by the EPA, a sole source aquifer "…supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and also stipulates that these areas have no alternative drinking water source which could physically, legally, and economically supply all those who depend on the aquifer for drinking water." There are only three sole source aquifers in Utah, as defined by the EPA, and none are located in the Project area.

In addition, the BLM corresponded with the Dixie Deer Special Service District. The water district manager had no prior knowledge of the Kane Spring and indicated that the community of Central draws water from two wells near Highway 18 (Dixie Deer Special Service District Water Conservation Plan, 2010 and 2011). The wells are near the intersection of West Frontier Road and Highway 18, which is approximately 2,700 feet from any proposed Project facilities. Since these wells do not exist within 600 feet of the Project centerline they were not considered in the impact analysis. The location of the Kane Spring has been identified using data from the Utah Automated Geographic Reference Center and with a standard USGS 1:24,000 topographic map. Kane Spring does not come within 600 feet of the Project centerline so it also was excluded from the Project impact analysis.

COMMENT(S)

RESPONSE(S)

23 Gordon Poppitt

Subject: FW: Gordon Poppitt DEIS Comments on Sigurd Red Butte
Attachments: Gordon Popppit EIS comments.pdf

Amanda:

For the record:

Attached are comments I received yesterday evening from Seth Stinson, on behalf of Gordon Poppitt, whose computer was down.

- Tamara

Tamara Gertsch
BLM National Project Manager
5353 Yellowstone Road
Cheyenne, WY 82009
Office phone: 307-775-6115
Cell phone: 307-287-3656
Office Fax: 307-775-6203
Email: Tamara_Gertsch@blm.gov
----- Forwarded by Tamara Gertsch/WYSO/WY/BLM/DOI on 07/18/2011 08:29 AM -----

Seth Stinson <sethchalee@gmail.com>
07/17/2011 06:37 PM

To: tgertsch@blm.gov
cc:
Subject: Gordon Poppitt EIS Comments

Tamara.

Gordon's computer is broken and he asked me to forward his document to you. If you have any trouble please call me @ 435-574-2801. He would like this to appear in the final EIS document.

Thank you,

Seth Stinson(See attached file: Gordon Popppit EIS comments.pdf)

1

COMMENT(S)

23 Gordon Poppitt (continued)

1

To Todd Christiansen
or Tamara Gertsch

Re: Draft EIS for
Sigurd to Red Butte #2 - 345 KV.

23A ◦ Observation is that although this is a somewhat comprehensive, voluminous document it prioritizes emphasis on satisfying Federal and State agencies, but does not include, in any detail, the concerns and issues raised at the "sounding board" meetings held in rural communities (Enterprise for example) (1)

At each meeting, points of concern were addressed (through the in-house stenographers AND in hand-written separate submissions) on several specific matters, none of which appears in this draft document.

Examples

23B The routing of the planned S-2 lines (to the East of existing lines below Mtn Meadow Monument) would have seriously potential detrimental impacts and effects

RESPONSE(S)

23A BLM hosted a scoping meeting in the community of Enterprise, Utah, on February 17, 2010. All comments received at the scoping meetings were documented in the Scoping Report (available on BLM's Project website). Issues, derived from the comments received from scoping, were considered to determine the topics and level of effort to address in the studies and analyses for the EIS (refer to Table 1-1 of the EIS). Table 1-1 also lists the sections of the EIS where the issues are addressed.

The Proponent also held multiple outreach meetings, including several meetings with the Community Working Groups. These Proponent-initiated activities are summarized in Appendix B.

23B See response to comment 22A.

COMMENT(S)

23 Gordon Poppitt (continued)

2

23B upon the Kane Springs aquifer which is the Sole Source for the community of Central, which is it's own Water District. (It is not indicated on your Map MV-5D (water resources)
(See pg 3-58 - "WELLS Located within 600 feet of project elements COULD be affected")

Nowhere in this Draft EIS document is any
(2) reference given to this danger.

23C In Michael Kavin's April 10TH, 2010 to Cindy Smith (File Code: 2380) he raises concern for lack of analysis of such matters, along with that same lack of investigation into Scenic Integrity objectives into "unassigned areas along the proposed power line routes".
(Appendix A - Letter from US Forest Service - Dixie NF)

In this same context then, it is most obvious that absolutely NO intent or time allotment was considered in evaluating ANY visual contrast to the most obvious segment of the project - The Community of CENTRAL and

RESPONSE(S)

23C Areas with unassigned Scenic Integrity Objectives (SIO) on the Dixie National Forest were evaluated and assigned SIOs for analysis in the EIS (refer to Dixie National Forest SIO report in Appendix H of the EIS).

A visual simulation in proximity to the town of Central has been added to the Project analysis for the central corridor connection into the Red Butte Substation (Appendix I).

COMMENT(S)

23 Gordon Poppitt (continued)

3

23C

Immediately North of Same -
Since this final 4 miles of the connection into Red Butte SubStation is a "given", it can only be deduced that this SCENIC INTEGRITY impact oversight was deliberate and intentional ----
This is NOT acceptable!
As Mike Kama pointed out then (4/10/10) there are gaps (omissions) and inaccuracies in this Scenic Management system (3)

If whoever was instrumental in deciding which segments needed Scenic Contrast study and photographs had been unbiased he/she would have clearly taken time and effort to view and rate the significant cumulative negative effect that this new line will result on the West side of Highway 18 in Central.

23D

Interestingly, Central is the ONLY unincorporated community to which Scenic Impact/Contrast study and documentation was not performed — WHY??

RESPONSE(S)

23D Potential impacts on visual resources in the community of Central were evaluated as described in the EIS (Section 3.2.8.4) and illustrated on Map MV-12d. They included views from residences, travel routes, and recreation areas. In response to comments received on the Draft EIS, an additional visual simulation viewing the proposed transmission line from Central along State Route 18 has been included in the Final EIS. Incorporated and unincorporated communities (including Central) were identified on the resource maps to aid in reader review (MV-12a-d).

COMMENT(S) | **RESPONSE(S)**

23 Gordon Poppitt (continued)

4

23D * COULD IT BE THAT THE CARTOGRAPHERS EITHER INTENTIONALLY OR IN IGNORANCE * DELIBERATELY INDICATE "CENTRAL" TO BE MORE DISTANTLY EAST THAN ITS TRUE LOCATION

These comments may appear to be (to some) ~~[illegible]~~ minimal in status, but it should be considered that, since we are at the point where Red Butte S/S exists, the residents of Central should given equal time in the resultant format of this project.

23E (4) It is understood that the Red Butte Substation must expand accordingly but, in so doing, it does not mean that its appearance cannot blend better into the scenic integrity, nor should it mean that added lighting should further infringe upon the night appearance of the area.

It is hoped that this will correct to oversights and exclusions in your final EIS document, and that some corrective actions will now be taken to address them.

23E Expansion of the Red Butte Substation is not part of the Proposed Action for this Project; thus, any modifications expanding the substation are not within the scope of analysis for this EIS.

COMMENT(S)

24 Norma and Richard Querio

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176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Norma + Richard Querio Date: 6/29/11
Title: Organization that You Represent: Self ☑
Mailing Address: 280 W Frontier Rd City: Central State: UT Zip: 84722
Telephone: (435) 656-0339

Comments: *(Please use back if additional space is needed)*

24A We want the proposed electrical lines to be as far to the west of Central as possible. Do not put them near Pinto or Pine Valley as this ~~gives~~ ruins the beauty and good feeling of the whole area. We very much enjoy the old Pioneer feeling that pervades our community.

Norma Querio
Rich Querio

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RESPONSE(S)

24A Comment and route preference noted.

25 Cody Staheli

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To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Cody Staheli Date: 6/29/11
Title: Land owner Organization that You Represent: Staheli Family & Staheli Farms Self ☐
Mailing Address: Po Box 40 City: Enterprise State: ut Zip: 84725
Telephone: 435-878-5553

Comments: *(Please use back if additional space is needed)*

25A We as a Family and a business have concerns with the proposed route 345 that goes up through the Ox Valley location. Our concern is that this will not be the only power line going through the corridor.

25B Our other issue is the fact that a road will be going through the valley and private property, wich will cause alot traffic through the valley.

25C We would hope you would stronger consider following the existing power lines that go through the already existing corridor. that will follow the gas lines.

25D Our last concern as a resident of the city of Enterprise is the fact that our city spring is along this route. Water is vital to our small city and I hope you will take this into consideration.

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25A Comment and route preference noted.

25B The POD will include a Traffic and Transportation Management Plan that will address regulatory compliance, traffic management practices, levels of right-of-way access, and selective mitigation measures to help reduce impacts related to transportation within the vicinity of the Project. Every effort would be made to minimize the effects of the Project construction activities on public transportation and to provide for public safety. Coordination of equipment traffic would occur along existing access roads so that public safety, traffic impacts, and resource impacts would be minimized. In general, the number of construction vehicles (refer to Table 2-8) needed for the Project is not expected to substantially increase traffic volumes.

25C Comment and route preference noted.

25D BLM confirmed that there is no "sole source" aquifer in the project study area, as defined by the EPA. A sole source aquifer "…supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and also stipulates that these areas have no alternative drinking water source which could physically, legally, and economically supply all those who depend on the aquifer for drinking water." There are only three sole source aquifers in Utah, as defined by the EPA, and none are located in the Project area.

COMMENT(S)

26 Laurence Staheli

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Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Laurence Staheli Date: 6.29.11
Title: Land owner Organization that You Represent: Self ☑
Mailing Address: 270 S Yoeuit Lane City: Veyo State: ~~[illegible]~~ UT Zip: 84782
Telephone: 1-435-574-3296

Comments: *(Please use back if additional space is needed)*

26A I Think they ought stay with the Path they all Ready have. They don't Need to come thru 285, + Enterprise area, there is a Better Route where it is.

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RESPONSE(S)

26A Comment and route preference noted.

COMMENT(S)

27 Ilo and Joyce Twitchell

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To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Ilo and Joyce Twitchell Date: 6/29/2011

Title: Organization that You Represent: self X ☐

Mailing Address: 15 N Sundance Kid Trail City: Central State: UT Zip: 84722

Telephone (optional): 435-705-1499

Comments: *(Please use back if additional space is needed)*

27A We are the closest house to the project (1500 feet) on the west side (Link 275). We are concerned about the increase in and constant noise from the transmission line. We already have existing noise from the Red Butte substation; we believe if the transmission line is located as proposed we will be restricted from opening our windows

27B due to noise. We don't like the idea of a transmission line this close to our house due to potential effects, which are

27C unknown. We request that the BLM select links 280/285 as the selected route for this transmission line.

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RESPONSE(S)

27A As discussed in Section 3.7.5.3, noise modeling conducted for the Project indicates that the level of audible noise from the transmission line would be below the EPA's established guideline for annual average day-night level in outdoor areas.

27B Impacts associated with health and safety of the transmission line is addressed in Section 3.7.

27C Comment and route preference noted.

COMMENT(S)

28 Gay Utley

susan utley <gay-sue@sbcglobal.net> 06/22/2011 07:26 AM	To "utsrbproj@blm.gov" <utsrbproj@blm.gov>	
	cc	
	Subject Sigurd to Red Butte No. 2 project	
Please respond to susan utley <gay-sue@sbcglobal.net>		

28A Tamara Gertsch,
I own property on the north perimeter of Mud Flat north of interstate 70, Sevier County . Access has been fenced off and we now have a key to the gate. My question is will there be any poles or any other equipment installed on private property? Do you have a map showing the route in this area that you could email or fax to me? I am unable to attend a public meeting.

Thank you,
Gay Utley
2030 E Jayme St
Pahrump, NV
email: gay-sue@sbcglobal.net
702 497 4328 (cell)
775 727 4299 (fax)

1

RESPONSE(S)

28A The final engineering design of the transmission line, including tower locations, is not complete. However, structures on private land would be required. When the engineering design for the selected route has been completed and rights-of-way for the Project have been authorized or permitted by federal, state, and local agencies, the Proponent's right-of-way services group would identify all privately owned parcels impacted by the Project, prepare easement and exhibit documents, and conduct comparable market data study or prepare an appraisal to determine fair market value. Landowners will then be engaged in compensation negotiations and legal processing to secure rights-of-way for the Project on private lands.

COMMENT(S)

RESPONSE(S)

29 L.D. and Joyce Winder

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Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: L.D. and Joyce Winder Date: 6/30/2011, St. George

Title: Organization that You Represent: Self X

Mailing Address: City: State: Zip:

Telephone (optional):

Comments: *(Please use back if additional space is needed)*

29A Members of my family own10 20-acre parcels of lands located adjacent to each other within the study corridor for one of the proposed routes. We currently use the property for recreation, grazing, gardening (including an orchard/fruit trees and all have concrete plans to build more houses and structures for our family's in the future. Selection of this route would impact my entire family in the ways listed below. One concern is that we have a water system on our property and/or my family's adjacent properties, which occur in the study area for the proposed transmission line. Various parts of this water system (spring, well, two head houses, 4 in. water pipeline to our properties) occur on these properties in my family's ownership. The parcel no. that the spring is located on (owned by my brother, McKay Hafen) is E-1488-0000-0000. One of the proposed routes goes directly over this spring. I am concerned the project impacting the flow of this spring, which is our family's water source, and/or the construction of the line limiting future development of the water source for our use. We have a trailer that we keep on the property(parcel no. E-1488-0003-0000) and are opposed to having the transmission line cross our property. I am also concerned about impacts to my brother's cabins (parcel no. listed above) and recreational structures (community center, picnic pavilion, restrooms/showers, playground – parcel no E-1488-0002-0000) that we have built my land, which occur in the study corridor for one of route alternatives. Further, my nephew, Jason Gubler owns parcel no. E-1488-0006-0000. His parcel has the water well and the water tank, and also occurs within the study corridor. I prefer the westernmost alternative because it would impact less private land.

29B

29C

Please Note:

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29A See response to comment 18A.

29B Comment and route preference noted. See response to comment 18A.

29C Comment and route preference noted.

COMMENT(S)

30 Robert and Susan Gray

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176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Robert & Susan Gray Date: 7.8.11
Title: manager Organization that You Represent: Grassy Flat Land & Livestock, LLC Self ☐
Mailing Address: 233 E. 200 S. City: Central State: UT Zip: 84722
Telephone: 435-574-2782

Comments: *(Please use back if additional space is needed)*

30A There aren't many places left in this country where you don't see the intrusion of modern civilization. The power line on proposed route #260 will do just that to an unmarred piece of property. That property being Grassy Flat/Gray's Ranch. It is a quiet place where deer graze and wildlife thrive. A power line with it's construction will disrupt that peace and leave an ugly scar on the landscape. Just when the land tries to heal another line will come through, for it is never enough for utility companies, they always want more land, more lines. Please don't let them do this here, #260.

Please Note:

Comments are due by July 18, 2011

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RESPONSE(S)

30A Comment and route preference noted. Based on comments received during scoping, the Proponent modified the alignment of Link 260 to minimize crossing the subject private property to the extent possible given terrain and USFS management area boundaries.

COMMENT(S)

31 Anchalee Jaidee

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
BLM Public Open House Comment Form

If you wish to submit comments, please feel free to use this form or other correspondence and hand it in at a public meeting or mail it to the following address.

Attn: Tamara Gertsch
c/o Bureau of Land Management
Cedar City Field Office
176 East D.L. Sargent Drive
Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: ANCHALEE JAIDEE Date: 7/7/2011

Title: CERT. TEAM Organization that You Represent: Self ☐

Mailing Address: 281 N. BUTCH CASSIDY TRAIL City: CENTRAL State: UT Zip: 84722

Telephone: 435-574-2001

Comments: (Please use back if additional space is needed)

31A WE BOUGHT OUR HOME IN THE J-P FOREST AND PAID A PREMIUM FOR OUR VIEW TO THE MOUNTIANS TO THE EAST TOWARD PINE VALLEY. NOW A NEW POWER LINE WILL CREATE AN EYE SORE AND MAKE OUR HOME VALUE PLUMMET. THE

31B PINE VALLEY ROUTE WILL POSE FIRE HAZARDS AND REQUIRE NEW ROADS TO BE CARVED INTO THE FOREST TO SERVICE THE LINES AND TOWERS. DURING OUR DISASTER TRAIN CLASSES FOR CERT. THE SUB STATION WAS PRESENTED AS A POTENTIAL REASON FOR EVACUATION AND LOSS OF LIFE AND PROPERTY DUE TO FIRE OR TERRORISM. THE POWER LINE FROM PINE VALLEY IS A BAD IDEA!!

31C ROUTES WEST OF EXISTING LINES IS A BETTER WAY, WITH LESS IMPACT ON OUR COMMUNITY. WE LIVE ½ MILE FROM RED BUTTE AND FEEL OVERCOMED WITH MORE AND MORE "ELECTRIFICATION". NO POWER LINES IN OUR FRONT YARD — GO WEST — WAY WEST.

Please Note:

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RESPONSE(S)

31A Potential impacts on visual resources are addressed in Section 3.2.8. Visual simulations for the Pine Valley area are presented in Appendix I.

31B It is unlikely that Project facilities would cause fires. Transmission lines may attract lightning; however, the shield wire (located along the top of the structures) provides protection to the system. Lightning that may strike an area potentially would hit the line rather than a house or tree. There could be potential short-term impacts during construction related to increased risk of ignitions due to construction activities. Fire prevention and mitigation measures would be implemented through an Emergency Preparedness and Response Plan and a Fire Protection Plan to be included in the POD. Further, any permanent access roads maintained after construction could be used for fighting wildland fire, if necessary, as well as serve as a fire break.

31C Comment and route preference noted. Impacts associated with health and safety of the transmission line, including electric and magnetic fields, are addressed in Section 3.7.

COMMENT(S)

32 LaVeryl Porter

Attn: Tamara Gertsch
c/o Bureau of Land Management
Cedar City Field Office
176 East D. L. Sargent Drive
Cedar City, Utah 84720

Re: Sigurd to Red Butte No. 2 345kV Transmission Project
Draft Environmental Impact Statement

I was unable to attend the public meeting held in St. George, but would like to make comments concerning this project.

I own parcel #E-1488-0001-0001 that is located within this study corridor for one of the proposed routes. Members of my family own 10 20-acre parcels of land adjacent to each other within this area. We currently use the property for recreation, grazing, gardening, orchard, and have plans to build more houses and structures for our families in the future. Selection of this route would impact my entire family in the ways listed below.

32A One concern is that we have a water system on our various properties, which occur in the study area for the proposed transmission line. This water system includes a spring, a well, two head houses, and a 4 in water line. The spring is located on parcel E-1488-0000-0000, which is owned by my brother McKay Hafen. One of the proposed routes goes directly over this spring. I am concerned that the project will impact the flow of this spring, which is our family's water source, and/or the construction of the line limiting future development of the water source for our use.

32B I am also concerned about impacts to my brother's cabins (parcel listed above) and recreational structures (community center, picnic pavilion, restrooms/showers, play ground) located on parcel no E-1488-0002-0000. The well and one head house are located on parcel no E-1488-0006-0000, which is owned by my nephew Jason Gubler.

32C I prefer the westernmost alternative because it would impact less private land.

Thank you,

LaVeryl Porter

LaVeryl Porter
2323 Primrose
Santa Clara, Ut 84765
435-628-1884

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CEDAR CITY UTAH

RESPONSE(S)

32A See response to Comment 18A.

32B See response to Comment 18A.

32C Comment and route preference noted.

33 Guy and Mary Ritchey

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT
DRAFT ENVIRONMENTAL IMPACT STATEMENT
BLM Public Open House Comment Form

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Cedar City, UT 84720

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CEDAR CITY UTAH

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Guy H. & Mary C. Ritchey Date: 7-17-11
Title: Organization that You Represent: Self ☒
Mailing Address: 25 N. Doc Holiday Ln City: Central State: Ut Zip: 84722
Telephone: 435-574-2511

Comments: (Please use back if additional space is needed)

We are very unhappy with the way the Gas and Electric companies are destroying our beautiful Forest and wildlife invirement.

33A We hope they will not use the 260 plan and will be restricted to the areas they have already ruined.

Mrs Mary C. Ritchey

Please Note:

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33A Comment and route preference noted.

COMMENT(S)

34 Seth Stinson

SIGURD TO RED BUTTE NO. 2 345kV TRANSMISSION PROJECT
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Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: SETH STINSON Date: 7/7/2011

Title: C.E.R.T. TEAM Organization that You Represent: Self ☐

Mailing Address: 281 N. BUTCH CASSIDY TRAIL City: CENTRAL State: UT Zip: 84722

Telephone: 435-574-2801

Comments: (Please use back if additional space is needed)

THE PINE VALLEY TO RED BUTTE IS THE WORST POSSIBLE ROUTE. ALL ROUTES WEST OF MY HOME A BETTER CHOICES ARE MORE DESIREABLE, IN FACT, THE FURTHER WEST THE BETTER. MY OBJECTIONS TO THE PINE VALLEY ROUTE ARE AS FOLLOWS:

34A • FIRE RISK'S: SMOKE FROM FOREST FIRE MAY SHUT OUT LINES AND THEREFORE MY LIFE AND HOME.

34B • RADIO RECEPTION: AM RADIO IS VITAL IN OUR HOME FOR FIRE, FLOODING, WEATHER ALERTS. POWER LINES CREATE A WALL OF INTERFERENCE FROM ST. GEORGE AND CEDAR CITY BROADCASTS.

34C • C.E.R.T. EVACUATION: AS C.E.R.T. TEAM MEMBER ALL POWER LINES AND SUBSTATIONS POSE A POTENTIAL FOR FIRE, EXPLOSION AND TERRORIST ATTACKS.

34D • REDUCTION OF PROPERTY VALUES: MORE POWERLINE IN PLAIN SIGHT EQUALS LOWER HOME VALUES.

34E • SPARK GAP & RADIATION: LINE OF SIGHT PROPAGATION MAY BE HARMFUL TO HUMANS, ANIMALS & PLANTS.

Seth Stinson

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RESPONSE(S)

34A Fire prevention and mitigation measures would be implemented through an Emergency Preparedness and Response Plan and a Fire Protection Plan to be included in the POD. Further, any permanent access roads maintained after construction could be used for fighting wildland fire, if necessary, as well as serve as a fire break.

34B The potential effects of the Project on the existing levels of radio noise are addressed in Section 3.7.

34C See response to comment 34A.

34D Socioeconomic impacts of the proposed and alternative routes are identified in Section 3.2.12.

34E Comment and route preference noted. The Draft EIS addresses both of these issues in Section 3.7. Spark gap is discussed in Section 3.7.1.4 and radiation (electric and magnetic fields) in Section 3.7.2.1

COMMENT(S)

35 Arleen Tolman

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
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Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Arleen A. Tolman Date: 7-10-11

Title: Organization that You Represent: Self ☒

Mailing Address: 920 W. 5484 N. City: St. George State: Ut Zip: 84770

Telephone: 435-628-1238

Comments: *(Please use back if additional space is needed)*

35A I wish to protest part of the Sigurd to Red Butte No. 2345KV Transmission project. I protest the project route going through Pinto, Pine Valley to Red Butte. This transmission Line should go on down the power corridor from New Castle to Red Butte.

Please Note:

Comments are due by July 18, 2011

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RESPONSE(S)

35A Comment and route preference noted.

COMMENT(S)

36 Rueben Tolman

SIGURD TO RED BUTTE NO. 2 345KV TRANSMISSION PROJECT
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c/o Bureau of Land Management
Cedar City Field Office
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Cedar City, UT 84720

To submit comments via email: utsrbproj@blm.gov

Please Print Clearly

Name: Reuben C. Tolman --- EAGLEBROOK, CORP. Date: 7-10-11

Title: _____ Organization that You Represent: _____ Self ☒

Mailing Address: 920 W. 5484 N. City: St. George State: Ut Zip: 84770

Telephone: 435-628-1238

Comments: *(Please use back if additional space is needed)*

36A We wish to protest part of the Sigurd to Red Butte No. 2345KV Transmission project. We protest the project route going through Pinto, Pine Valley to Red Butte. This transmission Line should go on down the power corridor from New Castle to Red Butte.

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RESPONSE(S)

36A Comment and route preference noted.

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