

Energy Gateway South Transmission Project

Visual Resource Technical Report

Prepared for

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LIST OF ACRONYMS AND ABBREVIATIONS

ACEC	Areas of Critical Environmental Concern
Applicant	PacifiCorp, doing business as Rocky Mountain Power (Applicant for right-of-way grant)
BLM	Bureau of Land Management
COUT	Colorado to Utah – U.S. Highway 40 to Central Utah to Clover alternative routes
COUT BAX	Colorado to Utah – U.S. Highway 40 to Baxter Pass to Clover alternative routes
EIS	Environmental impact statement
EPG	Environmental Planning Group
FLPMA	Federal Land Policy and Management Act of 1976
GIS	Geographic information system
GWR	General big-game winter range
I-15	Interstate 15
I-70	Interstate 70
KOP	Key Observation Point
kV	Kilovolt
LRMP	Land and Resource Management Plan (USFS)
NEPA	National Environmental Policy Act
NHT	National Historic Trail
NPS	National Park Service
NST	National Scenic Trail
Project	Energy Gateway South Transmission Project
RFFA	Reasonably foreseeable future action
RMP	Resource Management Plan
SLRU	Sensitivity level rating unit (BLM)
SQRU	Scenic quality rating unit (BLM)
SRMA	Special recreation management area
USFS	U.S. Forest Service
VMS	Visual management system (USFS)
VQO	Visual quality objective (USFS)
VRI	Visual resource inventory (BLM)
VRM	Visual resource management (BLM)
WHMA	Wildlife habitat management area
WMA	Wildlife management area (State of Utah)

WSA	Wilderness study area
WWEC	West-wide Energy Corridor
WYCO	Wyoming to Colorado – Aeolus to U.S. Highway 40 alternative routes

LIST OF ACRONYMS APPLICABLE TO THE PROJECT-LEVEL SCENERY RATING UNIT WORKSHEETS

ANF	Ashley National Forest
FFO	BLM Fillmore Field Office
GJFO	BLM Grand Junction Field Office
LSFO	BLM Little Snake Field Office
MFO	BLM Moab Field Office
MLSNF	Manti-La Sal National Forest
PFO	BLM Price Field Office
RFO-UT	BLM Richfield Field Office
RFO-WY	BLM Rawlins Field Office
SLFO	BLM Salt Lake Field Office
UWCNF	Uinta-Wasatch-Cache National Forest
VFO	BLM Vernal Field Office
WRFO	BLM White River Field Office

CHAPTER 1 – BACKGROUND

1.1 Introduction

Environmental Planning Group (EPG) prepared this technical report as part of the visual resources assessment for the Energy Gateway South Transmission Project (Project), a proposed 500 kilovolt (kV) transmission line beginning near Medicine Bow, Carbon County, Wyoming, and terminating near Mona, Juab County, Utah. The Project would potentially cross the states of Wyoming, Colorado, and Utah on lands administered by the Bureau of Land Management (BLM), U.S. Forest Service (USFS), National Park Service (NPS), Indian reservations, state governments, and privately owned lands. After reviewing the scope of the Project, the BLM, as the lead federal agency, determined that the Proposed Action is a major federal action and would require preparation of an environmental impact statement (EIS) in compliance with requirements of the National Environmental Policy Act of 1969 (NEPA), as amended (United States Code: Title 32, Chapter 55, §4321 et seq. [42 United States Code 4321 et seq.]), and Council on Environmental Quality Regulations for implementing NEPA (Code of Federal Regulations: Title 40, Parts 1500-1508).

The purpose of this technical report is to support the Project’s EIS and focus the inventory and impacts discussed in the EIS on key issues, as well as respond to USFS direction to prepare a document similar to a visual resource specialist report. Since only issue areas identified through the Project’s scoping process (both public and agency scoping) and areas of high impacts are discussed in the EIS, this technical report includes a complete inventory and potential impacts resulting from the construction, operation, and maintenance of the Project on scenery and viewers, as well as compliance with agency visual management objectives. Also included in this technical report, is a detailed methodology describing the process used to inventory and assess potential impacts on visual resources. These methodologies were developed through extensive coordination with BLM and USFS landscape architects and recreation/visual resource planners at both the local (field office/national forest) and national levels (Washington Office) and are consistent with and adhere to applicable visual resource policies of these federal agencies.

1.2 Study Personnel

This technical report was developed by EPG, the BLM’s third-party consultant for the preparation of the EIS, in collaboration with visual resource specialists from the BLM and USFS. Coordination with the federal agencies was achieved through monthly Visual Resource Task Group conference calls, in-person interdisciplinary team meetings to review each step of the analysis and through numerous conference calls and emails. This coordination and establishment of the methodology was primarily achieved with the Agency Project Leads for Visual Resources. For the BLM, Karla Rogers was identified as the Visual Resource Project Lead with support from state visual resource leads: Sherry Lahti (Wyoming), Don Bruns (Colorado), and Rob Sweeten (Utah) through development of the Draft EIS. The BLM Visual Resource Project Lead was initially Brad Conover, then Rob Sweeten prior to being selected as the BLM Old Spanish National Trail Administrator. Karla Rogers was the lead as the BLM National Operations Center Landscape Architect through preparation of the Draft EIS, and now John McCarty is providing national direction as the Project’s Final EIS is being prepared. For the USFS, Rick Dustin was identified as the Visual Resource Project Lead and was supported by representatives from each national forest. Table 1-1 lists the individuals that assisted in the preparation of this study, including visual resource specialists from the BLM, USFS, and EPG.

TABLE 1-1 STUDY PERSONNEL	
Name	Position
Bureau of Land Management	
John McCarty	Chief Landscape Architect/National Visual Resource Management (VRM) Lead
Karla Rogers	Former National Operations Center Landscape Architect/VRM Specialist
Wyoming	
Sherry Lahti	Former State NLCS and VRM Program Lead
David Hullum	Rawlins Field Office Outdoor Recreation Planner
Colorado	
Don Bruns	Former State Visual and Outdoor Recreation Planner Lead
Chris Pipkin	Grand Junction Field Office Outdoor Recreation Planner
Gina Robison	Little Snake Field Office Outdoor Recreation Planner
Chad Schneckenburger	White River Field Office Outdoor Recreation Planner
Utah	
Cory Roegner	State Outdoor Recreation Planner Lead
Rob Sweeten	Old Spanish Trail Administrator/Utah Historic Trails Lead
Steve Bonar	Fillmore Field Office Outdoor Recreation Planner
Noelle Glines-Bovio	Richfield Field Office Outdoor Recreation Planner
Katie Stevens	Moab Field Office Outdoor Recreation Planner
Jason West	Vernal Field Office Outdoor Recreation Planner
Josh Winkler	Price Field Office Outdoor Recreation Planner
U.S. Forest Service	
Rick Dustin	Dixie National Forest Landscape Architect
Anita DeZort	Ashley National Forest Natural Resource Specialist
Dave Hatch	Uinta-Wasatch-Cache National Forest Landscape Architect and Recreation Planner
Nate Lewis	Former Manti-La Sal National Forest Environmental Coordinator
Environmental Planning Group	
Marc Schwartz	Visual Resource Director
Kevin Rauhe	Lead Visual Resource Specialist
Nate Ferguson	Visual Resource Specialist
Caree Griffin	Visual Simulation Coordinator
Karen Snodgrass	Visual Simulation Specialist

1.3 Visual Assessment Framework

To assess effects resulting from the Project on visual resources, the first step was to establish a framework in which to build the inventory and impact assessment methodologies. This framework allowed these methods to be consistent with applicable federal, state, county, and local visual resource policies and regulations (Section 1.4); respond to comments received during the Project’s public and agency scoping process (Section 1.5); and to respond to the landscapes traversed by the Project (Section 1.6).

1.4 Regulatory Framework

Visual resource policies and regulations were gathered through review of applicable federal, state, county, and local planning documents including agency visual resource handbooks and manuals, resource management plans (RMP), land and resource management plans (LRMP), and general plans. These policies and regulations formed the baseline for the visual resource study and are described below in detail.

1.4.1 Federal

1.4.1.1 Bureau of Land Management

Pursuant to the Federal Land Policy and Management Act of 1976 (FLPMA), 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. In response to the FLPMA, the BLM developed the Visual Resource Management (VRM) system as presented in *BLM Manual 8400 Series – Visual Resource Management*, 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). The system includes an inventory of scenic values as described in *BLM Manual 8410-1 – Visual Resource Inventory* based on the following factors: (1) diversity of landscape features that define and characterize landscapes in a given planning area (scenic quality), (2) public concern for the landscapes that make up a planning area (sensitivity levels), and (3) landscape visibility from public viewing locations (distance zones). These factors are collectively described as the visual resource inventory and are referred to as the visual resource inventory (VRI) specifically for BLM-administered lands. Combined, these three factors determine VRI Classes, which indicate existing scenic values of BLM-administered lands.

Scenic Quality Rating Units

Scenic quality is a measure of the aesthetic value of landscape scenery based on analysis of seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. The size of Scenic Quality Rating Units (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. BLM Manual 8410-1 identifies three scenic quality classes (Class A, Class B, and Class C) that a landscape may be rated based on the individual rating scores of the seven key factors.

Sensitivity Level Rating Units

Sensitivity level rating units (SLRU) 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 1986a). The BLM assigns land at either 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.

Distance Zones

Distance zones are subdivided areas of the landscape, based on the perception of scenery from viewing locations. Detail visually perceived in the landscape, or Project-associated components, depends on the proximity of these features to viewers. The BLM uses three distance zones for the purposes of the VRI, which are primarily based on how landscapes are viewed. The three distance zones are foreground-midground, background, and seldom seen. The foreground-midground distance zone includes areas seen from highways, rivers, or other viewing locations less than 5 miles away. Areas seen beyond the foreground-midground distance zone, but less than 15 miles away, are in the background zone. Areas not seen in the foreground-midground or background distance zones are in the seldom seen distance zone.

Visual Resource Inventory Classes

VRI Classes are developed through a geographic information system (GIS) analysis based on the matrix shown in Table 1-2 which combines the above three components (scenic quality, sensitivity level, and

distance zones). VRI classes represent the inventoried scenic values of BLM-administered lands and have similar objective definitions as described in Table 1-3, BLM VRM Classes.

TABLE 1-2 BUREAU OF LAND MANAGEMENT VISUAL RESOURCE INVENTORY MATRIX								
		Visual Sensitivity Levels						
		High			Medium			Low
Special Areas		Class I	Class I	Class I	Class I	Class I	Class I	Class I
Scenic Quality	A	Class II	Class II	Class II	Class II	Class II	Class II	Class II
	B	Class II	Class III	Class III/IV ¹	Class III	Class IV	Class IV	Class IV
	C	Class III	Class IV	Class IV	Class IV	Class IV	Class IV	Class IV
		F/M ²	B ²	S/S ²	F/M ²	B ²	S/S ²	S/S ²
Distance Zones								
SOURCE: Bureau of Land Management Manual 8410-1 (1986a)								
NOTES:								
¹ If adjacent area is Class III or lower, assign Class III; if higher, assign Class IV								
² F/M=Foreground – Middleground, B=Background, S/S=Seldom-seen								

Visual Resource Management Classes

BLM Manual Handbook 8410-1 also describes the establishment of four VRM Classes (Class I to Class IV) and associated objectives (i.e., allowable levels of visual disturbance). VRM Classes are assigned through the land use planning process and are used to determine conformance with the RMP and provide direction in regard to mitigation. Below are the objectives defined for each VRM Class as presented in BLM Manual Handbook 8410-1:

TABLE 1-3 BUREAU OF LAND MANAGEMENT VISUAL RESOURCE MANAGEMENT CLASSES	
Visual Resource Management Class	Objective
Class I	Preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change [contrast] to the characteristic landscape should be very low and must not attract attention.
Class II	Retain the existing character of the landscape. The level of change (contrast) to the characteristic landscape should be low. Management activities may be seen, but should not attract attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
Class III	Partially retain the existing character of the landscape. The level of change (contrast) to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
Class IV	Provide for management activities that require major modifications of the existing character of the landscape. The level of change [contrast] to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
SOURCE: Bureau of Land Management 1986a	

As outlined in BLM Manual 8431, compliance with VRM Classes is assessed through a contrast analysis from Key Observation Points (KOP). KOPs are defined in BLM Manual 8400 as, “one or a series of

points on a travel route or at a use area or potential use area, where the view of a management activity would be most revealing” (BLM 1984). BLM Manual 8431 expands on this definition for assessing linear projects, which should be analyzed from several viewpoints representing:

- Most critical viewpoints, e.g., views from communities, road crossings
- Typical views encountered in representative landscapes, if not covered by critical viewpoints
- Any special project or landscape features such as skyline crossing, river crossings, substations, etc.

A contrast rating analysis is conducted from each KOP to evaluate the visual contrast resulting from a proposed action in context with the existing landscape character and applicable VRM Class objective. The contrast rating includes the identification of the degree of contrast as defined by BLM Manual 8431:

- Strong: The element contrast demands attention, will not be overlooked, and is dominant in the landscape.
- Moderate: The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- Weak: The element contrast can be seen but does not attract attention.
- None: The element contrast is not visible or perceived.

The following factors are identified by the BLM to be considered when assessing the degree of contrast:

- (1) Distance: The contrast created by a project usually is less as viewing distance increases.
- (2) Angle of Observation: The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the project is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.
- (3) Length of Time the Project Is In View: If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from an overlook, the contrast may be very significant.
- (4) Relative Size or Scale: The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is place.
- (5) Season of Use: Contrast ratings should consider the physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover and tree defoliation during the winter, leaf color in the fall, and lush vegetation and flowering in the spring.
- (6) Light Conditions: The amount of contrast can be substantially affected by the light conditions. The direction and angle of lighting can affect color intensity, reflection, shadow, form, texture, and many other visual aspects of the landscape. Light conditions during heavy periods must be a consideration in contrast ratings.
- (7) Recovery Time: The amount of time required for successful revegetation should be considered. Few projects meet the VRM management objectives during construction activities. Recovery usually takes several years and goes through several phases (e.g., bare ground to grasses, to shrubs, to trees, etc.). It may be necessary to conduct contrast ratings for each of the phases that extend over long time periods. Those conducting contrast rating should verify the probability and timing of vegetative recovery.

(8) Spatial Relationships. The spatial relationship within a landscape is a major factor in determining the degree of contrast.

(9) Atmospheric Conditions: The visibility of projects due to atmospheric conditions such as air pollution or natural haze should be considered.

(10) Motion: Movement such as waterfalls, vehicles, or plumes draws attention to a project (BLM 1986b).

The results of the contrast analysis from each KOP is compared to the VRM Class (and associated objectives) traversed by the Project to determine whether or not those VRM Class objectives are met. BLM Manual 8431 states that for comparative purposes, the four degrees of contrast (i.e., none, weak, moderate, and strong) roughly correspond with VRM Classes I, II, II, and IV, respectively. In other words, a strong contrast would meet the objectives for VRM Class IV but would likely not meet the objectives for VRM Class III. If the Project through the application of mitigating measures to reduce contrast cannot meet the applicable VRM Class objectives, the BLM may amend the VRM Classes through an amendment to resource management or deny the project proposal.

Washington Office Instruction Memorandum No.2009-167

BLM WO IM No. 2009-167 reiterates existing VRM policy regarding VRI in the context of renewable energy projects (including transmission lines). All BLM field offices must have current VRI and VRM classes delineated as part of the land use planning process. If a BLM field office does not have VRI data, then an inventory will need to be completed to process permit applications (BLM 2009).

National Scenic and Historic Trail Manuals

In September 2012, the BLM developed three manuals describing the administration and management of National Scenic Trails (NSTs) and National Historic Trails (NHTs), (1) *BLM Manual 6250 – National Scenic and Historic Trails Administration*, (2) *BLM Manual 6280 – Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation*, and (3) *BLM Manual 8353 – Trail Management Areas – Secretarially Designated National Recreation, Water, and Connecting and Side Trail*. Of particular note is BLM Manual 6280, which identifies policy direction regarding the BLM’s management approach and the NEPA analysis requirement for NSTs and NHTs (including trails under study). In this visual resources study, the analysis of visual effects on NSTs and NHTs are described in a level commensurate with other issues identified for analysis. For the more in-depth analysis as required by BLM Manual 6280, refer to Section 3.2.19 (National Trails System) of the Final EIS (BLM 2016).

Applicable Resource Management Plan Visual Resource Management Direction

Through review of each RMP associated with the BLM field offices traversed by the Project, applicable management direction for visual resources was identified. This direction includes management of wild and scenic river segments, areas of critical environmental concern (ACECs) designated to protect scenery resources, and other unique VRM direction not included in the *BLM Manual 8400 Series – Visual Resource Management*. The 10 BLM field offices (and associated RMPs) crossed by the Project are listed below including visually appropriate management direction:

- **Rawlins Field Office (Wyoming) –2008 Record of Decision and Approved RMP**
- **Grand Junction Field Office (Colorado)– 1987 RMP and Record of Decision**
- **Little Snake Field Office (Colorado)– 2011 Record of Decision and Approved RMP**
- **White River Field Office (Colorado)– 1997 Record of Decision and Approved RMP**

- **Fillmore Field Office (Utah) – 1987 House Range Resource Area RMP and Record of Decision Rangeland Program Summary**
- **Moab Field Office (Utah) – 2008 Record of Decision and Approved RMP**
 - Visual Resource Management Decision (VRM-6): Designated utility corridors in VRM Class II areas are designated as VRM Class III only for utility projects
- **Price Field Office(Utah)– 2008 Record of Decision and Approved RMP**
 - Scenery ACEC: San Rafael Canyon
- **Richfield Field Office (Utah) – 2008 Record of Decision and Approved RMP**
- **Salt Lake Field Office (Utah) – 1990 Record of Decision for the Pony Express RMP and Rangeland Program Summary for Utah County**
- **Vernal Field Office (Utah) – 2008 Record of Decision and Approved RMP**
 - Wild and Scenic Rivers Management Decisions (WSR-7): The segment of the Lower Green River from the public land boundary south of Ouray to the Carbon County line will continue to be managed as previously recommended as a suitable scenic segment to protect its outstandingly remarkable values. Management will include: VRM – Class I and II
 - Scenery ACECs: Lower Green River Corridor and Nine Mile Canyon

1.4.1.2 U.S. Forest Service

The USFS manages scenery (visual) resources according to the Scenery Management System as described in *U.S. Department of Agriculture Handbook Number 701: Landscape Aesthetics – A Handbook for Scenery Management* or *U.S. Department of Agriculture Handbook Number 462: Visual Management System (VMS) (USFS1974)*. The three national forests crossed by Project alternative routes (Uinta-Wasatch-Cache¹, Manti-La Sal, and Ashley National Forests) manage visual resources in accordance with the VMS. The USFS VMS includes an inventory of landscape value in regard to the variety and distinctiveness of landscape features (variety class), public concern for scenic quality from identified use areas (sensitivity levels), and visibility from identified use areas (distance zones).

Variety Class

Variety classes are classified based on the premise that all landscapes have some value, but those landscapes with the most variety or diversity have the greatest potential for high scenic value. The USFS VMS identifies five features to be used to describe each variety class (landscape): landform, rock form, vegetation, water forms (lakes), and water forms (streams). Similar to the BLM, the USFS rates landscapes according to three classes (Class A, Class B, and Class C) with the following definitions:

- Class A – Distinctive
- Class B – Common
- Class C – Minimal

Sensitivity Levels (and Distance Zones)

To measure the public’s concern for scenic quality of national forests, the USFS identifies sensitivity levels. These values are associated with views from developed roads and trails; campgrounds and visitor centers; and recreation adjacent to water bodies, including lakes, streams, and other bodies. In addition to these identified viewing platforms, the USFS also recognizes that all national forest land may be seen and,

¹In March 2008, the Uinta National Forest and Wasatch-Cache National Forest were combined into one administrative unit. Each of these National Forests is still operating under individual Forest Plans approved in 2003. When the term Uinta is used in context with the USFS, it refers to the Uinta Planning Area of the Uinta-Wasatch-Cache National Forest.

therefore, some degree of visitor sensitivity is established for the entire forest. Three sensitivity levels are identified by the USFS VMS:

- Level 1 – Highest Sensitivity
- Level 2 – Average Sensitivity
- Level 3 – Lowest Sensitivity

In addition to the identification of sensitivity levels of 1, 2, or 3, the USFS VMS also integrates distance zones into the identification of sensitivity levels for national forest lands. Similar to the BLM VRM system, three distance zones are defined by the USFS:

- **Foreground.** The limit of this zone is based upon distances at which details can be perceived. Normally in foreground views, the individual boughs of trees form texture. It will usually be limited to areas within 0.25 to 0.5 mile of the observer, but must be determined on a case-by-case basis.
- **Middleground.** This zone extends from the foreground zone to 3 to 5 miles from the observer. Texture normally is characterized by the masses of trees in stands or uniform tree cover. Individual tree forms are usually only discernible in very open or sparse stands.
- **Background.** This zone extends from Middleground to infinity. Texture in stands of uniform tree cover is generally very weak or non-existent. In very open or sparse timber stands, texture is seen as groups or patterns of trees.

Distance zones are run from each viewing platform with a particular sensitivity level (1, 2, and 3) to determine draft sensitivity levels that are presented as Fg1, for example. This signifies that a particular area of a national forest is in the foreground distance zone of a Level 1 viewer. The draft sensitivity levels are then screened based on the table on page 25 of the USFS VMS manual (USFS 1974) to remove overlap resulting from running distance zones from each viewing platform. The results of that analysis are the final sensitivity levels, which serve as the inventory of viewer values for a national forest.

Visual Quality Objectives

As part of the development of LRMPs, Visual Quality Objectives (VQOs) are assigned for all USFS-administered lands to set an acceptable level of alteration from the natural landscape. As described in Table 1-4, there are five VQOs ranging from the most restrictive (preservation) to the least restrictive (maximum modification). Compliance with VQOs is based on the level of visual contrast produced by a project when compared to the surrounding natural landscape. Conformance with the forest LRMPs are contingent on meeting forest-wide and management area standards, as well as striving to meet forest-wide and management area guidelines to the extent practicable.

TABLE 1-4 U.S. FOREST SERVICE VISUAL QUALITY OBJECTIVE LEVELS	
Visual Quality Objective	Description
Preservation	Allows ecological changes only. Management activities, except for very low visual impact recreation facilities, are prohibited.
Retention	Provides for management activities which are not visually evident. Activities may only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in their qualities of size, amount, intensity, pattern, etc., should not be evident.

TABLE 1-4 U.S. FOREST SERVICE VISUAL QUALITY OBJECTIVE LEVELS	
Visual Quality Objective	Description
Partial Retention	Management activities remain visually subordinate to the characteristic landscape when managed according to the partial retention visual quality objective. Activities may repeat form, line, color, and texture common to the characteristic landscape, but changes in their qualities of sizes, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape. Activities may also introduce form, line, color, or texture which are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape.
Modification	Management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences in the surrounding area or character type. Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate to the proposed composition. Activities which are predominately introduction of facilities such as buildings, signs, roads, etc., should borrow naturally established form, line, color, and texture so completely and at such scale that its visual characteristics are compatible with the natural surroundings.
Maximum Modification	Management activities of vegetative and landform alteration may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences in the surrounding area or character type. When viewed as foreground or middle ground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alteration may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middle ground. Introduction of additional parts of these activities such as structures, roads, slash, and root wads must remain visually subordinate to the proposed composition as viewed in background.
SOURCE: U.S. Forest Service 1974	

Applicable Land and Resource Management Plan Visual Resource Management Direction

The following USFS LRMPs representing the three national forests crossed by the Project were reviewed and referenced for this visual resource assessment:

- **1986 Ashley National Forest Land and Resource Management Plan**
 - Forest-wide Objective Recreation Objective #9: Implement and manage for adopted visual quality objectives.
 - Management Area D (High Forage Production and Livestock Utilization) Prescription: Standard service level VQOs variable to meet range resource needs except in highly sensitive (areas).
 - Management Area F (Dispersed Recreation Roded) Prescription: VQOs at inventoried standards.
 - Management Area N (Range of resource uses and outputs): VQOs as inventoried.
- **1986 Manti-La Sal National Forest Land and Resource Management Plan**
 - General Direction 01: Forest resource uses or activities should meet the adopted VQO as displayed on the Planned Visual Quality Objective Map.
 - General Direction 02: Design and implement management activities to blend with the natural landscape.
 - General Direction 04: Achieve landscape enhancement through addition, deletion or alteration of landscape elements. Examples of these include: (a) addition of vegetation species to introduce unique form, color or texture of existing vegetation; (b) vegetation manipulation to open up vistas or screen out undesirable views.

- General Big-game Winter Range (GWR) Management Unit General Direction 01 (Emphasis is on general big-game winter range): Meet Forest Direction Visual Quality Objectives except where habitat improvement activities occur. Treated sites must be returned to the planned VQO within 10 years.
- **2003 Uinta National Forest Land and Resource Management Plan**
 - Forest-wide Standard (Scene-1): Safety concerns will supersede objectives for scenery when vegetation manipulation, signing, etc., is needed to ensure public safety.
 - Forest-wide Guideline (Scene-2): Forest resource uses or activities should meet the assigned objectives for scenery management as displayed on the map for each management area located in Chapter 5. In the short-term there may be activities that produce impacts not meeting planned scenery objectives, yet facilitate a higher level of scenic quality in the longer term.
 - Forest-wide Standard (Scene-3): The Forest Service publication *The Built Environment Image Guide and the Recreation Opportunity Spectrum* class will be considered in facility design and in the selection of construction materials and colors.

Continental Divide National Scenic Trail Comprehensive Management Plan

The comprehensive management plan for the Continental Divide NST, developed by the USFS, established the following management policy and direction for the trail: “The nature and purposes of the Continental Divide NST are to provide for high-quality scenic, primitive hiking and horseback riding opportunities and to conserve natural, historic, and cultural resources along the Continental Divide NST corridor.” Management policies and direction related directly to VRM provide the following management direction: “The visual resource, as seen from the trail, must be considered in agency land and resource management planning (National Forest Management Act of 1976 and FLPMA) and in specific project planning and design.” In addition, where the trail is located on public lands administered by the BLM, the following direction has been given: “The visual resource inventory will follow the procedures outlined in BLM Manual Section 8400. The inventory shall be conducted on the basis that the Continental Divide NST is a high sensitivity level travel route and will be performed as if the trail exists even in sections where it is proposed for construction or reconstruction” (USFS 2009).

1.4.1.3 National Park Service – Dinosaur National Monument 1987 General Management Plan

The Dinosaur National Monument is managed according to the 1987 General Management Plan. In regard to the areas potentially crossed by the Project, a 1,000-foot-wide scenic easement was established adjacent to Deerlodge Road from U.S. Highway 40 to Deerlodge Park. This easement was established to protect the visual qualities of the road’s rangeland character and precludes all future surface mineral activity, including oil and gas extraction.

1.4.1.4 National Federal Policy

The West-wide Energy Corridor (WWEC) Programmatic EIS establishes interagency operation procedures for visual resources that apply to both the BLM and USFS. This document states that if agency visual management objectives and appropriate visual (scenic) inventory data have not been completed, then these should be developed by the proper agency. The BLM field office manager or forest supervisor will determine the role of the applicant in completing this task (Department of Energy and BLM 2008).

1.4.1.5 Scenic Byways

National Scenic Byways Program was established as part of the U.S. Department of Transportation's *Intermodal Surface Transportation Efficiency Act of 1991* (Title 23, Section 162 of the U.S. Code) which was reauthorized and expanded in 1998 under the *Transportation Equity Act for the 21st Century* and again by the *Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users* in 2005. The National Scenic Byways Program seeks to identify and manage roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities by designating roads as (1) National Scenic Byways, (2) All-American Roads, or (3) America's Byways. In addition to the roads designated as part of the National Scenic Byways Program, scenic byways (or backways) can also be established by the BLM and USFS or states and counties to be managed at a state or local level.

1.4.2 State

Through review of appropriate state transportation plans, no applicable visual resource regulations were identified. The following goals, policies, or objectives were identified through the review of available state park management plans.

1.4.2.1 Starvation Reservoir State Park (Utah)

The Starvation Reservoir State Park is managed according to their 1999 RMP (Bureau of Reclamation 1999). Please note that none of the Project's alternative routes would cross the boundary of this state park. Goals and policies identified in the plan include the following:

- Visual Quality: Scenic quality of the area is a concern. Forty-one percent of the respondents in the 1996 State Parks Visitor's Survey indicated that scenic beauty attracts them to Starvation State Park. Maintaining visual elements is important to the overall recreation experience.
- Recreation and Visual Resources Resource Management Goals
 - Provide a quality and safe recreation experience while protecting the visual resource for future generations.
 - Protect or enhance the visual quality of the area.
 - Provide and maintain adequate facilities and personnel to protect the health and safety of the users, to enhance the quality of the visitor experience, and to protect visual resources from degradation.

1.4.2.2 Huntington (North) Reservoir State Park (Utah)

The Huntington Reservoir State Park is managed according to their 2004 RMP (Bureau of Reclamation 2004). Please note that none of the Project's alternative routes would cross the boundary of this state park. Goals and policies identified in the plan include the following:

- Recreation and Visual Resources Goals: Protect and manage the visual resources.

1.4.3 County

Moffat, Juab, Utah, and Wasatch counties do not have goals, policies, or objectives identified in their general plans in regard to visual resources. This section details the specific visual resource policies of the counties where the Project could occur that may affect the construction, operation, and maintenance of the Project.

1.4.3.1 Carbon County, Wyoming

Unincorporated areas of Carbon County in the Project area are managed under the 2012 Carbon County Comprehensive Land Use Plan. Goals and policies identified in the plan include the following:

- County Goal: Sustain scenic areas, wildlife habitat, and other important open spaces.
- County Strategies and Actions:
 - Protect irrigated agricultural land as an important source of scenic landscapes, open spaces, and wildlife habitats.
 - Undertake a countywide assessment of scenic resources to precisely identify the important scenic areas that should be protected from conflicting land uses.
 - Conduct a survey of County residents to ask which areas have the most important scenic value.

1.4.3.2 Sweetwater County, Wyoming

Unincorporated areas of Sweetwater County in the Project area are managed under the 2002 Sweetwater County Comprehensive Land Use Plan. Goals and policies indirectly related to visual resources identified in the plan include the following:

- Coordinate and cooperate with appropriate federal, state, and local organizations, governments, and agencies to:
 - Identify and protect the County’s natural environment and resources.
 - Recognize and protect the County’s unique cultural, recreational, environmental and historical resources.
 - Identify areas suitable/desirable for open space preservation (These areas may include stream corridors, recreation areas, and wildlife habitat). Explore alternative preservation strategies.

1.4.3.3 Garfield County, Colorado

Unincorporated areas of Garfield County in the Project area are managed under the 2010 Garfield County Comprehensive Plan 2030. Goals related to visual resources identified in the plan include the following:

- Agriculture Goal: Preserve scenic and visual corridors in the county.
- Natural Resources Goal: Ensure that natural, scenic, ecological, and critical wildlife habitat resources are protected and/or impacts mitigated.
- Renewable Energy Goal: Ensure that renewable energy activities mitigate their effects on the natural environment, including air quality, water quality, wildlife habitat, and visual quality.

1.4.3.4 Mesa County, Colorado

Unincorporated areas of Mesa County in the Project area are managed, in part, under 2011 Mesa county Mineral and Energy Resources Maser Plan. Policies related to visual resources identified in the plan include the following:

- PT7: Transmission lines will be designed, with due consideration for economic, technical, environmental, safety, maintenance and legal requirements, to have the least adverse visual impact on the physical beauty of the mountain/valley terrain of Mesa County, including but not limited to such outstanding features as: Unaweep Canyon, DeBeque Canyon, Mt. Garfield, Book Cliffs, Grand Mesa, Colorado National Monument, and Gunnison and Colorado Rivers.

1.4.3.5 Rio Blanco County, Colorado

Unincorporated areas of Rio Blanco County in the Project area are managed under the 2011 Rio Blanco County Master Plan. Goals and policies related to visual resources identified in the plan include the following:

- Goal – OP/PL-2: Promote the preservation of open lands
 - Policy OP/PL-2A: Investigate incentives including conservation easements, density increases, clustering and other techniques for preservation of meadows, river corridors and other visually significant areas in the county and work with developers to accomplish the same.
- Goal – ES-4: Rio Blanco County will work to protect the goals and objectives of the scenic byways to ensure that their qualities are maintained.
 - Policy ES-4B: The County shall require land use applicants to mitigate negative impacts to the scenic byways such as physical buffers, setbacks, viewshed protection, noise mitigation etc.
- Goal – NR-1: Rio Blanco County will seek to ensure the quality of scenic and environmental resources through sound regulation, cooperation with public agencies and education efforts with the public.
 - Policy NR-1B: The scenic quality in Rio Blanco County will be maintained through careful site location and mitigation efforts for new development including but not limited to avoiding ridgeline development; development in prime agricultural areas; night lighting and screening.
 - Policy NR-1E: The County will ensure that rehabilitation efforts are completed in areas where infrastructure installation occurs to avoid unsightly scars, introduction of invasive species and unstable soils.

1.4.3.6 Routt County, Colorado

Unincorporated areas of Routt County in the Project area are managed under the 2003 Routt County Master Plan. Goals, policies, and action items related to visual resources identified in the plan include the following:

- Goal 5.2.A. To ensure that new development does not detract from the rural character of the County or create air, water, noise, visual, and light pollution.
 - Policy 5.3.C. Discourage development on ridges that result in skylining.
 - Policy 5.3.F. Routt County will continue to consider the impacts of development and uses on view corridors, water, wetlands, and air.
 - Action Item 5.4.D. The County will pursue the incorporation of skyline/ridgeline mapping and standards and/or guidelines into the Zoning Regulations to limit or mitigate the placement of structures on skylined ridgelines.

1.4.3.7 Carbon County, Utah

Unincorporated areas of Carbon County in the Project area are managed under the 1997 Carbon County Master Plan. Policies and goals and objectives related to visual resources identified in the plan include the following:

- Goal: Identify areas of high scenic, wildlife, or watershed value and protect these areas from further development. Endeavor to protect scenic and wildlife resources without unduly interfering with landowners' ability to utilize their lands.

- Objective: Preserve scenic vistas and wildlife habitat by restricting hillside development.

1.4.3.8 Duchesne County, Utah

Unincorporated areas of Duchesne County in the Project area are managed under the 1997 (amended winter 1998 and winter 2005) Duchesne County General Plan. Goals and policies related to visual resources identified in the plan include the following:

- Duchesne County supports the wise use, conservation and protection of public lands and their resources, including well-planned management prescriptions. It is the County’s position that public lands be managed for multiple use, sustained yields, prevention of waste of natural resources, and to protect the health and welfare of the public. It is important to the County economy that public lands be properly managed for fish, wildlife, livestock production, timber harvest, recreation, energy production, mineral extraction and the preservation of natural scenic, scientific and historical values.

1.4.3.9 Emery County, Utah

Unincorporated areas of Emery County in the Project area are managed under the 1996 (revised 1999) Emery County General Plan. Policies related to visual resources identified in the plan include the following:

- Policy – Private Land Use and Development: Emery County supports developing, adopting and implementing the land use and development regulations necessary to maintain and protect the County's existing rural character and scenic environment.

1.4.3.10 Grand County, Utah

Unincorporated areas of Grand County in the Project area are managed under the 2012 Grand County General Plan. Goals and strategies related to visual resources identified in the plan include the following:

- Scenic resource protection Goal 1 – Make the County attractive for a wide range of economic sectors
 - Strategy E – Maintain and enhance the recreational, scenic, and cultural amenities unique to Grand County to attract and sustain economic activity.
 - Strategy K – The scenic and ecological qualities in and around Arches National Park are an economic asset, so NPS input will be sought regarding future land uses on neighboring state and private property.

1.4.3.11 Sanpete County, Utah

Unincorporated areas of Sanpete County in the Project area are managed under the 2010 Sanpete County General Plan, Update 2020. Goals and objectives related to visual resources identified in the plan include the following:

- Goal 6: Promote appropriate development of the county’s natural resources.
 - Objective 1: Support the use of the County’s natural resources that is compatible with the preservation of scenic and recreational resources in the county.

1.4.3.12 Uintah County, Utah

Unincorporated areas of Uintah County in the Project area are managed under the 2005 Uintah County General Plan. Policies related to visual resources identified in the plan include the following:

- Industrial land uses, county policy:
 - 3k.7 – Include the following considerations when reviewing industrial development and land use proposals: (5) adequate buffering and/or screening; (6) visual impact to communities; (7) appropriate setbacks from adjacent land uses
- Potentially hazardous and environmentally sensitive areas, county policies:
 - 3l.6 – Vegetation, Soil and Water – If the potential for slope failure or excessive erosion exists, vegetation removal will not be allowed except for street and utility construction unless a County-approved vegetation plan is in place. Associated mitigation measures will be designed to prevent slope failure, excessive erosion, excessive dust, spread of noxious weeds and visual disruption.
- Infrastructure, county policies:
 - 6.12 – Encourage the location and design of utility transmission lines and corridors to, as much as possible, avoid prime agricultural land, urban development areas, sensitive environmental areas, and scenic and historic areas. Whenever feasible, major utilities (oil and gas pipelines, high tension power lines, fiber optics, etc.) will be encouraged to share utility corridors. These corridors may be included on the County’s land use plan map.

1.4.4 Local

The incorporated municipalities located in the visual resources study corridor of Baggs, Wyoming; Hanna, Wyoming; Rawlins, Wyoming; Rangely, Colorado; Dinosaur, Colorado; Castle Dale, Utah; Fairview, Utah; Green River, Utah; Helper, Utah; Huntington, Utah; Nephi, Utah; Orangeville, Utah; and Roosevelt, Utah either do not have general plans or specific planning goals, policies, or objectives for visual resources identified in their general plans. This section details specific policies regarding visual resources for municipalities in the visual resource study corridor that may affect the construction, operation, and maintenance of the Project.

1.4.4.1 Ballard City, Utah

Areas in Ballard are managed under the 2008 Ballard City General Plan. Goals and objectives and policies related to visual resources identified in the plan include the following:

- Goal 7. Maintain a strong, positive image, and individual identity for Ballard City.
 - Objective 1: Protect the scenic vistas and visual quality of entries into the City.
- Open Space Policies:
 - Ballard City places a high priority on protecting distinctive natural features that have a visual impact on the community (ridges, mesas, steep slopes, etc.), areas related to public safety (floodplains), and critical wildlife habitats (wetlands), which are important to maintain the balance of ecological systems.
 - New development and redevelopment should respect and incorporate existing environmental constraints and opportunities to assure growth will exist in harmony with, and enhance the area's natural environment and unique visual setting.

1.4.4.2 Mount Pleasant, Utah

Areas in Mount Pleasant are managed under the 2007 Mount Pleasant General Plan 2007 to 2017. Goals and policies related to visual resources identified in the plan include the following:

- In some cases the City does not control the location of special uses, such as schools or major transmission lines, and the State and Federal Government can preempt local land use authority. However; the City can work with other jurisdictions and agencies on decisions regarding land use. Any negative impacts, including visual impacts, should be mitigated whenever possible.
- Goal: To provide for residential areas in Mount Pleasant that support and complement the unique rural quality and small town character of the city.
 - Policy 1 – Avoid encroachments of land uses which would adversely impact residential areas, i.e.; increased traffic, noise, visual disharmony, etc., by providing adequate screening and buffering of any adjacent commercial or industrial development including parking and service areas.
- Goal: To promote quality businesses and environmentally clean industrial development which will provide a diversified economic base and will complement local retail, commercial, and industrial establishments in harmony with the community's overall rural and historic image and identity as reflected in the Community Vision Statement.
 - Policy 4 – Establish and enforce standards with respect to noise, air quality, odor, visual and other forms of environmental concerns.

1.5 Issues Identified for Analysis

Issue or concern areas for scenic/visual resources were identified through the Project's public and agency scoping process and are located throughout the Project area. As described in Chapter 1 of the Final EIS (BLM 2016), issues for visual resources were focused on the following concerns raised during scoping:

- What are the impacts of the Project on scenery?
- What are the impacts of the Project on views from residences and other viewing areas (e.g., travel routes, recreation areas, and special designations)?
- What are the impacts of the Project on BLM-administered lands where VRM classifications have not been assigned or background data are not available?

Each issue identified during scoping (agency scoping: February 2009 through July 2010; public scoping: April through June 2011), included in the Scoping Report (available on the BLM's Project website) (BLM 2011b), has been placed in two categories (impacts on scenery or impacts on views) to focus the discussion on specific issue areas associated with visual resources. The BLM has both the management classifications (BLM VRM Classes) and the background data (BLM VRI) for all field offices traversed by the Project. In a related concern, both the BLM and USFS have identified compliance with federal agency visual management objectives (and conformance with associated management plans) as an issue for analysis.

The Final EIS contains the list of specific issues and concern areas while this technical report contains the complete detailed inventory and impact assessment for all alternative routes considered in detail in the Final EIS (BLM 2016). As part of this analysis, other concern areas were identified where high impacts on visual resources were determined through the visual assessment. The following is a summary of the three issue categories (concerns) identified for Project-level analysis.

1.5.1 Scenery

In the context of issue identification, inventory, and impact assessment, scenery is defined as a contiguous unit of land comprised of harmonizing features that result in and exhibit a particular character (e.g., badlands scenery, foothills scenery, etc.). Both the BLM and USFS inventory scenic values as part of their visual resource inventories, identified as scenic quality and variety classes respectively, which were

described in detail in Section 1.4. In addition to these inventories completed by the BLM and USFS, to support the analysis of effects across all lands regardless of jurisdiction, project-level scenery rating units were developed. For more information about the development of project-level scenery rating units, please refer to Chapter 2 of this report.

1.5.2 Views

To assess the public’s sensitivity to and perception of landscape modifications, both the BLM and USFS inventory sensitivity levels and distance zones are described in Section 1.4. While there may be differences between these inventories, both federal agencies identify sensitivity levels (and distance zones) to determine public concern toward and visibility of modifications in their viewsheds. To support the analysis of effects on views associated with the Project, in a similar manner described for scenery, a project-level inventory was conducted across all lands adjacent to Project alternative routes. This inventory identified viewing locations (viewers) associated with residences, travel routes, recreation areas, and special designations as well as their level of concern for changes to their viewshed (concern level) and project-level influence zones (distance zones). For more information about the development of the project-level viewing locations, concern levels, and influence zones, please refer to Chapter 2 of this report.

1.5.3 Compliance with Federal Agency Visual Management Objectives

As described in Section 1.4, both the BLM and USFS assign visual management objectives through the land use planning process to guide planning and project-level decisions. These objectives set the context in which applicants must address visual resources through the NEPA process, including the level of applicable mitigation in terms of potentially affected federal lands. As identified through the scoping process and required by the WWEC Programmatic EIS, each BLM field office and each national forest are required to have designated visual management objectives as well as an up-to-date inventory data. In addition to this requirement, compliance with these objectives and conformance with applicable RMPs and LRMPs was identified as an issue by both the BLM and USFS.

1.6 Environmental Setting

The Project is located in the Basin and Range, Wyoming Basin, Middle Rocky Mountains, and Colorado Plateau physiographic provinces (Fenneman 1931). The Colorado Plateau physiographic province is further divided into three sections: Uinta Basin, Canyon Lands, and High Plateaus of Utah. To provide geographic context for the Project, below are summaries of each physiographic province (or section as applicable) traversed by the Project and maps showing these areas (Maps 1-1a and 1-1b).

1.6.1 Wyoming Basin Physiographic Province



Photograph 1-1 Wyoming Basin physiographic province

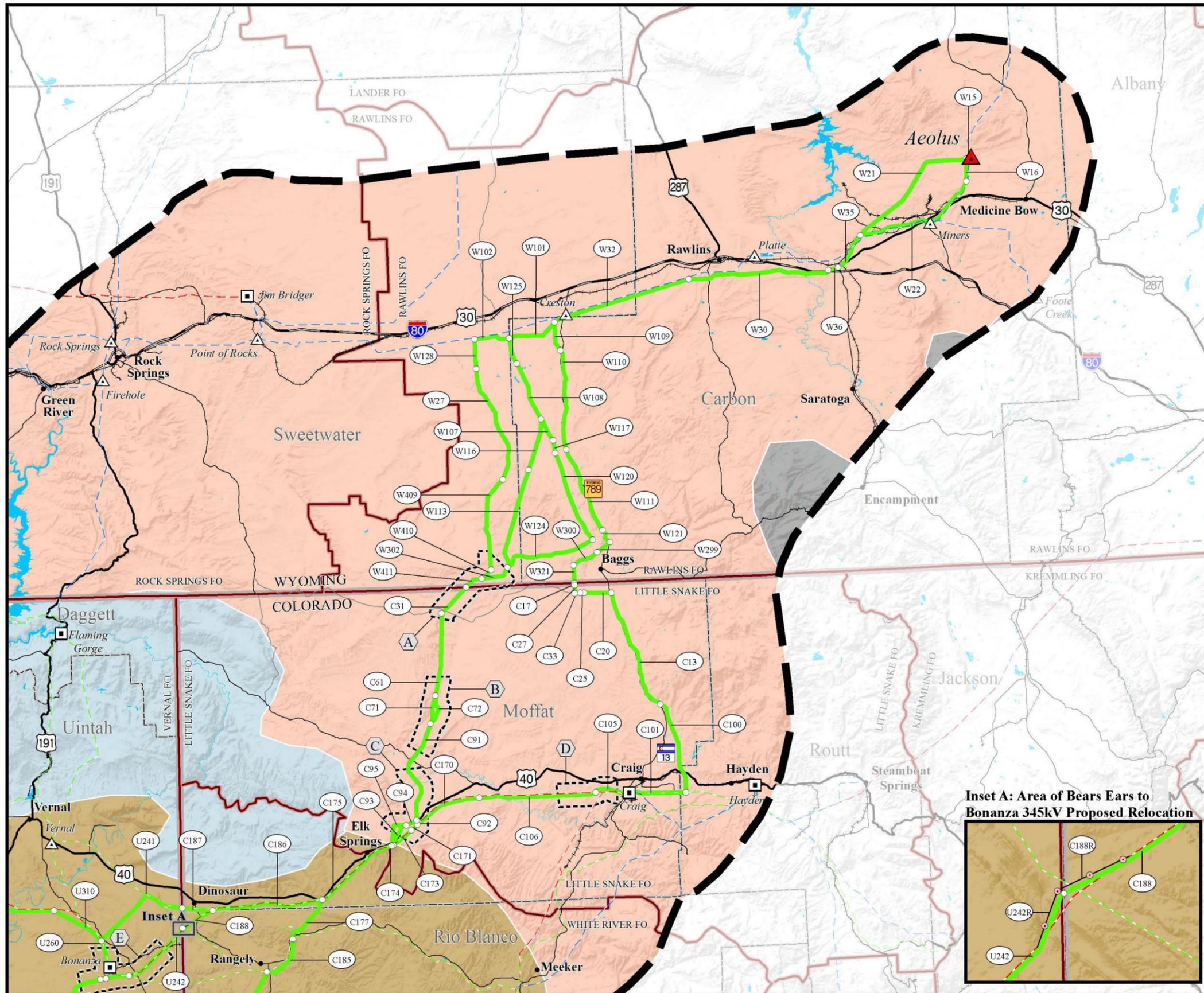
The Wyoming Basin province is located in south-central Wyoming and extends into northwest Colorado. The northeast portion of the Project study area, including all of Wyoming and approximately half of the study area in Colorado, are located in this province and are crossed by Alternatives WYCO-B, WYCO-C, WYCO-D, and WYCO-F (including route variations) (refer to Map 1-1a). This province is characterized by broad, arid intermontane basins interrupted by hills and low mountains. Topography is gently sloped in the basins, but becomes more dramatic and steep near local

uplifts and surrounding mountains. Escarpments, found on surrounding hills and low mountains in the province, expose geologic layers, some of which are brightly colored. Hogback ridges and cuestas (long ridges with a steep escarpment on one side and gentle slope on the other) are additional distinctive landscape features found in the province.

In this arid, windswept landscape, basins and hills are dominated by grassland and shrubland species. Higher elevation hills include pinyon-juniper; in protected drainages at the highest elevations, vegetation includes isolated aspen and fir forests.

Though water is largely absent from the province, water is found in reservoirs, intermittent streams fed by snowmelt and summer storms, saline lakes and ponds that feature mudflats during wet years and salt pans in droughts, and several large rivers (the North Platte, Yampa, and White) that occupy broad to narrow valleys.

Agricultural activities are concentrated along river corridors, and grazing extends into the surrounding hills. Mining and oil and gas development are extensive cultural modifications in these landscapes. The communities of Hanna, Rawlins, Wamsutter, and Baggs, Wyoming, and Craig and Maybell, Colorado, are located in this physiographic province.



Map 1-1a
**Physiographic Provinces
Northern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Physiographic Provinces¹

Basin and Range	Middle Rocky Mountains
Great Basin Section	Southern Rocky Mountains
Colorado Plateau	Wyoming Basin
Canyon Lands Section	
High Plateaus of Utah Section	
Uinta Basin Section	

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Link Node
Link Number	Series Compensation Station Siting Area

General Reference

City or Town	Interstate Highway
Substation	U.S. Highway
Power Plant	State Highway
500kV Transmission Line	Other Road
345kV Transmission Line	Lake or Reservoir
230kV Transmission Line	State Boundary
138kV Transmission Line	County Boundary
Railroad	

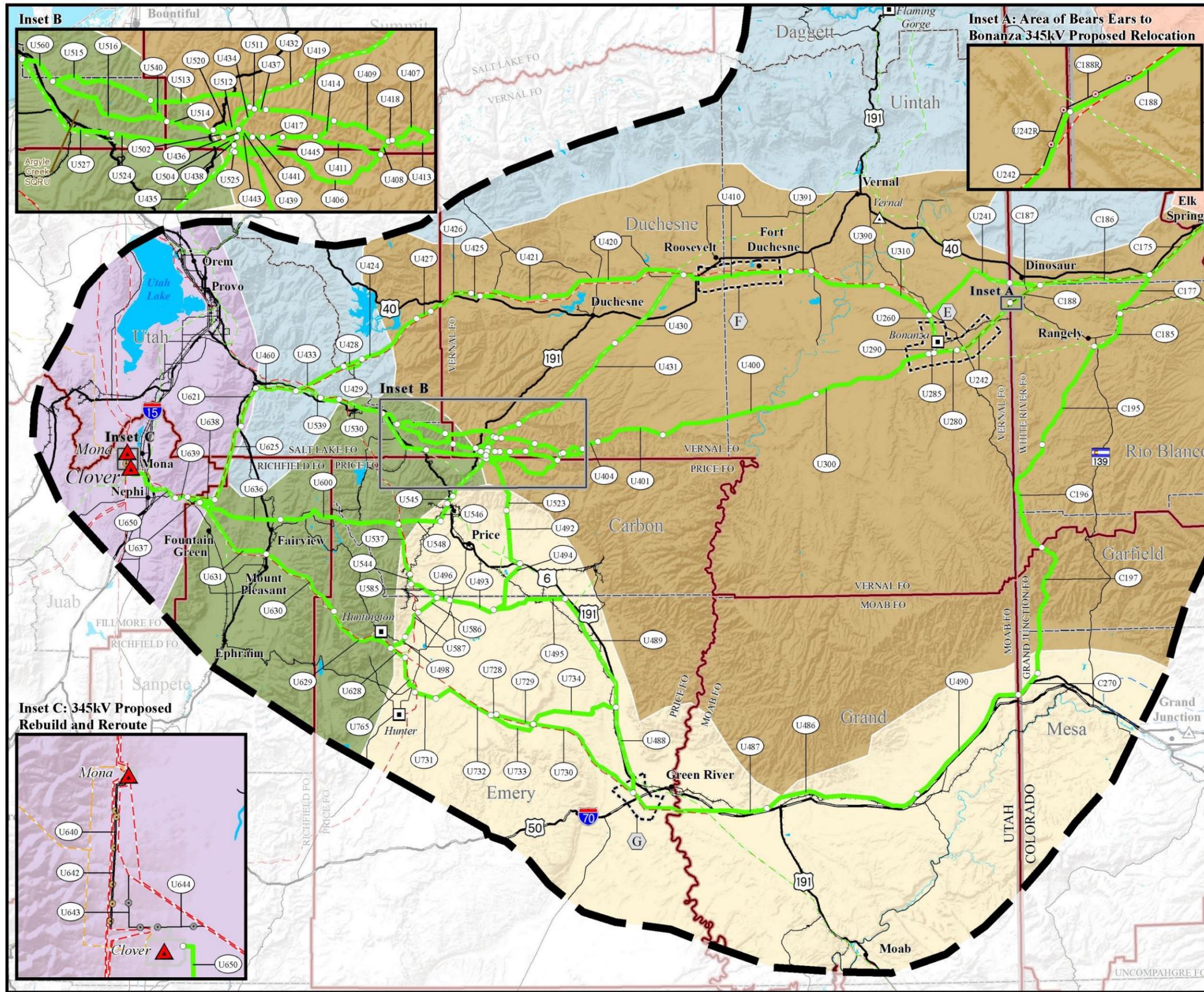
SOURCES:
 U.S. Physiographic Regions, USGS 2010;
 Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
 City or Town, ESRI 2013;
 Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
 Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
 State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
¹U.S. Physiographic Regions shown only within the Project area boundary.
²Class A SQRUs potentially crossed by the Project are labeled for reference.
 • The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
 • FO is Field Office (BLM)
 • Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
 FINAL EIS: September 2015

Miles

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Map 1-1b
**Physiographic Provinces
Southern Area**

ENERGY GATEWAY SOUTH
TRANSMISSION PROJECT

Physiographic Provinces¹

Basin and Range	Middle Rocky Mountains
Great Basin Section	Southern Rocky Mountains
Colorado Plateau	Wyoming Basin
Canyon Lands Section	
High Plateaus of Utah Section	
Uinta Basin Section	

Project Features

Project Area Boundary	345kV Proposed Rebuild (Segment 4a and 4b - Inset B)
Substation (Project Terminal)	345kV Proposed Reroute (Segment 4c - Inset B)
Alternative Route	Link Number
Link Node	Series Compensation Station Siting Area

General Reference

City or Town	Interstate Highway
Substation	U.S. Highway
Power Plant	State Highway
500kV Transmission Line	Other Road
345kV Transmission Line	Lake or Reservoir
230kV Transmission Line	State Boundary
138kV Transmission Line	County Boundary
Railroad	

SOURCES:
 U.S. Physiographic Regions, USGS 2010;
 Series Compensation Station Siting Areas, Rocky Mountain Power 2015;
 City or Town, ESRI 2013;
 Transmission Lines and Substations as digitized by EPG, POWERmap Platts 2009;
 Highways, Roads, and Railroads, ESRI 2013; Water Features, ESRI 2008, USGS 2010;
 State and County Boundaries, ESRI 2013; BLM Field Office Boundary, BLM 2008

NOTES:
¹ U.S. Physiographic Regions shown only within the Project area boundary.
² Class A SQRUs potentially crossed by the Project are labeled for reference.
 • The alternative routes and series compensation station siting areas shown on this map are draft and may be revised and/or refined throughout the development of the Project.
 • FO is Field Office (BLM)
 • Substation symbols do not necessarily represent precise locations.

Alternative routes last revised: September 23, 2014
 FINAL EIS: September 2015

0 5 10 20 30
Miles

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1.6.2 Colorado Plateau Physiographic Province

1.6.2.1 Uinta Basin Physiographic Section



Photograph 1-2 Uinta Basin physiographic section

The Uinta Basin section of the Colorado Plateau province is located in the northeastern Utah and northwestern Colorado portions of the Project study area. Due to the location of this physiographic section in relation to the Project study area, every alternative route would cross this section with the WYCO route groupings (refer to Map 1-1a) located in the far northeast corner of the section, while a major portion of the COUT BAX and COUT route groupings (refer to Map 1-1b) are located in this physiographic section.

This section is largely characterized by plateaus and broad basins. The plateaus

are deeply dissected and display numerous sedimentary layers, sharp ravines, and sparsely vegetated escarpments and cliffs and are best represented by the Book Cliffs, Tavaputs Plateau, and Roan Cliffs.

On the edge of the Uinta Basin, the plateaus that surround the basin are vegetated with juniper and sagebrush. Irrigated agricultural fields and pastures are located adjacent to the major rivers that flow through the province (the Green, White, and Duchesne). Outside of these irrigated fields and pastures, sagebrush and grasses are the dominant vegetation communities in the Uinta Basin. Badlands are found in the vicinity of the Bonanza Power Plant, near the White River and display highly eroded, unique formations that are sparsely vegetated.

A large portion of the Uinta Basin has been developed with oil and gas wells that have modified the existing landscape character. As stated above, irrigated agricultural fields are located along the major rivers and, as such, have introduced intense colors in a landscape dominated by dull, subtle colors. The major communities of Rangely, Colorado, and Vernal, Roosevelt, and Duchesne, Utah, are located in this physiographic section.

1.6.2.2 Canyon Lands Physiographic Section



Photograph 1-3 Canyon Lands physiographic section

The Canyon Lands section of the Colorado Plateau province is located in the southern portion of the Project study area in Utah and Colorado. Specifically, Alternatives COUT BAX-B, COUT BAX-C, COUT BAX-E, COUT-H, and COUT-I (refer to Map 1-1b) would traverse this physiographic section. This section is largely defined by the tributary rivers and streams of the Colorado River that have created numerous formations of visual interest, including plateaus, mesas, buttes, and canyons. The northern portion of the province, located near Interstate 70 (I-70), is characterized by flat to gently rolling plateaus (or flats)

that are sparsely vegetated; these flats give way to red rock canyons and plateaus south of the Project study area. North of I-70, particularly in the San Rafael Swell, the landscape is characterized by canyons and escarpments that display sedimentary depositions of various colors. Farther north, the landscape is distinguished by dissected hills sparsely vegetated with grasses and shrubs.

Development in proximity to the Project alternative routes is primarily located adjacent to I-70, U.S. Highway 6, and Utah State Route 10. As described for the Uinta Basin, irrigated agricultural fields are located along major river corridors that have introduced intense green colors into a landscape characterized by muted earth colors. The Utah communities of Helper, Price, Wellington, Huntington, Castle Dale, and Green River are located in proximity to Project alternative routes.

1.6.2.3 High Plateaus of Utah Physiographic Section



Photograph 1-4 High Plateaus of Utah physiographic section

The High Plateaus of Utah section of the Colorado Plateau province is located in central Utah. In context with the Project, this physiographic section would be crossed by Alternatives COUT BAX-B, COUT BAX-C, COUT-BAX-E, COUT-A, COUT-B, COUT-C, COUT-H, and COUT-I (including route variations) (refer to Map 1-1b). This section is characterized by several plateaus (e.g., Wasatch Plateau) separated by prominent north-south valleys, including the Sevier and San Pitch river valleys. Several of the plateaus are capped by lava flow that has inhibited erosion, while others have been

dissected into rounded hills.

At the lowest elevations of this physiographic section, irrigated agricultural fields and pastures give way to sagebrush and grass communities. On higher elevation slopes, vegetation communities transition from

junipers/oak woodlands to aspen-fir and alpine. Water is found in perennial and intermittent mountain streams, reservoirs, and rivers in this landscape.

Development is concentrated in valleys that have been largely converted to irrigated farm lands. In some areas in the plateau lands, underground coal mines that have been operating for more than 100 years have modified the local landscape character. The communities of Mount Pleasant, Fairview, and Fountain Green, Utah, are located in proximity to Project alternative routes.

1.6.3 Middle Rocky Mountain Physiographic Province



Photograph 1-5 Middle Rocky Mountain physiographic province

The Middle Rocky Mountain province is located primarily in western Wyoming, with portions extending into Montana, Idaho, Utah, and Colorado. Only a small portion of the Project study area is located in this physiographic province, between Strawberry Reservoir and Indianola (approximately 12 miles north of Fairview), and would be traversed by Alternatives COUT-A, COUT-B, and COUT-C (including route variations) (refer to Map 1-1b). The Wasatch Range is located at the edge of the Middle Rocky Mountains and the Basin and Range provinces, and as such, shares characteristics with both provinces. The

most distinctive element of the Wasatch Range is the abrupt, wall-like western front with steep, v-shaped canyons. In contrast, the eastern edge of the Wasatch Mountains smoothly transition into the adjacent landscapes.

Vegetation in this province is largely dependent on elevation with grasses and sagebrush at the lowest elevations and alpine species occurring on the high peaks. The mosaic of these vegetation communities provides for a high level of landscape variety. Water is also an important feature of the Middle Rocky Mountains with the province including several major rivers and thousands of mountain lakes.

Cultural modifications are scattered and limited due to the steep terrain in the province. Groups of residences have been built along the highways and in valleys where the steep slopes are not a limiting factor to their construction. There are no major communities located in proximity to the Project alternative routes in this province, but several large cities are located directly adjacent to the province.

1.6.4 Basin and Range Physiographic Province



Photograph 1-6 Basin and Range physiographic province

The Basin and Range province stretches from the western slopes of the Wasatch Range in Utah to the eastern flank of the Sierra Nevada Mountains in California. This physiographic province is located along the far western portion of the Project study area and would be traversed by Alternatives COUT BAX-B, COUT BAX-C, COUT-BAX-E, COUT-A, COUT-B, COUT-C, COUT-H, and COUT-I (including route variations) (refer to Map 1-1b). It is characterized by isolated, parallel, north-south oriented mountain ranges, typically 50 to 75 miles long, that are surrounded by nearly level, typically undrained

basins. Gently sloping alluvial fans often occur at the interface between the mountains and basins, which are commonly braided by intermittently flowing shallow drainages.

The landscapes in this province are heavily influenced by the arid climatic patterns typical of the region, resulting in distinct and predictable vegetation patterns. Vegetation transitions from primarily low-growing sagebrush and grasses associated with the basins and alluvial fans to dry conifer forests on the highest peaks. The occurrence of water in this landscape is limited to small reservoirs and intermittent streams that flood during summer thunderstorms and the spring thaw.

Development is located primarily in the basins as the steep mountains restrict most commercial and residential land uses. The majority of the basins located in the Project study area have been developed and modified to accommodate agricultural uses, which have introduced intense seasonal color into previously subtle, stark, and common landscape scenery. Residential and commercial development located in the Project area in the Basin and Range province includes the communities of Nephi and Mona, Utah.

1.7 Visual Assessment Approach

To respond to the issues identified for analysis, the following visual assessment approach was developed in context with the Project's environmental setting and regulatory framework (Sections 1.6 and 1.4). As described previously, the visual assessment will focus on three components: (1) scenery, (2) views, and (3) federal agency visual management objectives and (land and) resource management plans. Within each of these analysis components, a detailed inventory and impact assessment was completed with the results and underlying methodologies described in Chapters 2 and Chapter 3 of this document, respectively, and presented graphically in Figure 1-1.

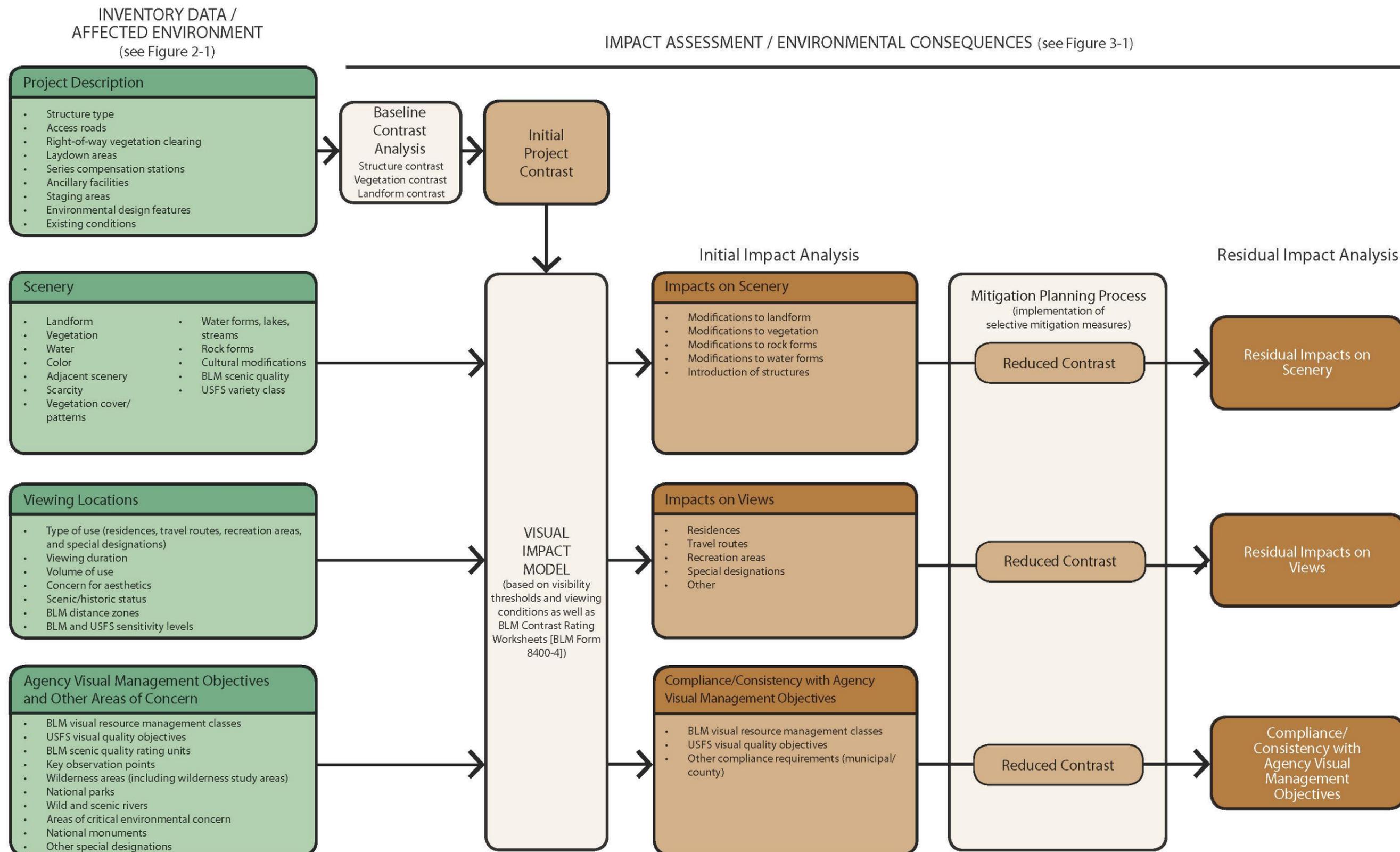


Figure 1-1 Visual Resources Study Flowchart

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1.7.1 Scenery

To provide a comprehensive inventory to assess effects resulting from the Project on the inherent character of landscapes, both the BLM SQRUs and project-level scenery rating units are included and described in the affected environment (inventory). Impacts on scenery analyzed as part of this visual assessment are focused primarily on the project-level scenery rating units to provide a consistent inventory across all land jurisdictions, which allows each alternative route to be compared at an equal level. Effects on BLM SQRU were also studied through this visual assessment. In addition, as part of the cumulative effects analysis, impacts on scenery were based on the BLM SQRU to assess the incremental modification of these larger, planning-scale scenery units resulting from past and present and reasonably foreseeable future actions (RFFA).

1.7.2 Views

The affected environment, associated with potential views of the Project, includes the BLM SLRUs, BLM distance zones, and the project-level viewing locations (and influence zones). By including both the BLM VRI, to state BLM inventory values and project-level inventory commensurate with the scale of a transmission line project across all jurisdictions, this inventory will provide a comprehensive background for project analysis. The impact assessment and environmental consequences section primarily focused on the project-level viewing locations to establish a common inventory to assess effects on views resulting from the Project equally across all Project alternative routes. In addition to this effects analysis, visual simulations were prepared from a variety of viewpoints throughout the Project study area to illustrate potential effects as well as confirm compliance, or noncompliance, with federal agency visual management objectives described further below. To assess cumulative effects resulting from the modification of viewsheds resulting from past and present actions and RFFAs, visual simulations were prepared to depict the incremental modification of views, in particular where multiple major transmission line projects are proposed.

1.7.3 Federal Agency Visual Management Objectives and (Land and) Resource Management Plans

1.7.3.1 Bureau of Land Management

In the affected environment portion of the visual assessment, BLM VRM Classes traversed by the Project will be described for each alternative route. To determine compliance with BLM VRM Classes, a contrast rating analysis was completed from KOPs on or viewing BLM-administered lands in a manner consistent with BLM Manual 8431. Through review of the results of the contrast rating, guidance found in RMPs, and coordination with the applicable BLM field office, areas determined to be out of compliance with the established VRM Class objective would be modified through an amendment to the applicable RMP.

1.7.3.2 U.S. Forest Service

Similar to the inventory of BLM VRM Classes; the USFS VQOs traversed by the Project will be described for each alternative route. Consistency (compliance) with VQOs is based on comparing the level of visual contrast produced by the Project with the surrounding natural landscape. Since no methodology for assessing consistency with VQOs is described in *U.S. Department of Agriculture Handbook Number 462*, KOPs were also identified on USFS-administered lands in a manner consistent with determining compliance with BLM VRM Class objectives. It is important to note that the contrast rating assessed at each KOP was part of the assessment of consistency with VQOs but was not the only component in this analysis. For more information on how consistency with VQOs was determined, please refer to Chapter 3 of this report. Conformance with forest LRMPs are based on a review of applicable forest-wide and management area standards that a project must meet. In addition, forest-wide and

management area guidelines are identified in each management plan that a project must strive to meet therefore providing additional rational for project mitigation.