3.3 CULTURAL RESOURCES

This section of the EIS discusses cultural resources in the Project area and the impact that the Proposed Route and its alternatives would have on those resources. Cultural resources encompass "historic properties," non-historic properties, and sites of "traditional religious and cultural importance" (36 CFR Part 800.2). Historic properties are defined at 36 CFR Part 800.16(l)(1) as "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." For non-historic properties, BLM Manual 8100.03.F (BLM 2004a) states that "[c]ultural resources need not be determined eligible for the National Register of Historic Places (as in the National Historic Preservation Act) to receive consideration under the National Environmental Policy Act." Cultural resources that are of traditional religious and cultural importance, or TCPs, are places that "are valued by the human community" and play an important role in that community's "historically rooted beliefs, customs, and practices" (Parker and King 1992). Walker (2009) indicates that TCPs should be defined so as not to limit the identification of tribal "traditions, beliefs, practices, lifeways, arts, crafts, and social institutions." TCPs could also embrace a "rural community whose organization, buildings, and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents" (Parker and King 1992). This section also presents a suite of mitigation measures to be considered where impacts are unavoidable. As described in this document, mitigation under NEPA does not limit or prescribe the outcome of consultation required under Section 106 of the NHPA and implementing regulations found at 36 CFR Part 800.

3.3.1 Introduction

3.3.1.1 Purpose of the NEPA Analysis

The purpose of this section is to present the impacts of the Proposed Route and to compare and contrast the impacts of a range of reasonable alternatives on cultural resources. It also serves as part of a disclosure document to the public and to the decision makers, which discusses the impacts to all resources, including but not limited to cultural resources. This section describes the resources and the extent to which each Route Alternative avoids or minimizes impacts to cultural resources. Where such avoidance or minimization is insufficient, mitigation measures that could be employed to mitigate the impact are discussed.

3.3.1.2 Organization of the NEPA Analysis

This section of the Draft EIS presents the affected environment, the methods of analysis, and the direct and indirect impacts of the Proposed Action. For each of these categories, in each state, prehistoric resources are discussed first, followed by an overview of the protohistoric period and historic resources. "Prehistoric (pre-contact)" refers to artifacts and features created and used by the aboriginal inhabitants of the region prior to "contact with Europeans and resulting in written records" (NPS 2000); "historic (post-contact)" includes artifacts and features" dating to periods since significant contact between Native Americans and Europeans" (NPS 2000). The protohistoric period refers to a brief period, at the time of contact with Europeans, when

cultural materials and ideas were exchanged between cultural groups, but prior to written records. TCPs are discussed under the Consultation heading in Section 3.3.2.3. A TCP is a "property, a place, that is eligible for inclusion on the National Register of Historic Places because of its association with cultural practices and beliefs that are (1) rooted in the history of a community and (2) are important to maintaining the continuing cultural identity of the community" (Parker and King 1992).

Prehistoric resources are divided into site categories that reflect the purpose and intensity of aboriginal occupation at specific locations: lithic (chipped stone) scatters, landscapes, and quarries; open and sheltered camps, with or without evidence of specialized activities; rock art (petroglyphs and pictographs); and mortuary sites that might include human burials. The protohistoric overviews provide a general description of the types of resources known in the region and reflect changes observed in cultural resource types and assemblages that occur between pre- and post-European contact. Historic resources are segregated into broad socioeconomic themes, such as transportation routes, including trails (further subdivided into trails that have been congressionally designated as NHT and other trails and routes), railroads, roads, and bridges; settlements including homesteads, ranches, and camps; irrigation works, including canals and ditches; and electric transmission lines. Other sites that are associated with trails, such as important emigrant graves, are treated with those trails.

Impacts that are common to all Route Alternatives are presented first, followed by a comparative analysis of impacts by alternative. Finally, a comparative analysis of the proposed design, ROW, and Structure Variation is presented. Cumulative effects are discussed in Chapter 4.

3.3.1.3 Scope of the NEPA Analysis

This 1,103-mile-long Project would cross hundreds of private land parcels for which access is not currently available. The BLM and the SHPOs in Idaho, Nevada, and Wyoming have determined that a PA will be prepared to govern compliance with the requirements of Section 106 of the NHPA for this Project, using the phased approach for identification, evaluation, and mitigation of historic properties that is described at 36 CFR Part 800.4(b)(2).

The BLM sent out a Work Statement for the documentation and evaluation of cultural resources, which specified that the EIS would be augmented by a literature review and a sample survey on public lands across all alternatives. This procedure allows for the recognition and disclosure of impacts on known cultural resources, as well as a comparison of alternatives, based on a method that endeavors to assess those alternatives with a uniform and consistent approach. The final determination of impacts and resolution of adverse effects, through the Section 106 consultation process, will not be complete until surveys of all lands crossed by the Project have been completed. Only then can the BLM and other federal agencies complete their obligations under Section 106 and the PA.

Therefore, this section of the EIS presents results of a literature review for Idaho, Nevada, and Wyoming. Sample surveys were conducted for most of the Idaho and Wyoming alternatives, including the newly identified Alternatives 7J, 8E, 9F, 9G and 9H

in Idaho. Adverse weather conditions precluded completion of the sample surveys for the Nevada portion of Alternative 7I/7J, survey of which is planned for the 2011 field season. At the request of the BLM Kemmerer FO, no sample surveys of Segment 4 alternatives were conducted. Instead, known site data were used in place of sample surveys to assess site likelihood along the alternatives (see Section 3.3.2.4).

The BLM's third-party consultants provide their professional opinions regarding the likely NRHP eligibility of newly identified prehistoric and historic sites, and provide professional opinions regarding the likely suite of mitigation measures that may be applied and agreed upon through the Section 106 process. This should NOT be mistaken for an NRHP eligibility determination under the Section 106 consultation process. The impacts disclosed in this document have neither been carried through the Section 106 process nor have the proposed mitigation measures been part of a resolution of potentially adverse impacts among interested parties and the SHPOs. The Section 106 process would be concluded when the BLM has determined the Preferred Alternative, a 100 percent survey of that Alternative and associated facilities has been completed, and the appropriate agencies make determinations of NRHP eligibility and impacts. The PA stipulations would guide this public involvement process.

3.3.1.4 Note on Vocabulary

NEPA and NHPA use terms with specific meanings given by the regulations, yet the regulatory meaning from each of these acts may be slightly different for the same term. Table 3.3-1 compares NEPA terms, with similar terms used under the NHPA. The NEPA terms are used in this EIS, recognizing their use would not be appropriate in the NHPA realm.

Table 3.3-1. NEPA and NHPA Terminology (Note: Terms are not interchangeable)

NEPA	NHPA
Federal Action – any action taken directly by a federal agency.	Federal Undertaking – a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency
Analysis Area – geographical area in which impacts are likely to occur.	Area of Potential Effects (APE) – the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.
Impacts – the result of actions affecting the quality of the environment; divided into *direct*, *indirect*, and *cumulative impact.* Impacts can be *adverse* or *beneficial.*	Effects – alteration to the characteristics of a historic property qualifying it for inclusion in or eligible for the National Register of Historic Places. Effects can be *adverse* or *not adverse*.
Adverse Impact – in the professional opinion of the EIS preparers, it is likely that the consequence of the action is adverse.	Adverse Effect – through the NHPA consultation process a determination has been made that an adverse effect would occur (effects that alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association). Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Table 3.3-1. NEPA and NHPA Terminology (Note: Terms are not interchangeable) (continued)

NEPA	NHPA
Eligible – includes resources that are Listed, determined or recommended eligible, and unevaluated. In the professional opinion of the EIS preparers, unevaluated resources may be eligible for inclusion in the NRHP.	Eligible – through the NHPA consultation process a determination has been made that a prehistoric or historic district, site, building, structure, or object would be eligible for inclusion in the NRHP.
Public Involvement – the effort required to engage stakeholders and general public.	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 views of the public are also essential to informed federal decision-making in the Section 106 process.
Council on Environmental Quality (CEQ) – oversees implementation of the NEPA process.	Advisory Council on Historic Preservation (ACHP) – an independent agency mandated to advise the President, Congress, and federal agencies in matters relating to historic preservation, and to review how the agencies' decision affects historic properties.
Mitigation – any action that avoids, minimizes, rectifies, reduces, or compensates for an impact on the environment.	Resolution of Adverse Effects – alternatives or modifications to an undertaking that avoid, minimize, or mitigate adverse effects on historic properties.
Significance – describes the severity (long-term alteration of a resource) and context (relationship of project impacts compared to the project area spatial and temporal scale) of project impacts.	Historical Significance – those districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that are (a) associated with important historic events; (b) associated with important historic persons; (c) embody distinctive architectural characteristics; or (d) have yielded, or are likely to yield, information important in prehistory or history (36 CFR Part 63).
Cultural Resources – encompass archaeological, traditional, and built environment resources, including but not necessarily limited to buildings, structures, objects, districts, and sites.	Historic Properties – any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP.

3.3.2 Affected Environment

3.3.2.1 Definition of Analysis Area

For the purposes of this EIS, the Analysis Area has been defined as the following:

- Literature Review: The Analysis Area includes those cadastral sections crossed by a 1-mile buffer on Proposed Route and Route Alternatives for a file search in each state, and the ecoregions crossed by the Project for published and unpublished literature on the area.
- Class III Pedestrian Survey: The Analysis Area includes a 500-foot-wide buffer centered on the centerlines of the Proposed and Alternative Routes. It also includes a 200-foot-wide buffer centered on the centerline of proposed new or

rebuilt access roads and a 200-foot buffer encompassing ancillary facilities, such as substations, regeneration stations, fly yards, and staging areas.

- Cultural Resources Visual Impact Study: The Analysis Area includes the viewable area from KOPs (see Section 3.2 of this EIS) on or along important cultural resources for which, in consultation with the BLM and the Forest Service, visual setting is considered important. That portion of the viewable area crossed by the Proposed or Alternative Routes is included for analysis. The BLM has recommended that cultural resources, for which setting is an important factor for NRHP eligibility, located within 5 miles of Proposed or Alternative Routes, should be considered to be within the Project's viewshed and would be evaluated for visual impacts.

These buffered areas were selected to capture all potential direct and indirect impacts on cultural resources associated with construction and operation of the Project. These areas were also established to aid route siting efforts, accommodate shifts in the Proposed Route, and to cover areas where access roads and ancillary facilities may be necessary. A description of the regional context in which the cultural resources within the Analysis Area occur is provided in Section 3.3.2.5.

3.3.2.2 Issues to be Addressed

Project-specific issues have been identified through the public scoping process, which began in 2008 and continued through 2009 (Tetra Tech 2009a). The issues raised by the public in regard to cultural resources can be summarized as follows:

- What values do the area's Native American communities ascribe to places of historic and traditional significance?
- Would all impacted Native American Tribes be consulted?
- What would be the impact on Native American Tribes and would their treaty rights and privileges be addressed?
- Would a complete inventory of potentially impacted cultural sites be carried out?
- Would the design of structures such as towers and substations minimize their visual impact to the setting of historic properties?
- What are the impacts on eligible prehistoric resources?
- What are the impacts on eligible historic resources?
- What would be the visual and recreational impacts on historic trails?
- Would TCPs be impacted?
- Would the setting of a property for which setting is an important aspect of integrity be affected?

These questions can be distilled down to the following general issues.

- Native American Consultation. The BLM, as an agency of the federal government, is obliged under the NHPA (36 CFR Part 800.2c) and other laws and mandates to consult with every affected Indian Tribe. Such consultation

under NHPA does not preclude, or absolve, the government from compliance with treaties or other statutes and regulations that address either tribal privileges or TCPs and other cultural resources, such as NAGPRA, AIRFA, ARPA, and agency-specific legislation. Impacted Tribes have expressed their concerns through formal tribal consultations and the public involvement process, and those concerns are identified in Table 3.3-2.

- Inventory of Cultural Sites. Once the BLM has selected a Preferred Route, a Class III (intensive pedestrian) inventory of that route will be completed, so that cultural resources that may be directly or indirectly impacted can be identified. This will occur after comments on the Draft EIS have been received, before issuance of the Final EIS.
- Determinations of Eligibility. All cultural resources identified during the Class III inventory will be evaluated for NRHP eligibility. Through the Section 106 process, the BLM, in consultation with the SHPO in each state, will determine NRHP eligibility of all cultural resources within the APE and determine Project effects (direct and indirect) upon those resources. Where those effects are determined to be adverse, appropriate mitigation measures would be implemented to avoid, minimize, or treat those effects. The nature and extent of such mitigation would be guided by a PA, executed among the BLM; the Idaho, Nevada, and Wyoming SHPOs; the Proponents; and (possibly) the ACHP. Specific Indian Tribes may be included as Consulting Parties to the PA.
- Visual Impacts on Historic Trails. As directed by the National Trails Systems Act of 1968 (P.L. 90-543), as amended 1978, Congress designates NHTs. The Project would impact four NHTs (California, Mormon-Pioneer, Oregon, and Pony Express), as well as several significant non-NHTs. Extensive analyses of indirect (visual) impacts on the NHTs and non-NHTs in the Analysis Area have been completed and form a key portion of the EIS. A summary of these impacts is provided in Section 3.3.3.3, Table 3.3-6.

3.3.2.3 Regulatory Framework

Relationship to NHPA and the Section 106 Process

In addition to the disclosure requirements under NEPA, Section 106 of the NHPA requires that the federal agency permitting the undertaking must "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." Effect is defined at 36 CFR Part 800.16(i) as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." With execution of the PA, the Section 106 process will be completed before the responsible official signs the ROD. The appropriate measures, timing of the processes, and the responsible parties will be developed in the PA.

The Section 106 process stipulates that the federal agency (in this case, the BLM) establish the undertaking (permitting of the Gateway West Transmission Line), identify other consulting parties, identify historic properties, and assess adverse effects upon those properties. The BLM, in consultation with the Idaho, Nevada, and Wyoming

SHPOs and other consulting parties, develops appropriate measures to resolve adverse effects to those cultural resources, including determination of final mitigation measures. The NHPA process, when completed, will provide the final mitigation measures applicable to the route and associated facilities, such as access roads and staging areas.

Other Cultural Resources Laws and Regulations

In addition to, and parallel with, the NHPA and 36 CFR Part 800 is a suite of laws and regulations that protect cultural resources, especially those of concern to Native Americans. Some of the most recent legislation is listed below.

- AIRFA, enacted in 1978, requires federal agencies to protect and preserve the customs, ceremonies, and traditions of Native American religions.
- ARPA, enacted in 1979, provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement, or the attempt to do so, to any archaeological resource more than 100 years old on public lands or Indian lands (not restricted to NRHP-eligible resources). It prohibits the sale, purchase, exchange, transportation, receipt, or offering of any archaeological resource obtained from public lands or Indian lands in violation of any provision, rule, regulation, ordinance, or permit under the act or under any federal, state or local law (BLM 2004a). It establishes permit requirements and civil and criminal penalties and increases the penalty for stealing or vandalizing to $100,000 and up to 5 years in prison.
- NAGPRA, enacted in 1990, establishes additional requirements for ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also establishes requirements for the treatment of Native American human remains and cultural objects found on Federal land. This act further provides for the protection, inventory, and repatriation of Native American human remains, objects of cultural patrimony, sacred objects, unassociated funerary objects, and associated funerary objects.
- EO 13007, signed by President Clinton in 1996, directs federal land-managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.
- EO 13175, signed by President Clinton in 2000, reiterated the requirement for regular and meaningful consultation and collaboration between the federal government and tribal officials.

Consultation

TCPs are frequently associated with places of significance to Native Americans, but they may also be associated with other cultural groups. These groups, such as the Japanese-American groups and constituents of the Minidoka National Historic Site, will be identified and consulted through the NEPA process.

The BLM is in consultation with Native American Tribes on issues relating to Tribal concerns including traditional cultural properties and values. The BLM, as a governmental agency, will maintain special government-to-government relationships with federally-recognized Indian Tribes. Native American treaty rights such as fishing, hunting large and small game, and gathering natural resources for subsistence, medicinal, and cultural purposes are not anticipated to be impacted by the Project. Consultations with traditional communities/groups undertaken by the BLM for other projects have identified types of properties that are generally considered Native American-sensitive sites that could be TCPs. These sensitive sites include, but are not limited to, medicine wheels, tipi rings, low cairns and other rock alignments, burial places, rock art, fire pits, and plant-gathering areas. Potential TCPs identified by this Project will be assessed by the BLM FOs in consultation with the Tribes. Based on the traditional Native American territories, as shown on the "Indian Land Areas Judicially Established 1978" map (NPS 1978), the following Tribes have been contacted, and their comments sought about the Project:

- Northern Arapaho
- Northern Cheyenne
- Eastern Shoshone
- Shoshone-Bannock
- Northern Ute
- Shoshone-Paiute
- Northwest Shoshone Band
- Southern Arapaho
- Southern Cheyenne
- Oglala Sioux

Ethnographic studies requested by the Shoshone-Paiute, Eastern Shoshone, and Northern Ute Tribes are in progress, and the results of these studies will be used to refine the discussions between the BLM and the Tribes concerning TCPs. Thus far, these studies have not formally identified TCPs or sacred landscapes in the Analysis Area. Previous ethnographic studies by Hultkrantz (1987), Miller (1983), Walker (1991), Steward (1942), Jorgensen (1972), Janetski (1983), Salzmann (1983), Dorsey and Kroeber (1903), and Mooney (1907) describe several types of sacred places including mountains, foothills, buttes, springs, lakes, rivers, caves, burial places, petroglyph and pictograph sites, battle sites, rock alignments, and stone piles, as well as most sites identified by archaeologists as being sites of previous occupation by Shoshone-Paiute and Shoshone-Bannock peoples (Walker 2009).

Of special note are the treaty rights granted to the Shoshone-Bannock Tribes in the 1868 Fort Bridger Treaty and the rights the Shoshone-Bannock may exercise on lands within the Fort Hall Reservation that were ceded to the United States government (Fort Bridger Treaty 1868; Pocatello Cession Agreement 1900). Relevant portions of the Fort

Bridger Treaty stipulate that: the Shoshone-Bannock Tribes have the right to hunt on unoccupied lands of the United States so long as there is game found on these lands; heads of households may select a tract of land up to 320 acres in size for farming; any person over 18 years of age not being a head of a household may select a tract of land up to 80 acres in size for farming (Fort Bridger Treaty 1868). The agreement concerning the cessation of lands within the Fort Hall Reservation provided that members of the Shoshone-Bannock Tribes residing on the reservation shall have rights to cut timber for their own use, pasture cattle, and hunt and fish from the streams from any of these lands as long as they remained in the public domain (Pocatello Cession Agreement 1900).

Previous projects have identified potential TCPs in the Rock Springs FO, but the boundaries of these TCPs and sacred landscapes have not yet been defined. Regarding consultation with Native American Tribes in the Rock Springs area, BLM Rock Springs FO archaeologists noted (Miller 2010):

> *In consultation with the affected Native American Tribes, the Rock Springs Field Office has commenced the study of a cultural landscape. The Tribes involved have communicated that the large numbers of traditional cultural properties in the environs surrounding White Mountain are reflective of the presence of a landscape which is of great cultural importance to the Tribes. This "landscape" incorporates more than just a broad surface of land. It also includes sites, atmospheric elements, plants, animals, sounds, and light. The Tribes maintain that they would prefer the BLM consider management of this cultural landscape as a single entity rather than segmenting the resource into a series of disjointed traditional cultural properties.*
>
> *Within this cultural landscape Native Americans practiced their ceremonies, interacted with natural/supernatural forces, and maintained their roles as part of the everlasting cycles. The landscape has seen extensive and dedicated use for vision quests, healing ceremonies, birth rituals, death rituals, and other ceremonies critical to the communal lifestyles of the modern Tribes and their ancestors.*

The affected Tribes, as the most qualified of experts in these matters, are participating in a study at this time to further define the components of the cultural landscape and its conformation. That study is ongoing. Of the 23 Tribes consulted for this Project, comments have been received to date from the following nine Tribes, as summarized in Table 3.3-2.

Table 3.3-2. Status of Native American Consultation

Name of Tribe	Date of Initial Contact	Follow-up Letters	Additional Follow-up			Summary of Issues Raised during Consultation
Shoshone-Bannock Tribes	April 9, 2008	September 15, 2008 December 8, 2008 August 11, 2009	**Date**	**To/By/From**	**Method**	BLM continued to send ROW routing updates. The Tribes have expressed concern over the transmission line alignment, which is not in the proposed WWE Corridor. They indicated they would like this Project to follow it or other existing corridors. The Idaho Falls District and Pocatello FOs continue to provide the Tribal council and staff information on the Project status as part of other meetings and consultations
			April 10, 2008	Presentation by Walt George (BLM) in Fort Hall, ID	In-person	
			December 2, 2008	To: Joe Kraayenbrink	Email	
			February 5, 2009	To: Yvette Trell and Travis Stone	In-person	
			March 18, 2009	Presentation by Walt George (BLM) in Fort Hall, ID	In-person	
Northern Arapaho Business Council	April 9, 2008	June 11, 2009 August 11, 2009	**Date**	**To/By/From**	**Method**	BLM continued to send ROW routing updates. The Tribe requested a meeting. Tribal Historic Preservation Officer (THPO) changed before a meeting could be arranged. New THPO asks for project updates, which have been sent to her as updates occur. Business council requested participation in the PA and to be included in site visits with the Elders when they occur.
			April 29, 2008	From: JoAnn White (THPO to May 2008))	E-mail	
			May 12, 2008	No response	Phone	
			July 29, 2009	From: Darlene Conrad (THPO)	E-mail	
			November 4, 2009	PA kickoff invitation	E-mail	
			April 1, 2010	To: Darlene Conrad (THPO)	E-mail	
			April 5, 2010	To: Darlene Conrad (THPO)	E-mail	
			August 16, 2010	To: Darlene Conrad (THPO)	E-mail	
			August 19, 2010	To: Darlene Conrad (THPO)	E-mail	
			August 30, 2010	To: Darlene Conrad (THPO)	E-mail	
			September 1, 2010	To: Darlene Conrad (THPO)	E-mail	
			January 27, 2011	To: Darlene Conrad	E-mail	E-mailed PA meeting invitation

Table 3.3-2. Status of Native American Consultation (continued)

Name of Tribe	Date of Initial Contact	Follow-up Letters	Additional Follow-up			Summary of Issues Raised during Consultation
Ute Tribe of the Uintah and Ouray Reservation	April 9, 2008	June 11, 2009 August 11, 2009	**Date**	**To/By/From**	**Method**	BLM continued to send ROW routing updates. The Tribe has expressed interest in the Project and informally requested ethnographic studies and a copy of the literature review. The Tribe has noted a cultural landscape between Pilot Butte, White Mountain Petroglyphs, Cedar Canyon Petroglyphs and Boars Tusk for the Teton Wind Project. Sent Statement of Work for the requested Ethnography (2/17/2010) – no response Sent Draft PA (2/19/2010) – no response
			May 15, 2008	No response	Phone	
			June 16, 2009	By: Penny Daniels, RSFO Archaeologist	In-person	
			November 4, 2009	PA kickoff invitation	E-mail	
			December 8, 2009	By: Penny Daniels, RSFO Archaeologist	In-person	
			December 9, 2009	To: Betsy Chapoose	Phone	
			December 15, 2009	From: Betsy Chapoose	Phone	
			February 17, 2010	To: Betsy Chapoose	Phone / E-mail	
			February 19, 2010	From: Betsy Chapoose	E-mail	
			August 30, 2010	To: Betsy Chapoose	Phone / E-mail	
			December 2, 2010	To: Betsy Chapoose	Phone	No response
			January 5, 2011	To: Betsy Chapoose	Phone	No response
			January 27, 2011	To: Betsy Chapoose and Curtis Cesspoch	E-mail	E-mailed PA meeting invitation
Northwest Shoshone Band	April 9, 2008	June 11, 2008 August 11, 2008	**Date**	**To/By/From**	**Method**	BLM continued to send ROW routing updates, but have not received comments/concerns.
			November 4, 2009	PA kickoff invitation	E-mail	
Eastern Shoshone Business Council	April 9, 2008	June 11, 2009 August 11, 2009	**Date**	**To/By/From**	**Method**	BLM continued to send ROW routing updates. The Tribe has expressed concern about the remains of "Deer Butte Man" and the related
			May 12, 2008	To: Ivan Posey	Phone	
			May 31, 2008	From: Reed Tizump (THPO)	E-mail	
			June 19, 2009	To: Ivan Posey	Phone	

Table 3.3-2. Status of Native American Consultation (continued)

Name of Tribe	Date of Initial Contact	Follow-up Letters	Additional Follow-up			Summary of Issues Raised during Consultation
Eastern Shoshone Business Council (Cont.)			August 31, 2009	To: Ivan Posey	E-mail	ethnographic studies. Business council requested PA participation, copy of the WY literature review and an ethnography.
			November 4, 2009	PA kickoff invitation	E-mail	
			November 9, 2009	To: Ivan Posey	Phone	
			December 18, 2009	By: Judge Richard Ferris	In-person	
			December 18, 2009	By: Terry Del Bene, RSFO Archaeologist	In-person	
			February 22, 2010	To: Judge Richard Ferris	E-mail	
			March 3, 2010	From: Judge Richard Ferris	Phone	
			August 30, 2010	To: Judge Richard Ferris	E-mail	
			January 12, 2011	To: Judge Richard Ferris	Phone/E-mail	PA participation
			January 27, 2011	To: Judge Richard Ferris	E-mail	
Northern Cheyenne Tribal Council	April 9, 2008	June 11, 2009 August 11, 2009	**Date**	**To/By/From**	**Method**	Have continued to send ROW routing updates. The Tribe has expressed interest in the Project.
			May 15, 2008	From: Eugene Littlecoyote	Phone	
			June 19, 2009	To: Conrad Fisher (THPO)	Phone / Fax	
			August 31, 2009	From: Clara Caufield	E-mail	
			November 4, 2009	PA kickoff invitation	E-mail	
			February 22, 2010	To: Linwood Tallbull (THPO)	Phone	
			August 30, 2010	To: Cultural Resources Staff	Phone	
			December 3, 2010	To: THPO office	Phone	No response
			January 27, 2011	To: Conrad Fisher	E-mail	
Shoshone-Paiute Tribes	April 24, 2008	August 11, 2009	Date	To/By/From	Method	The Project Manager continues to provide project updates to the tribe via monthly meetings The Tribes have expressed concern over the transmission line alignment which is not
			April 24, 2008	Presentation by Walt George (BLM) in Mountain Home, ID	In-person	
			May 22, 2008	Joint Meeting: BLM and Tribal representatives	In person (Bill Baker Twin Falls District Manager)	

Table 3.3-2. Status of Native American Consultation (continued)

Name of Tribe	Date of Initial Contact	Follow-up Letters	Additional Follow-up			Summary of Issues Raised during Consultation
Shoshone-Paiute Tribes (Cont.)			July 24, 2008	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	in the proposed WWE Corridor. They indicated they would like this Project to follow it or other existing corridors.
			August 28, 2008	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			September 25, 2008	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			October 23, 2008	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			January 22, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			January 28, 2009	Joint meeting: BLM, tribal, and Owyhee County representatives	In-person	
			February 25, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			March 26, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			May 25, 2009	Joint Meeting: BLM and tribal	Tele-conference	
			June 25, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			July 23, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			September 24, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			October 22, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	

Table 3.3-2. Status of Native American Consultation (continued)

Name of Tribe	Date of Initial Contact	Follow-up Letters	Additional Follow-up			Summary of Issues Raised during Consultation
Shoshone-Paiute Tribes (Cont.)			November 4, 2009	PA kickoff invite	E-mail	
			November 25, 2009	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			January 28, 2010	Joint Meeting: BLM and tribal representatives	In-person (Bill Baker, Twin Falls District Manager)	
			February 25, 2010	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			May 25, 2010	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			June 24, 2010	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			July 22, 2010	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			August 26, 2010	Joint Meeting: BLM and tribal representatives	Tele-conference (Walt George)	
			January 27, 2011	To: Ted Howard and Robert Bear	E-mail	E-mailed PA meeting invitation
Southern Cheyenne and Southern Arapaho	May 29, 2010		**Date**	**To/By/From**	**Method**	No response
Oglala Sioux	July 30, 2010		**Date**	**To/By/From**	**Method**	No response
			November 23, 2010	From: Joyce Whiting	Phone	
			December 9, 2010	To: Joyce Whiting	E-mail	
			January 3, 2011	To: Joyce Whiting	E-mail	
			January 27, 2011	To: Joyce Whiting	E-mail	

Visual Impacts on Resources, Including Cultural Landscapes

This analysis considers impacts upon visual resources from three perspectives. These are:

1. The BLM's VRM system, which uses a specific inventory system to determine visual impact and to determine whether that impact is consistent with visual land management objectives assigned in the area's RMP;

2. The BLM's cultural resource evaluation of project impact on cultural resources for which setting may be a contributing component of the site's eligibility for the NRHP, which includes both inventory and interpretation of simulation photography, and

3. The BLM's understanding of the importance that Tribes place on cultural landscapes and the possible impacts the Project could have on those landscapes and on the Tribal uses of those landscapes.

The first method of visual analysis is found in Section 3.2 and discusses impacts to visual resources on Public Lands using the VRM system. The second method is found in Section 3.3 and specifically analyzes the impacts of the Project on the setting of historic properties where appropriate.

The BLM has the following understanding of Tribal perspective of cultural landscapes. Local tribes in the area of the Gateway West Project have used and viewed, and will continue to use and view, certain landscapes as integral wholes rather than as a collection of artifacts, views, or natural resources. Some of these landscapes are considered sacred landscapes, which, as sacred sites, "function to create a conceptual and emotional parallelism between the objective order of the universe, the realm of the spirits, and the intellectual constructs of American Indian cultures. They are portals between the world of humans and the world of spirits through which sacred power can be attained and spirits contacted" (Walker 2005). These landscapes cannot be parsed into separate resources, and the rocks, soil, water, air, plants, animals, and also any human artifacts are all considered together as inseparable parts of the whole. For the purposes of this NEPA analysis, sacred landscapes will be considered in the section on cultural resources but are explicitly recognized as including all elements of the landscape and not just those resources that may be eligible for inclusion on the NRHP.

To the extent that Tribes are willing to share the location and importance of specific sacred sites, Project impact to those sites will be considered in the analysis of impacts on cultural resources. To date, specific information has not been shared with the BLM, and some Tribes have indicated that they will wait to identify locations until the BLM identifies a preferred alternative. BLM anticipates including any information Tribes share as part of the cultural resources analysis in Section 3.3 in the Final EIS. Landscapes thus analyzed will be considered regardless of their eligibility for the NRHP.

3.3.2.4 Methods

To identify cultural resources and TCPs within the Analysis Area, the Project Proponents conducted a literature review, Class III (intensive) cultural resources

investigations, and ethnographic studies of the Proposed Route and Alternatives. The methods used for each of these objectives are explained below.

Literature Review

As set forth in the BLM Manual 8110 (BLM 2004b), a literature review consists of a reasonable compilation of existing information about known cultural resources, which is assembled from a review of previously recorded sites in the SHPO databases and from the available literature. The study area for the literature review included a 0.5-mile area on either side of the Project route centerline, along the Proposed and Alternative Routes. This area was established to aid route siting efforts, to accommodate shifts in the route alignment, and to cover areas where access roads, substations, and other construction or operation facilities may occur outside the 500-foot-wide intensive survey corridor (URS 2009a). Data were gathered by official file records requests to each SHPO for sites and inventories located in any township, range, and section intersected by the 1-mile-wide transmission line corridor. This resulted in a sample slightly larger than the 1-mile-wide corridor, because the corridor might cross an extreme corner of the section. The records search focused on collecting information regarding previously recorded cultural resources within the study area, as well as identifying areas previously surveyed. Additional data sources for the literature review included current published and unpublished literature, chronologies, cultural and historical contexts, and information provided by the BLM, Forest Service, and the NPS Trails Office. The full analysis is filed as a confidential document in the BLM FOs that the Proposed Route crosses (Henderson et al. 2009; Nilsson et al. 2009).

Class III Cultural Resources Inventory

Class III investigations involve pedestrian field surveys that may locate new sites and provide additional knowledge of site types, densities, and precise locations of sites within the area of analysis (BLM 2004b). The Class III cultural resources inventory for the Project is being conducted in two phases. Phase I includes 15 percent sample surveys and a visual impact survey, while Phase II encompasses an intensive survey of the route to be constructed (preferred route on public lands).

Phase I

Fifteen Percent Sample Surveys

Field surveys of a 15 percent sample of the Proposed Route and Route Alternatives (URS 2009b) were completed in 2008, 2009, and 2010. The purpose of Phase I is to provide sufficient information for a comparison of alternatives by identifying additional cultural resources sites in the area, helping to predict relative site densities for Route Alternatives, and providing additional information regarding cultural resources within the Analysis Area. The 15 percent sample area consists of 500-foot-wide by 1-mile-long segments located on public lands along the length of the route (URS 2009b). These segments were randomly chosen from a geographic information system analysis of public lands filtered to exclude areas in which cultural resources inventories have occurred in the last 5 years. Areas greater than 25 percent slope or exhibiting recent disturbance were excluded from the survey. Third-party consultant archaeologists used a 30-meter interval pedestrian linear survey to cover each sample segment. The high

frequency of existing cultural resources data in the BLM Kemmerer FO provided sufficient information to meet the objectives of Phase I. The BLM Kemmerer FO provided data on percentages of previously inventoried portions of the Segment 4 Proposed Route and Route Alternatives within that jurisdiction, and known cultural resources within a 500-foot-wide zone equivalent to the Phase I sampling. The percentages of previous inventories on the seven routes analyzed in the BLM Kemmerer FO varied from 11 to 19 percent, with an overall average of 16 percent, which is approximately analogous to the Phase I 15 percent sampling. Therefore, the existing cultural resources data in the BLM Kemmerer FO were used to meet the Phase I objectives in this document.

As noted earlier, the onset of inclement weather precluded the completion in 2010 of the 15 percent sample surveys along Alternative 7I in Nevada, as well as the recently added Alternatives 7J, 8E, 9F, 9G, and 9H in Idaho. These surveys were completed in spring 2011, with the exception of Alternative 7I, due to snow the roads have been impassable until as late as June 2011.

Visual Impact Survey of Historic Trails and Other Properties

Phase I also included an analysis of visual impacts on the settings of all known historic trails and other known cultural resources, such as Hagerman Fossil Beds National Monument and Minidoka National Historic Site, along the Project route. Field visits were completed in June, July, August, and December 2008; September to December 2009; and August 2010. The elements of the visual assessment included (1) identification of historic sites and trail segments, (2) inventory and assessment of existing visual conditions and viewshed analysis, (3) identification of representative KOPs, (4) completion of visual contrast rating (VCR) worksheets, and (5) determination of impacts. The methods for visual resource analysis were based on the BLM (1986b) Visual Resource Contrast Rating System Manual (BLM Manual, Section 8431).

BLM FO archaeologists in the Analysis Area suggested possible KOP locations and identified cultural resources, such as NHTs, and these were given priority when choosing KOPs. The NPS also provided additional information on sites within 5 miles of the study area, many of which were included in the inventory. In Wyoming and Nevada, shapefiles obtained from the SHPO and BLM contained verified trails data. In Idaho, however, *Emigrant Trails of Southern Idaho* (Hutchison and Jones 1993) was used to identify trails that are known to have intact physical remnants. Those trails were identified as “verified” and those segments that are known to be destroyed or are currently unknown were identified as “unverified” trails. Those that were listed as “unverified” were not visited. The maps produced by the viewshed analysis distinguished verified and unverified trail segments. In general, where KOPs were not established by the BLM or NPS, the viewshed analysis (described in the following paragraphs) was used to establish KOPs within a 3- to 5-mile distance along the trails that parallel the Project and within a mile of either side of the Project (where access was available) where the Project crosses the trails.

One area in southwestern Wyoming, near Monell, was omitted from analysis of visual impacts. According to an MOA executed in 2007 among the BLM, Wyoming SHPO,

and Oregon-California Trails Association (OCTA), the settings of the Overland Trail and Point of Rocks to South Pass Stage Road located within the MOA boundary have degraded sufficiently so that they are no longer an important aspect of eligibility for these properties.

Although the study was conducted for all trail segments within the Analysis Area, high-potential sites and trail segments were also identified and given priority for analysis. The National Trails System Act identifies *high-potential historic sites* as "those historic sites related to the route, or sites in close proximity thereto, which provide opportunity to interpret the historic significance of the trail during the period of its major use. Criteria for consideration as high-potential sites include historic significance, presence of visible historic remnants, scenic quality, and relative freedom from intrusion." The National Trails System Act identifies *high-potential route segments* as "those segments of a trail which would afford a high-quality recreation experience in a portion of the route having greater than average scenic values or affording an opportunity to vicariously share the experience of the original users of a historic route."

The viewshed analysis used GIS to evaluate whether transmission line towers might be visible by viewers along historic trails and generated two types of viewsheds: a multiple viewshed and an individual viewshed. A multiple viewshed analysis combines the viewable areas from several observation points into a single visibility surface. The fieldwork analysis used transmission towers, spaced at 300 feet or 100 meters, as viewpoints. This method created a visibility surface 5 miles on either side of the transmission line where the towers would most likely be visible. Historic trails/routes were overlaid in GIS on the visibility surface to identify any intersecting trail sections or portions of the trail that needed to be visited in the field. In contrast to multiple viewshed analysis, individual viewshed analysis results in a visibility surface that relates to a single observation point. Several KOPs along historic trails were established in the field and an individual viewshed was created for each KOP. The individual viewsheds identified the Project segments and alternatives that were visible from each KOP. Both viewshed analysis methods assume an average observer eye level of 5.5 feet. Tower height was assumed to be 190 feet for the field viewshed analysis and 180 feet for the KOP analysis. In addition to identifying each visible Project segment and alternative, the shortest distance from a KOP to the Project segment and alternative was calculated in GIS using a straight line, or perpendicular, distance. If a Project segment or alternative did not intersect the viewshed at the shortest distance, then the distance was calculated at an angle from the KOP to the nearest point of Project/viewshed intersection.

Photographs were taken to document existing conditions at each KOP and were used to evaluate visual conditions and Project visibility. Throughout the process of inventory and impact assessment, additional KOPs were chosen for photographic simulations. Specific criteria for the selection of a KOP for simulation vary but generally included requests from various federal or state agencies and the following characteristics: typical impacts in a particular geographic area, areas of visual concern, sensitive historic resources, or potentially high levels of visual impact (maps of the KOP locations are included in Appendix E, Figures E.3-1 through E.3-11).

Assessment of impacts on cultural resources within the Project's viewshed assumed a worst-case scenario, in which all viewers would have views toward the proposed Project on a high-visibility day (recommended to be up to 5 miles and beyond) and the KOP chosen for that resource would best represent the disparate viewing conditions and viewing opportunities. In September 2009, Idaho and Wyoming BLM authorized use of the following procedure for visual analysis of cultural resources within the Project area.

The *Guidelines for Determination of Visual Effects of an Undertaking on the Integrity of a Historic Setting*, Appendix C of the State Protocol, executed between the Wyoming BLM and Wyoming SHPO (BLM 2006), provides guidance on assessment of visual impacts for known cultural resources. Appendix C summarizes the procedures as follows:

1. Identify cultural resources for which setting is an important aspect of integrity.
2. Identify KOPs, those locations where view of the proposed undertaking is most revealing.
3. Assess VCR for each KOP.
4. Determine visual impacts.

Once the VCR for each KOP has been evaluated, then Appendix C stipulates the following impacts:

- **No Contrast** – If the proposed Project elements will not be seen, there is no contrast between the undertaking and the setting. The agency determination should be "**No Historic Properties Affected.**"
- **Weak Contrast** – If the proposed Project elements, or portions of the elements, can be seen but will not dominate the setting or attract the attention of the casual observer because the basic elements of form, line, color, and texture found in the setting are repeated in the Project's physical elements, there is a weak contrast between the undertaking and the setting. The agency determination should be "**No Historic Properties Adversely Affected.**"
- **Moderate or Strong Contrast** – If the proposed Project elements tend to dominate the setting, there is a moderate or strong contrast between the undertaking and the setting. The agency determination should be "**Historic Properties Adversely Affected.**"

Phase II

Fieldwork for Phase II of the Class III inventory began in 2009 on public lands along portions of the route without alternatives and will continue once the BLM has selected the Preferred Route. The Phase II survey covered a 500-foot-wide corridor, 250 feet on either side of the Proposed Route centerline. The Phase II survey also covered ancillary developments, such as substations, access roads, staging areas, pull sites, helicopter fly yards, and any other areas related to the proposed action. Third-party consultant archaeologists used a 30-meter interval pedestrian linear survey to cover the corridor. If design changes or selection of alternatives result in the selection of Project areas that were not fully surveyed in the 2009-2010 field efforts, supplemental Class III

surveys will be conducted to provide complete coverage of the Analysis Area. The results of the Phase II cultural resources inventory will be summarized in a stand-alone Class III cultural resources inventory report. A full analysis of visual impacts on the settings of NHTs, other trails, and related cultural resources has been summarized in a stand-alone historic trails document that will complement the Class III inventory report (Henderson et al. 2010). While the rest of the Class III report is confidential to protect sensitive resources, the historic trails report is in the Administrative Record for this project. Section 3.3.3.3 of the EIS draws from the trails report.

Ethnographic Studies

The Shoshone-Paiute, Shoshone-Bannock, Eastern Shoshone, and Northern Ute Indian Tribes have requested ethnographic studies to protect Tribal interests and to assist the BLM in meeting its obligations under NEPA, NHPA, EO 13175, AIRFA, ARPA, and numerous other laws and EOs. The BLM will treat all information gathered during the development of the ethnographic research as confidential. The method for conducting the ethnographic studies includes background research and literature review, ethnographic interviews to determine contemporary and ongoing uses of culturally significant areas or sites, and a resulting final report for inclusion in the Section 106 process and development of the Final EIS. The qualified professional to conduct the study will be chosen through consultation with the designated Tribal official. Tribes requesting the ethnographic studies will control the distribution of their respective report.

3.3.2.5 Existing Conditions

The 1,103-mile-long Gateway West Transmission Line can be considered an environmental transect, inasmuch as it crosses several environmental zones from its beginning in east-central Wyoming to its terminus in southwestern Idaho, with one alternative crossing through a portion of northern Nevada. For discussion purposes, it is useful to distinguish the project environmental setting by *ecoregion*. Ecoregions are defined as “areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources” (USEPA 2007). This is relevant to an understanding of human settlement and subsistence in the Project area, because each ecoregion is characterized to by a distinctive landscape that, to a greater or lesser extent, influenced human settlement and by a complement of essential resources (e.g., potable water, plants, animals, and useful raw materials) upon which the prehistoric and historic inhabitants relied for subsistence. Therefore, modern environmental parameters are used to interpret past patterns of human settlement and subsistence. The regional climate has fluctuated dramatically in the 12,000-plus years that humans have occupied these areas of Idaho and Wyoming. A general description of these ecoregions serves as a natural baseline against which the representative cultural resources are compared, with the ultimate purpose of deciding which Project segments (proposed or alternative) are least likely to impact significant cultural resources.

Wyoming Ecoregions

Descriptions of the Wyoming ecoregions are derived from Chapman et al. (2004) and Knight (1994).

The Gateway West Transmission line begins in the Powder River Basin Ecoregion, which is described as rolling prairie and dissected river breaks along the North Platte River. The natural vegetation community is short and mixed grass prairie with stands of cottonwood trees along drainages. This ecoregion encompasses the extreme northern end of Segment 1. The rest of Segment 1 crosses four ecoregions: the Laramie Mountains, which is defined by shrublands, alpine, and subalpine mountains, with high plains prairie, mid-elevation forests, and shrublands; Laramie Basin, with rolling hills, rolling alluvial fans, and nearly level to flat floodplains and terraces, covered by shrublands and mixed grass prairies; and Shirley Basin and Shirley Mountains, defined by high elevation valleys, hills, ridges, footslopes, and nearly flat floodplains and low terraces, with shrubland and mid-elevation forests. The vast majority of the prehistoric sites in these five ecoregions are limited activity and open camps (see below for definition of these site types) in approximately equal frequencies, except for the Shirley Basin, where open camps greatly outnumber limited activity sites. These resources represent a pattern of regional settlement consisting of base camps surrounded by task activity localities where desired natural resources, such as food (plants and animals) and raw materials for tools, were obtained. The historic era is represented by sites related to settlement (principally agricultural/animal husbandry and energy exploration/mining), transportation (emigrant trails, roads, and railroads), and waterworks. Many of these early Euro-American visitors traveled through this area, on their way to more appealing places, but others stayed to settle, building irrigation ditches and laterals to bring water to the crops they had planted. Eventually, the railroads replaced the emigrant trails as the primary routes of travel through the region. Modern impacts in these ecoregions include uranium and coal mining, oil and gas extraction, wind energy farms, livestock grazing, and wildlife habitat, which may impact local cultural resources.

Segment 2 crosses the Hanna-Carbon Basin Ecoregion, which consists of hills, rolling alluvial fans, sand dunes, dissected ridges, and level floodplains and terraces, with shrubland, short grass prairie, and aeolian sand dunes. Open camps are more numerous here than limited activity sites, which may be due to the abundance of natural resources found in and around sand dunes. The documented historic resources mirror those observed in Segment 2, signifying the pervasiveness of the pattern of emigration, settlement, and subsequent growth and development. Modern uses of the ecoregion include coal mining, natural gas extraction, wind energy farms, livestock grazing, and wildlife habitat, which may impact local cultural resources.

Segment 3 principally traverses the Washakie Basin Ecoregion and Great Divide Basin Ecoregion, ending on the edge of the Rock Springs Uplift Ecoregion. The two basins encompass rolling plains, flat floodplains and terraces, aeolian sand dunes, and internal drainage, characterized by salt desert shrubs and rolling sagebrush steppe. The Rock Springs Uplift marks a portion of the eastern extent of the Great Basin region that extends west into Idaho, Nevada, and Utah. It includes plains, rolling hills, high plateaus, dissected ridges, valleys, level floodplains and terraces, and aeolian dune fields, vegetated by shrubland, sagebrush and grassland steppe, and high elevation forests. Twice as many open camps as limited activity sites occur in these three ecoregions, an outcome probably attributable to the plentiful sand dunes in this area.

Historic settlements are predominant, with a few transportation sites representing a later pattern of settlement spreading out from the original transportation routes (trails and railroads). The greatest potential impacts are due to mining; timber, oil, gas, and coal production; livestock grazing; and wildlife habitat, which may impact local cultural resources.

Segment 4 displays perhaps the most environmental diversity, crossing four large ecoregions. It begins in the Rock Springs Uplift, crosses the broad expanses of the Green River Basin and Bridger Basin, and then crosses the hills and valleys of the Overthrust Belt. The Green River Basin and Bridger Basin together comprise the largest ecoregion in southwestern Wyoming. The Green River is one of the largest drainages in the region and joins the Colorado River in southeastern Utah. The greater ecoregion is defined by flat floodplains and terraces, rolling alluvial fans, aeolian dunes, steep-sloped dissected ridges, and valleys. The natural vegetation communities include shrublands, short mixed-grass prairies, and sagebrush steppe. Riparian areas along drainages, near springs, snow traps, and perennial rivers support groves of aspen, willow, cottonwood, greasewood, and mountain mahogany. The Overthrust Belt is located along the western boundary of the Green River Basin and is defined by moderately glaciated, steep mountains, unglaciated footslopes, alluvial fans, rolling hills, ridges, plains, level flood plains, and terraces. The natural vegetation communities include shrublands, sand dunes, sagebrush steppe, high elevation forest, and mountain meadows. Segment 4 has, by far, the greatest number of prehistoric sites and most of these are open camps. As is the case with the Washakie and Great Divide basins in Segment 3, these frequencies are most likely attributable to the profusion of sand dunes, which support beneficial natural resources. Historic sites again are dominated by settlements and transportation-related localities. The latter are particularly abundant in these areas, perhaps a result of poor soil conditions for agriculture and similar economic pursuits. Modern land uses include dryland and flood irrigation farming, coal mining, timber production, oil and gas production, recreation, livestock grazing, and wildlife habitat.

Idaho and Nevada Ecoregions

Descriptions of the Idaho and Nevada ecoregions are derived from McGrath et al. (2002).

Segment 4 of the Gateway West Transmission Line enters Idaho in the extreme southeastern corner of the state, at the western edge of the Wyoming Basin. It crosses the Wet Valley Ecoregion and Semiarid Bear Hills Ecoregion. The Wet Valley is characterized by wetlands, lakes, canals, rivers, swamps, and marsh lands of the many tributaries originating within the Uinta Mountains. Landforms consist primarily of flat floodplains, low terraces, foothills, and well-drained alluvial fans. The Semiarid Bear Hills consists primarily of sagebrush steppes along the Bear Lake Plateau, which lies within the rain shadow of the nearby Wasatch and Uinta Mountains and is defined by footslopes, alluvial fans, hills, ridges, and valleys. This ecoregion is dominated by sagebrush and various grasses, with occasional aspen groves. The landscape quickly transitions to the Wasatch Montane Zone Ecoregion and the Semiarid Foothills Ecoregion. The Wasatch Montane Zone is defined by partially glaciated mountains and

plateaus. Deep winter snowpack feeds perennial streams leading to the lower arid regions below. Vegetation consists mainly of Douglas-fir and western spruce-fir forests, while south-facing slopes support more arid-adapted plant species. The Semiarid Foothills Ecoregion flanks the eastern and western slopes of the Bear River Range crest. It is partially glaciated and elevations range between 5,500 and 8,500 feet. The natural plant community is sagebrush steppe with various grasses and occasional Utah juniper. As noted above for Wyoming, more than twice as many open camps as limited activity sites occur along Segment 4, and this pattern holds for Idaho. Historic settlements and transportation-related sites are also predominant. Modern uses of the ecoregion include livestock grazing, wildlife habitat, and limited grain and alfalfa farming, which may impact local cultural resources.

Segment 5 occurs entirely within the Northern Basin and Range, but crosses five distinct ecoregions. The Dissected High Lava Plateau Ecoregion dominates much of southwestern Idaho and is defined by unglaciated alluvial fans, rolling plains, hills, and shear-walled canyons cut into extrusive igneous (rhyolite, basalt, and tuffaceous) rocks. It is externally drained by larger tributaries of the Snake River. The natural vegetation community is sagebrush steppe with various arid grasses; Utah juniper is supported on the rocky uplands. The Semiarid Hill and Low Mountains Ecoregion occurs in a broad, discontinuous band across south-central and southeastern Idaho. It is defined by unglaciated mountain slopes, hills, and alluvial fans, with elevations ranging from 4,600 to 7,000 feet. Natural vegetation is sagebrush steppe, with numerous grasses, snowberry, serviceberry, and Utah juniper. Drainages and alluvial fans support stands of aspen, lodgepole pine, and Douglas-fir. The High Elevation Forests and Shrublands Ecoregion is found in discrete pockets across a broad area of southeastern Idaho. It is defined by partially glaciated, steep mountain slopes and peaks along the Bannock Range, Portneuf Range, Albion Mountains, Deep Creek Mountains, and areas of the Sawtooth and Caribou-Targhee National Forests. Modern vegetation communities include western spruce-fir forests along north-facing slopes and sagebrush-dominated grassland along south-facing slopes. The Saltbush-dominated Valleys is the smallest ecoregion in the proposed Project area, located in south-central Idaho. It is defined by unglaciated, gently sloping valleys that drain to the Snake River. The Raft River provides the principal drainage for this ecoregion, and the natural vegetation community consists of saltbush-greasewood. The Sagebrush Steppe Valleys Ecoregion is located primarily in southeastern Idaho, between the Snake River and the Utah state line. The ecoregion is defined by unglaciated, gently sloping terraces, valley bottoms, basin rims, and alluvial fans. It is drained by numerous rivers, principally the Bear River, Portneuf River, Bannock River, Rock Creek River, and Marsh Creek. The natural vegetation community is sagebrush steppe. Segment 5 has few prehistoric resources, and all of them are limited activity sites, probably due to the relative scarcity of natural resources in this area. Historic resources are also sparse and consist almost entirely of a few settlements and emigrant trail segments, suggesting that most visitors were moving through this area, but few stayed to settle. Modern uses include livestock grazing, wildlife habitat, recreation, and timber production, which may impact local cultural resources.

Segment 7 covers large parts of the Northern Basin and Range and Snake River Plain. In the Northern Basin and Range, the segment crosses most of the same ecoregions that Segment 5 crosses. The exception is the Semiarid Uplands Ecoregion, which encompasses mid-elevation zones in the Owyhee and Jarbidge mountains and hills, volcanic cones, buttes, and rocky outcrops. Vegetation consists of mountain sagebrush, western juniper, mountain brush, and grasses. The Treasure Valley Ecoregion encompasses the eastern portion of Treasure Valley, where the Payette, Boise, Weiser, Malheur, and Owyhee Rivers converge at the Snake River. The valley is mainly lowland with elevations ranging between 2,100 and 2,800 feet. The natural vegetation community is sagebrush steppe with saline areas dominated by shadscale and greasewood. The Eastern Snake River Basalt Plains Ecoregion is formed by the deposition of basaltic lava extruded from numerous volcanic vents across the plain. These flows have eroded and are often overlain or interbedded with aeolian and alluvial deposits. The Snake River itself forms the southern margin of the ecoregion and drains the various tributaries that form in the mountains east and south of the large plain. The ecoregion is relatively dry, with a natural vegetation community of sagebrush steppe. The Magic Valley Ecoregion is located within the Snake River Plain. The modern surface of the ecoregion has been significantly altered by the development of historic and modern irrigation and canal systems that supply water to the numerous developments. The natural vegetation community is sagebrush steppe, with shadscale and greasewood present on lower drainage terraces. The Mountain Home Uplands Ecoregion is defined by unglaciated plains, hills, and basalt-capped buttes. The natural vegetation community is sagebrush steppe with small areas of saltbush and greasewood. The Snake River and many of its tributaries crosscut the ecoregion. Segment 7, with the exception of one alternative, has relatively few prehistoric resources and nearly all of them are limited activity sites. The exception is Alternative 7I, which dips south to run along the Utah and Nevada border, through the Brown's Bench obsidian source area, and has many more limited activity sites than do the other segment alternatives. It also has several open camps and sheltered camps, as well as at least one ritual site. It presumably presented optimal areas for aboriginal settlement. Historic resources are also generally sparse in the segment, with the exception of Alternative 7I, which runs along Idaho's border with Utah and Nevada and Alternative 7H, which runs a little farther north. Both areas have more historic settlements and emigrant trails, suggesting that many of those who traveled through this area eventually stayed (or returned) to settle. The rich agricultural potential of the ecoregions in Segment 7 has allowed for historic and modern increases in population density that has led to these ecoregions having large areas of urban and suburban housing and industrial development, which may impact local cultural resources.

Segment 8 crosses the Snake River Plain and the same ecoregions as Segment 7. A modest number of prehistoric resources, most of which are limited activity sites with a handful of open camps are found in Segment 8, a pattern that probably reflects the localization of essential natural resources. A relatively large number of historic settlements, transportation-related sites (emigrant trails, roads, and railroads), and irrigation waterworks are found here. The fertile volcanic soils, once watered, attracted many settlers to this area.

Segment 9 also crosses the Snake River Plain and the same ecoregions as Segments 7 and 8, with one exception. One of the segment alternatives passes through the Unwooded Alkaline Foothills Ecoregion, which is located in the southwestern corner of the Snake River Plain, between the Snake River and a portion of the Owyhee Mountains. The ecoregion contains rolling foothills, hills, benches, alluvial fans, and badlands. Perennial streams are rare in this ecoregion, but numerous intermittent and ephemeral drainages are present. The natural vegetation community is shadscale and greasewood with areas of sagebrush steppe. Segment 9 includes many prehistoric limited activity sites, a sizable number of sheltered camps, and a handful of open camps, demonstrating an abundance of natural resources that drew aboriginal inhabitants to the area. Historic settlements are particularly numerous in Segment 9, while transportation-related sites are relatively sparse. Irrigation waterworks are also present, demonstrating the attractiveness of the area to historic settlement once water was brought to the fertile soils. Current land use is mainly rangeland and wildlife habitat. Irrigated farmland is present along the Snake River and near reservoirs.

Segment 10 crosses the Snake River Plain. It has no prehistoric resources, indicating that its natural resources were sparse. It did, however, support several historic settlements, emigrant trails and railroads, and irrigation waterworks, reflecting again the historic growth of settlement in the area. Irrigated farmland is present along the Snake River and near reservoirs.

Ethnohistoric Overview

Native American culture including trade, warfare, and inter-tribal relations has always involved the dynamic interaction of multiple groups. The influx of European Americans into their homeland brought about many sudden changes to Native American culture, including population decimation due to disease and warfare, loss of traditional territories and resources, and forced assimilation into Euro-American culture. Ethnographic and ethnohistoric studies have attempted to record the pre-contact customs, languages, religion, and social structures of tribes.

The Shoshone, Paiute, and Bannock occupied portions of southern Idaho, western Wyoming, and northern Utah. As mentioned above, an ethnographic study requested by the Shoshone-Paiute and Shoshone-Bannock Tribes is currently underway. In addition to his own reassessment of the Shoshone-Bannock, Walker (1993) cites Lowie (1924), Stewart (1939), and Fowler and Liljeblad (1986) as the principal ethnographic sources for the Northern Paiute (Walker 2009). Traditional ethnographies of the Northern Shoshone and Bannock Tribes are Lowie (1909), Steward (1938), Murphy and Murphy (1960, 1986), and Walker (1973, 1978, 1993).

The Eastern Shoshone have occupied western Wyoming and, periodically, adjoining areas since A.D. 1500 or earlier. Their migration from the Great Basin area (Nevada and Utah) into Wyoming, and then farther out into the northern Plains by ca. A.D. 1800, is supported by tribal history, early historic accounts, and archaeological data. A transitory tribe, the Eastern Shoshone moved frequently from place to place to search for food, as well as to avoid harsh winters and hostile tribes, such as the Blackfeet and,

later, the Arapaho and Sioux (Bevill et al. 2008; Shimkin 1986). Key ethnographies for the Eastern Shoshone are Lowie (1915), Hamilton (1905), and Shimkin (1942).

In general, the Ute are understood to have occupied areas primarily in western Colorado and central and eastern Utah (Callaway et al. 1986). A more recent review of historic accounts written by Spanish explorer Father Silvestre Velez de Escalante in 1776, the 1765 Juan Rivera diary, and various letters to the U.S. Office of Indian Affairs indicate that a northern shift in Ute territory may have occurred during the protohistoric stage (Baker 2007). According to Baker (2007), these sources vaguely suggest that the Ute were present near the southern edge of Wyoming, particularly in the area of the Green River. Identified Ute bands that are known to be closest to southwestern Wyoming during this time period are the Uintah, the Yamparika, and the Cumumba Bands (BLM 2004c). Previous ethnographic studies for the Northern Ute Tribe include Steward (1942), Jorgensen (1972), and Janetski (1983).

The Tribal group known as the Arapaho historically lived on the eastern plains of Wyoming and Colorado. Scholars have been unable to say definitively when and how the Arapaho began roaming the northern Plains, although many think that their ancestors were most likely from present-day Minnesota and North Dakota. Before the period of Euro-American expansion, the Arapaho were living in Wyoming, Colorado, South Dakota, Nebraska, and Kansas (Fowler 2001). The principal ethnographic studies for the Northern Arapaho are Salzmann (1983), Dorsey and Kroeber (1903), and Mooney (1907).

Wyoming Cultural Resources Inventory Summary

Previous Inventories

More than 1,200 cultural resources inventories have been conducted within the Project area between 1974 and 2007, with 20 percent having been conducted in the last 5 years. The majority of these studies are small block inventories or linear surveys related to well pad sites, access roads, seismic lines, and pipeline development on public lands. The number of inventories by Project segment is relatively similar with the exception of the Proposed Route in Segments 1E and 1W, where fewer surveys have been conducted. These differences may be attributable to the greater amounts of private land or fewer development projects in those segments, resulting in fewer federal undertakings.

Previously Recorded Cultural Resources

The search of the Wyoming SHPO cultural records for the Wyoming portion of the Project area identified more than 3,000 cultural resources locations in the Analysis Area. The majority (95 percent) of prehistoric site types include lithic scatters and open camps, while only a few of the sites are identified as ritual sites or sheltered camps. The majority of historic site types include stock herding camps, building foundations, canals, cairns, ranching and mining facilities, and transportation features or routes (e.g., NHTs and other emigrant routes, highway segments, historic freight roads, and railroad facilities). The multi-component sites usually consist of lithic scatters with historic debris.

Idaho Cultural Resources Inventory Summary

Previous Inventories

The search of the Idaho SHPO cultural records for the Idaho portion of the Project area (part of Segment 4 and Segments 5 through 10) identified nearly 1,550 previous cultural resources inventories in the Analysis Area. These studies collectively examined approximately 520,000 acres dispersed within the Analysis Area, a 1-mile-wide corridor along all Project segments and alternatives. Most inventories are related to developments, construction, and fiber optic projects.

Previously Recorded Cultural Resources

The records search identified a diverse range of previously recorded cultural resources across the Project area in Idaho. A total of nearly 600 cultural resources locations have been identified. Most (80 percent) of the prehistoric resources are limited activity sites (e.g., lithic scatters). A few sites have cultural features that include fire-affected rock, cairns, housepits, and rock shelters. The majority of historic sites include emigrant trail segments, railroad segments, historic roads, modern roads, transmission lines, and canal segments.

Nevada Cultural Resources Inventory Summary

Previous Inventories

The record search conducted at the BLM Elko District Office indicates that two cultural resource inventories have been conducted along those portions of Alternatives 7I and 7J located in Nevada, examining 1,940 acres, of which approximately 500 acres occur within the Analysis Area. One inventory was conducted by BLM prior to construction of a fenceline, while the other was a reseeding effort. Both projects were conducted in 1989.

Previously Recorded Cultural Resources

The inventories resulted in the identification of over 200 cultural resources located within the Analysis Area (extending 0.5 mile south from the Idaho-Nevada border). Identified sites are all prehistoric in origin and consist of lithic scatters and quarrying areas, many with stone tools, related to locally occurring obsidian and ignimbrite sources.

Prehistoric Resources by Segment and Alternative

Table 3.3-3 summarizes, by segment/alternative and resource type, the prehistoric resources that are listed in the NRHP, officially determined eligible for the NRHP, or unevaluated (and assumed NRHP-eligible for the purposes of this analysis) within the 1-mile-wide Analysis Area. The Proposed Routes are listed first by segment, followed by the Route Alternatives. It should be noted that the Proposed Route in Segment 4 and Alternative 4A overlap both Wyoming and Idaho. To simplify the discussion, the literature review results for Segments 1 through 4 are included in Wyoming, while Segments 5 through 10 are included in Idaho, and a small portion of Alternative 7I/7J crosses into Nevada. As a way of achieving consistency in descriptive site types for all

Table 3.3-3. Summary of Prehistoric Resources by Segment and Type[1/]

Segment	Proposed Route and Alternatives	State	Open Camp	Ritual	Sheltered Camp	Mortuary	Rock Art	Limited Activity	Totals
1E	Proposed Route	WY	13	–	–	1	1	21	36
	Alternative 1E-A	WY	3	–	1	–	–	14	18
	Alternative 1E-B	WY	12	–	–	–	–	9	21
	Alternative 1E-C	WY	9	–	–	–	–	8	17
1W(a)	Proposed Route	WY	12	–	–	–	–	21	33
	Alternative 1W-A	WY	3	–	1	–	–	10	14
1W(c)	Proposed Route	WY	11	–	1	–	–	32	44
2	Proposed Route	WY	219	1	–	–	–	137	357
	Alternative 2A	WY	55	–	–	1	–	26	82
	Alternative 2B	WY	9	–	–	–	–	11	20
	Alternative 2C	WY	50	2	–	1	–	14	67
3	Proposed Route	WY	166	–	1	–	–	126	293
4	Proposed Route	WY/ID	445	3	1	–	–	125	574
	Alternative 4A	WY/ID	115	–	–	–	–	100	215
	Alternative 4B	WY/ID	287	2	–	–	–	91	380
	Alternative 4C	WY/ID	176	–	–	–	–	52	228
	Alternative 4D	WY/ID	169	–	–	–	–	48	217
	Alternative 4E	WY/ID	171	–	–	–	–	45	216
	Alternative 4F	WY/ID	170	–	–	–	–	45	215
5	Proposed Route	ID	–	–	–	–	–	21	21
	Alternative 5A	ID	–	–	–	–	–	7	7
	Alternative 5B	ID	–	–	–	–	–	3	3
	Alternative 5C	ID	–	–	–	–	–	–	–
	Alternative 5D	ID	–	–	–	–	–	17	17
	Alternative 5E	ID	–	–	–	–	–	11	11
7	Proposed Route	ID	1	–	–	–	–	16	17
	Alternative 7A	ID	–	–	–	–	–	5	5
	Alternative 7B	ID	–	–	–	–	–	2	2
	Alternative 7C	ID	–	–	–	–	–	1	1
	Alternative 7D	ID	–	–	–	–	–	–	–

Table 3.3-3. Summary of Prehistoric Resources by Segment and Type[1/] (continued)

Segment	Proposed Route and Alternatives	State	Open Camp	Ritual	Sheltered Camp	Mortuary	Rock Art	Limited Activity	Totals
7	Alternative 7E	ID	–	–	–	–	–	–	–
	Alternative 7F	ID	–	–	–	–	–	1	1
	Alternative 7G	ID	–	–	–	–	–	2	2
	Alternative 7H	ID	1	–	1	–	–	36	38
	Alternative 7I	ID/NV[2/]	3	–	3	–	–	95	101
	Alternative 7J	ID/NV	3	–	4	–	–	94	101
8	Proposed Route	ID	9	–	–	–	–	39	48
	Alternative 8A	ID	1	–	5	1	–	45	52
	Alternative 8B	ID	3	–	–	1	–	5	9
	Alternative 8C	ID	–	–	–	–	–	–	–
	Alternative 8D	ID	1	–	–	–	–	1	2
	Alternative 8E	ID	–	–	5	–	–	6	11
9	Proposed Route	ID	5	–	9	–	–	61	75
	Alternative 9A	ID	–	–	–	–	–	2	2
	Alternative 9B	ID	–	–	7	–	–	23	30
	Alternative 9C	ID	–	–	8	–	–	23	31
	Alternative 9D	ID	1	–	6	–	–	42	49
	Alternative 9E	ID	1	–	3	–	–	21	25
	Alternative 9F	ID	1	–	6	–	–	9	16
	Alternative 9G	ID	1	–	9	–	–	49	59
	Alternative 9H	ID	1	–	9	–	–	16	26
10	Proposed Route	ID	–	–	–	–	–	1	1

1/ The Proposed Routes and Route Alternatives are not mutually exclusive, and totals for resource types are not included in this table to avoid error produced by the presence of a resource in more than one alternative.

2/ The Nevada portion of Alternatives 7I and 7J have not been surveyed. According to the BLM staff at the Wells FO, this area has a high potential for cultural resources.

states, the following descriptive schema of resource types was developed. It consolidates the numerous site types listed in the Wyoming, Idaho, and Nevada SHPO databases (see Henderson et al. 2009 for additional discussion of these resource types):

Open Camps are minimally defined by the presence of one or more hearth features. The resource type includes open camps, stone circle sites, ceramic sites, and bone beds/kill sites:

- Stone Circle Sites – Although the evidence suggests that many of these sites are habitation sites, the function of stone circles cannot often be inferred from the available archaeological data and is often determined through Native American consultation.
- Ceramic Sites are open camps that are further distinguished by the presence of prehistoric pottery. Such temporally diagnostic artifacts are useful in determining not only the age of an occupation, but the cultural affiliation of the occupants.
- Bone Beds/Kill Sites are locations where large and medium-sized game animals were killed and butchered. Sites are usually recognized by large scatters of bones.

Ritual Sites are places where formalized ceremonies took place or are natural features on the landscape that have religious significance. In the Project area, *stone alignments and cairns* are the most visible remnants of ritual localities. The most dramatic example of such sites is the "medicine wheel," which consists of concentric circles of stones, radiating lines or spokes, and an altar stone or cairn in the center (BLM 2004c).

Sheltered Camps generally consist of a rock overhang or cave, with evidence of human occupancy such as smoke-stained ceilings, artifact scatters, or other features. In this area, rock shelters are most representative of this resource type

Rock Art Sites include pictographs or petroglyphs, which are respectively drawn or inscribed on rock faces. The images often depict events such as battles, spiritual visions, environmental observations, hunting activities, deaths and burials, or simply the visitation of an individual or group at that location.

Mortuary Sites are locations where a body has been interred or is related to burial practices.

Limited Activity Sites are short-term camps where a specialized activity took place. They include lithic scatters, lithic landscapes, quarry sites, and vegetal processing sites.

- Lithic scatters consist of stone materials that remain from lithic procurement activities or stone tool manufacture, and may include bifaces, unifaces, and flaking debris.
- Lithic landscapes cover many miles and are areas or regions where aboriginal peoples habitually tested and procured tool stone and lithic materials. The result

is a cultural landscape created by thousands of years of repeated use (Berrigan 1992; Stainbrook 1994; Harrell 1996).

- Quarry sites are lithic procurement locations where prehistoric peoples extracted lithic materials from primary or secondary geological contexts.
- Vegetal Processing Sites are locations where diagnostic artifacts indicate the collection of processing of floral remains without evidence of occupation (Tate et al. 1989). They are often separated from other sites because they identify a specific type of resource extraction activity.

Archaeological District is defined as "a grouping of sites, buildings, structures, or objects that are linked historically by function, theme, or physical development or aesthetically by plan" (NPS 2000). Districts are not included in the site count summaries as a whole; however, individual sites that are within the districts, within the Analysis Area, are included in the site number totals by segment in Table 3.3-3.

Some categorizations represent compromises (e.g., should a ritual function be categorically applied to stone alignments). Some bone beds and kill sites exhibit hearth features and thereby can legitimately be categorized as open camps, while others lack such features and might better be considered a separate category, but that would defeat the purpose of the consolidated approach.

Following Table 3.3-3 is a general overview of prehistoric resources by state. Specific examples of important sites were identified during agency and public scoping, and are included as examples to demonstrate the breadth and complexity of the prehistoric resources across the Project area.

Wyoming Prehistoric Resource Overview

The Project crosses that portion of Wyoming that falls within the Northwestern Plains and Great Basin culture areas. Due to the overall size of the Project and the number of different geographic zones, a comprehensive culture history of the Project is not included in this EIS. The reader is directed to the *Handbook of North American Indians, Volume 13, Plains* (DeMallie 2001) and *Prehistoric Hunter-Gatherers of the High Plains and Rockies* (Kornfeld et al. 2010) for comprehensive and in-depth summaries of the various prehistoric and ethnographic cultures and cultural developments within the region.

Previously recorded prehistoric resources in the Wyoming portion of the Project area (Segments 1 through 4) are represented by at least one of each defined site type. Together, open camps and limited activity sites comprise over 90 percent of the resource types.

Wyoming Open Camps

- *The Deadman Wash Site* (48SW1455), an open camp, is located less than 0.25 mile north of the Proposed Route in Segment 4 and is one of the most important prehistoric sites within the study area. The site was repeatedly occupied for nearly 8,000 years, from the Paleoindian stage through the Late Prehistoric period (Armitage et al. 1982). Radiocarbon age estimates from various levels

and features, including hearths and semi-permanent structures, provided a well-stratified chronology of occupation periods, lithic tool technology, and mobility and habitation practices of the various cultures. The Deadman Wash site exemplifies long-term occupation and subsistence practices of prehistoric people in southern Wyoming and is the type site for the Deadman Wash Phase (2800 to 1800 Before Present [BP]). Although the site itself was occupied repeatedly, recent research indicates that this phase marks a decrease in the overall population of the Wyoming Basin (Thompson and Pastor 1995).

Other important open camps near the area include Ten Mile Draw, Maxon Ranch, Taliaferro, Blue Point, Hogsback, Willow Spring Bison Pond, Hell Gap, and Pine Springs, all of which have contributed important information about prehistoric occupation in the area.

Idaho Prehistoric Resource Overview

The Project crosses the Great Basin culture area of Idaho, a region that extends beyond the physiographic Great Basin to include portions of the Columbia Plateau and Rocky Mountains. Cultural overviews presented by Butler (1978, 1986), Franzen (1981), Holmer (1986), Meatte (1990), Simms (2008), and Swanson (1974), as well as the literature review prepared for this Project (Nilsson et al. 2009), discuss settlement and subsistence, technology, and cultural interaction of indigenous groups in the study area over time. The reader is referred these overviews for detailed information regarding the cultural continuity and variability presented in Idaho's archaeological record.

Previously recorded prehistoric resources in the Idaho portion of the Analysis Area (Segments 5 through 10) include all defined resource types except for Rock Art; however, Rock Art sites are well-documented in the Project area, particularly in the Guffey Butte-Black Butte Archaeological District. The majority (approximately 75 percent) of these sites are defined as lithic scatters. Two archaeological districts were also identified in the Idaho Project area. These resources are described further below.

Idaho Archaeological District

The Project crosses three archaeological districts in Idaho.

- The proposed *Tunnel Hill Archaeological District* consists of a dense distribution of obsidian (ignimbrite) quarries and open air habitation sites located along a bluff overlooking Shoshone Basin. Diagnostic artifacts suggest the area has been used for the last 9,000 years (Guisto 2010). Evaluation of the district is scheduled for completion in December 2013. The district is crossed by Alternative 7H, 7I, and 7J.
- *Guffey Butte-Black Butte Archaeological District* occupies an area extending along the course of the Snake River for over 24 miles and across four counties. This archaeological district contains over 114 prehistoric and historic archaeological sites (Green and Torgeson 1977). The district was nominated to the NRHP in 1977 (Green and Torgeson) and listed in 1978 (NPS 2010a). The district is significant primarily for its dense abundance of prehistoric sites, including 77 open campsites—numerous villages possessing pithouse features

among them—and 33 rock shelter sites. The district also contains some of the most impressive prehistoric rock art found in the state of Idaho, and over 68 boulders bearing petroglyphs have been recorded there (Green and Torgeson 1977). Historic resources are also present within the district, including several associated with early placer mining activity in the area. Historic sites within the district boundaries include the Guffey Railroad Bridge, the old town site of Guffey, the Swan Falls Dam and Power Plant, and the associated wagon road leading to Swan Falls Ferry. The Swan Falls Dam and Power Plant dates to 1901 and was listed on the NRHP in 1976 (NPS 2010a). The associated wagon road was recommended as NRHP eligible in 2006 (Root et al. 2006). The wagon road serviced an electrically powered ferry located 0.5 mile downriver from the Swan Falls Dam and Power Plant. The western end of the historic wagon road would be crossed by Alternative 9D.

Generally following the boundaries of the SRBOP, the archaeological district extends from its southeastern boundary, approximately 3 miles south of Black Butte, downriver to its northwestern boundary, just northeast of Guffey Butte. The Proposed Route in Segment 8 would cross the district near its northern boundary, south and east of Guffey Butte. Alternative 9D would cross the district in the vicinity of Sinker Butte.

- *Celebration Archaeological Park* is located 2.5 miles north of the Proposed Route in Segment 9 and within the Guffy Butte-Black Butte Archaeological District boundary. It was established in 1989 to allow visitors to explore the area's unique natural and cultural resources in southwestern Idaho. The park is located on the Snake River, south of Melba, near the western edge of the SRBOP. The park is open year-round and is part of the Western Heritage Historic Byway. The park contains historic and prehistoric architecture as well as "thousands" of petroglyphs that represent over 10,000 years of occupation (Canyon County Parks, Recreation and Waterways 2008). It is also the site of the historic Guffey Bridge, a 500-foot-long, two-span bridge, which was built in 1897 to support the rail line connecting Silver City and Nampa. The bridge is the only surviving structure of its kind in Idaho (ISHS 1993).

Idaho Sheltered Camps

Wilson Butte Cave was identified by the BLM to be within the Idaho Analysis Area for visual impact study.

- *Wilson Butte Cave* is a volcanic, basalt lava blister located on the Snake River Plain in the vicinity of Twin Falls. The cave contains stratified deposits that have provided important radiocarbon dates associated with the human occupation of North America, beginning as early as 15,000 years ago and extending through as late as 425 years ago (Gruhn 1961). While the association of human occupation with the earliest dates obtained from Wilson Butte Cave has been questioned due to the paucity of artifacts found in the lowest strata and the possible disturbance of these strata (BLM 2009b), the site has nonetheless yielded a wealth of information that has aided scientists in modeling the region's ecological and cultural past (Butler 1968; Swanson 1972). With dates firmly associated with

human activity beginning at least 10,000 years ago, the cave provides evidence for the earliest occupation of the Snake River Plain and, in conjunction with data from other sites, the earliest occupation of North America. Separate excavations led by Ruth Gruhn in 1958, 1959, and 1988 have uncovered evidence suggesting that the cave was utilized periodically by numerous cultural groups over thousands of years. In addition to Pleistocene big-game hunters, the cave has provided evidence of occupation by subsequent Great Basin and Desert Culture groups (BLM 2009b; Butler 1968), supplying archaeologists with substantial data contributing to the study of prehistory. The resource has been listed in the NRHP since 1974.

Nevada Prehistoric Overview

The Project (Alternative 7I) would cross the Great Basin cultural area of Nevada, in the northeastern corner of the state, at the Idaho-Nevada state boundary. This area is geographically linked to cultural histories of the Snake River Valley and Rocky Mountains (Butler 1986). Cultural overviews for this portion of Nevada are synonymous with those already listed for the Idaho Project area.

Nevada Limited Activity Sites

Lithic scatters and quarry sites are the most common site type identified within the Nevada Project area. Many of the sites identified in the Analysis Area for Alternative 7I include stone tools that are related to the locally occurring obsidian and ignimbrite sources.

- *Browns Bench* is a 50-mile-long, northeast-to-southwest trending geologic formation containing ash-flow obsidian (Hughes and Smith 1993) located southwest of Twin Falls, west of present-day Salmon Falls Creek Reservoir, and into portions of northern Nevada. It is a well-documented source of culturally utilized obsidian. Toolstone specimens – in archaeological and secondary geological contexts – possessing the locality's specific geochemical signature have been recovered from localities as far away as 62 miles to 124 miles from the primary source (Jackson et al. 2009:87; Jones el al. 2003:20). Archaeological sites on Browns Bench, particularly the Dean site at the headwaters of Cedar Creek, have been extensively studied since the late 1950s. Initially believed to possess Paleoindian components dating back as far as 10,000 BP (Bowers and Savage 1962:10), more recent investigations suggest that occupation of Browns Bench sites occurred somewhat later in time, during the Early Archaic to Late Archaic Periods (Plew 2000:54). As a primary source of valued toolstone, the area holds high potential for the presence of cultural resources.

  Browns Bench Obsidian Source Area (through which Alternative 7I passes) is an extensive cultural resource that is being considered for nomination as an archaeological district eligible for the NRHP. Although a file search identified seven sites along the 9-mile Nevada portion of the route, BLM staff at the Wells FO have indicated that this portion of the route may contain numerous archaeological sites, many of which may be eligible for NRHP. A survey of the

Nevada portion of the route has not yet been completed and is planned for the 2011 field season.

Protohistoric Resources

The Protohistoric stage begins between 300 and 400 years BP with the appearance of European trade goods and continues to the early 1800s with the first European contact. Wyoming was protohistorically and historically occupied by the Eastern Shoshone Tribe. as well as the Ute, Cheyenne, and Arapaho Tribes. The Crow occupied the area northwest of the Project area, including the Big Horn and Wind River Mountains, Yellowstone, and Big Horn Basin, during Protohistoric times. At the time of initial European contact, Northern Shoshone and Bannock groups occupied much of Idaho, and the Western Shoshone were present in portions of the Analysis Area in northern Nevada. Other Tribes, such as the Comanche, Gros Ventre, and Blackfoot, are known to have moved through the area as well. The Eastern Shoshone are thought to be one of the earliest Tribes to obtain European goods and the horse in southern Wyoming due mainly to their close ties with their southern relatives, the Comanche, who extensively traded with and raided the early Spanish settlements throughout the southern Plains and into Texas, New Mexico, and Northern Mexico (Shimkin 1986).

Wyoming Protohistoric Overview

The Protohistoric stage is a relatively little known episode in Wyoming culture history. Assigning an accurate age range has been difficult, because its identifying components are often scarce in the archaeological record. Most identified Protohistoric sites contain individual components that are associated with the period, within a larger multi-component site that may also incorporate Late Prehistoric and Historic components. The Natural Corrals (48SW336) site contained Late Prehistoric Desert Side-notched projectile points, European ceramic fragments worked into gaming pieces, glass trade seed beads, a thimble, black powder percussion caps, and a musket ball (Gardner and Creasman 1986). Site 48SW2472 is a predominantly Late Prehistoric site with a small Protohistoric component consisting of a single blue glass seed bead (Pastor 1980). Both of these sites illustrate the integration of European items and trade goods into Late Prehistoric patterns of mobility and resource procurement, a theme common to Protohistoric sites.

Idaho Protohistoric Overview

The Protohistoric stage in Idaho begins between 300 and 220 years BP with the appearance of the horse in the region, even though many Tribes did not adopt the animal (Plew 2000). The stage is defined by increased mobility among the differing cultural groups; the adoption of new material cultures, such as new house types (Meatte 1990); and the use of new resources, such as bison (Plew 2000). As in Wyoming, sites recorded in Idaho dating to this period are few and are often associated with earlier components (Meatte 1990; Plew 2000). The stage is thought to be a “continuation of the Late Archaic Lifeway” (Plew 2000). Sites near the Project area dating to this stage with documented material evidence, such as metal artifacts and seed beads, include the Three Island Crossing and Bliss sites (Plew 2000).

Nevada Protohistoric Overview

As in Idaho, Wyoming, and throughout the Great Basin, the Protohistoric stage is often difficult to identify archaeologically in Nevada. Characterized by the introduction of the horse, Old World diseases, and western textiles to indigenous groups, its archaeological hallmarks include iron utensils and glass trade beads (Arkush 1990). Historically, the Western Shoshone were the primary occupants of the part of Nevada within the current Analysis Area (Thomas et al. 1986). Notably, the Western Shoshone resisted adoption of the horse until at least the 1830s (Thomas et al. 1986: 263) because maintaining herds did not suit their environmental habitat or traditional means of subsistence (Malouf and Findlay 1986: 500). In this regard, the area provides a poignant illustration of how contact with European settlers was differentially manifested among native populations.

Historic Resources by Segment and Alternative

Historic resources in the Project area are categorized as general socioeconomic themes that are identified as historic trails, agricultural/animal husbandry, energy exploration/resource extraction (subsuming mining, lumbering, and power transmission subtypes), transportation (subsuming historic roads, bridges, and railroad subtypes), waterworks (subsuming canals, pipelines, and ditches subtypes), and historic sites (subsuming inscriptions, military, rural, and urban subtypes). These resource types and their subtypes are listed in Table 3.3-4 followed by a general overview of historic resources by state. Specific examples of important sites were identified during agency and public scoping, and are included as examples to demonstrate the breadth and complexity of the prehistoric resources across the Project area.

Historic Trails – Historic Trails, Stage, and Freight Roads

Indian Trails

Before Euro-American westward immigration, Native Americans had established networks of trails and trade relationships. Commodities such as marine shells, obsidian, and turquoise were carried many miles from their origins. Interregional exchange of goods bearing common social and ceremonial value was well organized throughout the continent (Swagerty 1986). Indian trails had a pronounced impact on the early European American history of the Plains. Native guides led explorers along them, traders built their posts beside them, and battles were fought near them. Some emigrant trails developed from Indian trails, although wagon traffic sometimes necessitated modifications to the routes (Blakeslee 1988). The route that became the Oregon NHT was made up, in part, of Native American hunting and migration paths. Early explorers devised routes that incorporated ancient trails accessible by wagon. In 1812, fur traders made an arduous 10-month journey from Fort Astoria, Oregon, to St. Louis, Missouri, covering much of what would become the Oregon NHT (Dary 2005). Later groups of traders and trappers found an alternative route through South Pass that made it possible for wagons to travel the trail (BLM 1986a).

Table 3.3-4. Summary of Historic Resources by Segment and Type[1/]

Segment	Proposed Route and Alternatives	State	Historic Trails	Agriculture/ Animal Husbandry	Energy Development/ Resource Extraction	Transportation	Water Works	Historic Sites	Totals
1E	Proposed Route	WY	5	4	6	9	4	10	38
	Alternative 1E-A	WY	5	1	2	7	3	1	19
	Alternative 1E-B	WY	–	4	–	2	–	1	7
	Alternative 1E-C	WY	–	1	–	1	–	4	6
1W(a)	Proposed Route	WY	5	3	13	5	2	8	36
	Alternative 1W-A	WY	5	1	1	6	3	1	17
1W(c)	Proposed Route	WY	2	1	2	12	2	6	25
2	Proposed Route	WY	17	12	7	25	–	48	109
	Alternative 2A	WY	2	3	7	18	–	11	41
	Alternative 2B	WY	2	–	1	6	–	5	14
	Alternative 2C	WY	1	2	–	4	–	8	15
3	Proposed Route	WY	11	13	–	7	–	18	49
4	Proposed Route	WY/ID	27	9	4	9	4	29	82
	Alternative 4A	WY/ID	19	24	9	4	3	26	85
	Alternative 4B	WY/ID	15	19	13	7	9	27	90
	Alternative 4C	WY/ID	1	12	10	7	3	1	34
	Alternative 4D	WY/ID	1	8	7	4	6	1	27
	Alternative 4E	WY/ID	1	9	7	5	3	1	26
	Alternative 4F	WY/ID	1	9	7	3	1	2	23
5	Proposed Route	ID	3	–	–	–	–	5	8
	Alternative 5A	ID	1	–	1	–	–	–	2
	Alternative 5B	ID	1	–	–	–	–	–	1
	Alternative 5C	ID	–	–	–	–	–	–	–
	Alternative 5D	ID	2	–	–	–	–	6	6
	Alternative 5E	ID	2	–	–	–	–	4	6
7	Proposed Route	ID	5	–	–	3	–	6	14
	Alternative 7A	ID	2	–	1	–	–	1	4
	Alternative 7B	ID	2	–	1	–	–	1	4
	Alternative 7C	ID	2	–	–	–	–	–	2
	Alternative 7D	ID	1	–	–	1	–	–	2

Table 3.3-4. Summary of Historic Resources by Segment and Type[1/] (continued)

Segment	Proposed Route and Alternatives	State	Historic Trails	Agriculture/ Animal Husbandry	Energy Development/ Resource Extraction	Transportation	Water Works	Historic Sites	Totals
7	Alternative 7E	ID	–	–	–	2	–	–	2
	Alternative 7F	ID	–	–	–	1	–	1	2
	Alternative 7G	ID	1	–	–	–	–	–	1
	Alternative 7H	ID	6	4	1	3	–	8	22
	Alternative 7I	ID/NV[2/]	4	4	–	1	–	9	18
	Alternative 7J	ID/NV	4	4	–	3	1	10	22
8	Proposed Route	ID	5	4	2	14	3	40	68
	Alternative 8A	ID	3	3	1	3	2	38	50
	Alternative 8B	ID	3	1	–	6	–	15	25
	Alternative 8C	ID	–	–	–	1	–	1	2
	Alternative 8D	ID	–	1	–	–	–	4	5
	Alternative 8E	ID	–	3	–	2	–	4	9
9	Proposed Route	ID	1	4	–	2	5	29	41
	Alternative 9A	ID	–	–	–	–	–	–	–
	Alternative 9B	ID	2	1	–	–	1	6	10
	Alternative 9C	ID	1	–	–	–	1	4	6
	Alternative 9D	ID	1	9	–	21	–	16	47
	Alternative 9E	ID	–	–	–	–	–	7	7
	Alternative 9F	ID	1	3	–	12	1	13	30
	Alternative 9G	ID	1	7	–	20	1	15	44
	Alternative 9H	ID	1	1	–	11	2	12	27
10	Proposed Route	ID	3	–	–	3	2	14	22

1/ The Proposed Routes and Route Alternatives are not mutually exclusive, and totals for resource types are not included in this table to avoid error produced by the presence of a resource in more than one alternative.

2/ The Nevada portion of Alternatives 7I and 7J have not been surveyed. According to the BLM staff at the Wells FO, this area has a high potential for cultural resources.

Emigrant Trails

The web of pathways that became variously known as the Oregon, Mormon Pioneer, California, or Pony Express Trails was actually a network of trail segments, river crossings, and landmarks that stretched across 1,800 miles of territory and linked the western frontier to the settled lands of the east. Most components of these four historic trails have been congressionally designated as NHTs and are part of the National Trails System. The Oregon, Mormon Pioneer, California, and Pony Express NHTs coincide and share a common corridor across many, but not all, portions of the Project area.

In addition, some nineteenth century wagon trail segments (known to have been used by emigrants bound for Oregon, Utah, or California) were not included in the original national trails feasibility studies, have not been designated as components of a NHT, and therefore are not part of the National Trails System. These are addressed in this document as individual historic trails.

Interconnecting with these transcontinental trails are regional and local historic stage and freight roads, which likewise are not part of the National Trails System. They, too, are addressed in this document as individual trails.

National Historic Trails

In accordance with the National Historic Trails System Act of 1968 (as amended 2009), the BLM and NPS have developed management plans to identify and protect the NHTs and their associated sites and resources (BLM 1986a; NPS 1998). It is the responsibility of the BLM to protect and interpret trail resources that are under their jurisdiction (BLM 1986a). Implementing those responsibilities includes, but is not limited to, the following tasks: regular monitoring of the resource, keeping the NPS informed, defining boundaries, erecting and maintaining trail markers, providing and maintaining facilities, issuing and enforcing regulations, maintaining the scenic/historic integrity, avoiding destruction of segments, and mitigating the unavoidable impacts (BLM 1986a).

Agricultural/Animal Husbandry Sites are locations, features, or structures associated with cultivating land; raising crops; feeding, breeding, or tending domestic animals; and raising livestock.

Energy Exploration/Resource Extraction – As the explorers and trappers of the late eighteenth century and early nineteenth century were replaced by the growing number of emigrants traveling to or through the Project area, mineral and natural resources began to be actively explored, prospected, and widely exploited. Resource types within this category include lumbering sites, mining sites, and power transmission sites:

- Lumbering sites are buildings, structures, objects, sites, or districts associated with cutting or preparing lumber.
- Mining sites include any buildings, structures, objects, sites, or districts associated with natural resources extraction, such as oil, gas, coal, or other mineral. Mining sites are identified by single and multi-family houses (made out of milled wood, brick, stone, or logs), bunk and boarding houses, concrete and stone foundations, commercial buildings (saloons, stores, and warehouses),

industrial buildings (machine shops and warehouses), mining-related buildings (pump and fan houses, elevator and hoist houses, changing rooms, tool storage houses), cisterns, wells, privies, and railroad features (trestles, spurs, switching equipment, lights, and yards). Mining-related features include adits, shafts, air shafts, hoist frames, and trestles. Artifacts include domestic materials (glass, clothing items, ceramics, food and beverage containers, and tools), machinery (pumps, fans, hoist and elevator equipment), and miscellaneous items such as head lamps, lunch pails, pipes, and other personal items.

- Power Transmission sites are locations, features, or structures involved with the movement of energy from one place to another. Until recently, transmission lines have not been widely recorded as historic sites. The historic context statement written for the Bonneville Power Administration (BPA) (Kramer 2009), and a report prepared for the Western Area Power Administration that was submitted to the Colorado and Wyoming SHPOs (Schweigert 1998), will be used to help guide resource evaluation during the Phase II survey. Both documents contain a detailed historic context on the design and construction of electrical transmission systems in the western U.S.

Transportation sites include buildings, structures, objects, sites, or districts that are associated with the movement of people and their belongings from one place to another. These sites can be related to air, rail, water, road, or pedestrian travel (NPS 2000). Resources within this category include historic roads, bridges, and railroads.

Waterworks sites consist of buildings, structures, objects, sites, or districts that are man-made features that supply water.

Historic Sites – This category comprises the remaining resource types that do not share a related socioeconomic theme. These resource types include inscriptions, military sites, and urban and rural sites:

- Inscriptions are sites where historical, religious, or other records are cut, impressed, painted, or written on stone, brick, metal, or other hard surface.
- Military sites can include buildings, structures, objects, sites, or districts that are associated with any activity that occurred to support military action or where military activities have taken place. Sites can include, but are not limited to, arms storage, fortification, facilities, battle sites, and roads (NPS 2000).
- Urban sites are locations, features, or structures associated with human settlement in a town or city.
- Rural sites include buildings, structures, objects, sites, or districts associated with human settlement in the non-urban setting.

Wyoming Historic Resource Overview

Previously recorded historic resources in the Wyoming portion of the Project area (Segments 1 through 4) are represented by at least one of each defined historic site type. The different resource types are relatively evenly represented throughout the study area with the Waterworks site type representing the fewest in number

(approximately 4 percent). Approximately 20 percent of the historic resources in Wyoming are related to Historic Trails, with the majority of them located in Segments 3 and 4.

Wyoming National Historic Trail Resource Overview

Oregon NHT. The route that became the Oregon NHT was made up, in part, of ancient hunting and migration paths. Early explorers devised a route that incorporated these ancient trails that were accessible by wagon. In 1812, fur traders made an arduous 10-month journey from Fort Astoria, Oregon, to St. Louis, Missouri, covering much of what would become the Oregon NHT (Dary 2005). In 1836, a group of missionaries made the first recorded wagon trip from Missouri to Oregon (Massey 1992a), and they were soon followed by tens of thousands of emigrants (Dary 2005). By 1843, the trail had seen many groups moving west, lured by tales of fertile land, and in that year, one party of more than one thousand people followed the route. A series of forts, constructed to trade with local Native American Tribes, had been established along the route, and these sites also served as way stations for travelers.

The designated trail for the primary route comprises the 1841-1848 wagon route before the gold rush to California (NPS 1998). In Wyoming, the length of the trail is 491 miles, beginning at the point where the emigrants entered the eastern part of the state near Torrington; to Fort Laramie, through the rangeland and to the North Platte River and present-day Casper; on to Independence Rock; through South Pass; to the Green River; and finally stopping at Fort Bridger before crossing the Bear River into Idaho (NPS 1998). The Oregon NHT follows the eastern shore of the Bear River north between the Tunp Range to the east and Boundary Ridge and Boundary Hills to the west. This area is called the Bear River Divide. The Oregon NHT through the divide is considered to be a high-potential segment (NPS 1998). The route would be crossed by the Proposed Route in Segments 1E, 1W, and 4, and Alternatives 4A, 4B, 4C, and 4D.

California NHT. The California NHT, like the Oregon NHT, was initially used by immigrants in the early 1840s to traverse the western expanses of the United States and settle on the west coast. The first covered wagon pioneers to head overland to California were the 69 members of the Western Emigration Society, guided west in 1841 by mountain man Thomas Fitzpatrick. At Soda Springs in present-day Idaho, where Fitzpatrick left them, the emigrants split, with about half proceeding to Oregon and the other 34, known to history as the Bidwell-Bartleson Party, continuing to California on their own without guide or maps (Gillis and Magliari 2004).

Between 1842 and 1848, only some 2,700 emigrants went overland to California, but after the start of the 1849 gold rush, thousands of treasure hunters hit the trails. More than 200,000 people emigrated to California between 1849 and 1860 (Unruh 1979), developing many trail variants as they sought the fastest, easiest, or safest ways west. In the years after the Civil War, a massive effort was undertaken to build the transcontinental rail line, linking the two halves of the country. The completion of that line in 1869 signaled the end of the era when the trail served as the primary route for emigrants traveling to the west (NPS 1998).

The designated California NHT overlaps the Oregon NHT from Independence, Missouri, to the Raft River Crossing in Idaho. The trail comprised numerous routes and cutoffs used by emigrants and gold-seekers in 1844 and thereafter. In Wyoming, the total length of the California NHT is 1,088 miles, including several variants and associated cultural resources:

- *Unthank Grave* – Alvah H. Unthank was part of a group of several men traveling on the California NHT. He died of cholera in 1850, at the age of 19, near present-day Glenrock. His grave is marked by an inscribed headstone, footstone, and metal fence. Howard Jackson of Glenrock installed the fence around the grave in 1924. The Unthank Grave (48CO187) has been designated as a high-potential NHT site by the NPS (1998). The site has since been recommended as eligible under Criterion A for nomination to the NRHP by Abraska Cultural Resource Consultants, Inc. (O'Dell 2000), but SHPO concurrence of NRHP eligibility has not been completed, leaving the resource's NRHP eligibility officially unevaluated. The resource is located within 2.5 miles or less of the Proposed Route in Segments 1W(c), 1E, and 1W(a) and Alternatives 1E-A and 1W-A.
- *Child's Route* – This trail (also known as Child's Cutoff) ran along the north bank of the North Platte River from Fort Laramie to Fort Casper. Prior to 1850, travelers commonly crossed to the south side of the river at an established ferry crossing near Fort Laramie. In 1850 two different companies of travelers successfully continued on the north shore beyond the fort and showed that the route could be safely used by wagons. This route, named for Andrew Child, who wrote a guidebook documenting the route in 1852, helped emigrants avoid two hazardous crossings of the Platte River (Wyoming SHPO 2008). The resource as a whole has been determined NRHP eligible with SHPO concurrence. The Proposed Route in Segments 1E and 1W would cross the route.
- *Sublette Cutoff* – The Sublette Cutoff (also known as Sublette Trail or Sublette's Cutoff) of the Oregon/California NHT exemplifies how explorer and emigrant parties modified the original trail routes in an effort to reduce travel time and avoid hazards. The Sublette Cutoff cut straight across the Green River Desert and eliminated as much as 2 days of travel from the journey (Wyoming SHPO 2008).

  The Sublette Cutoff begins at the Parting of the Ways in Sweetwater County and branches to the right, following a nearly straight western course across the area between the Big Sandy and Green Rivers. The trail then angles southwest, over Holden Hill, up Fontenelle Creek, around the south end of Oyster Ridge, across Pomeroy Basin and Commissary Ridge and to the Hams Fork River. From here, the route turns northwest, crossing Dempsey Ridge, and descends into the valley of the Bear River (Larson et al. 2004). Here, the trail rejoins the primary route of the Oregon/California NHT coming from Fort Bridger. The resource as a whole has been evaluated as eligible for the NRHP. The Proposed Route in Segment 4 and Alternatives 4A and 4F would cross the route.

- Holden Hill – Following the crossing of the Green River, the trip over Holden Hill posed yet another formidable obstacle to emigrants utilizing the Sublette Cutoff. Today, multiple variants of the trail itself remain here as do other signs of emigrant travel. Included among such indicators of emigrant presence are numerous inscriptions bearing their names and several marked, and unmarked, graves (Gardner 1985; Gardner and Johnson 1987; Rosenberg 1984). At two discrete localities in the area, 108 historic inscriptions have been recorded (Gardner and Johnson 1987). This complex of cultural resources occupies 1.25 square miles (Gardner and Johnson 1987) of land on the top and southeastern slope of Holden Hill, approximately 3.2 miles north of the Proposed Route in Segment 4.
- Johnny Williams Grave – The probable gravesite of 10-year-old emigrant Johnny Williams is located along the Sublette Cutoff, south of Holden Hill, approximately 2.4 miles north of the Proposed Route in Segment 4. The boy reputedly died after being run over by a wagon near this location in 1851. The gravesite is currently fenced and marked by a commemorative plaque placed by OCTA in 1987.
- White Hill – The emigrants who used the California NHT faced numerous geographical obstacles on their trip. One constant challenge was the hills that had to be climbed and descended. For modern drivers, this presents little difficulty, but for a tired group of travelers, walking next to a heavily laden wagon pulled by oxen, these hills could potentially bring the journey to a disastrous end. One such obstacle was the "white hill," named so because of the high content of lime in the rocks. Wagons would first have to climb up the steep eastern face of the hill. When they reached the top, they would be presented with a stunning vista, including the Wind River Range, Uinta Mountains, and Ham's Plateau. The site is located 1.5 miles south of Alternative 4A and 2.73 miles south of Alternative 4F. The property is a well-known trail resource that has been interpreted and the public visits regularly.
- Alfred Corum Grave – The Alfred Corum grave is one of a few marked graves situated along the Sublette Cutoff trail near Kemmerer. It is located approximately 2 miles south of Alternative 4A. Corum was part of a group that left Missouri in April 1849 hoping to reach the goldfields of California. By July 1849, the party had reached Hams Fork Plateau, where they stopped because Alfred had grown ill. They waited there for a day, reportedly watching almost 200 wagons pass them by. On July 4, the party decided to push on, but left half a dozen members behind to care for Alfred. Unfortunately, his condition worsened and later that day he died and was buried in a shallow grave on the south side of the trail. The gravesite has been protected by fencing and interpretive signs have been installed. The property is a well-known trail resource that the public visits regularly.
- Nancy Hill Grave – In 1852, a party of more than 60 people set out for California. The Hill family, four brothers—Wesley, Samuel, James, and Steven—along with their respective families and their sister Nancy, left their home in Missouri. In July 1852, somewhere near Hams Fork Plateau, Nancy

died of cholera. Only 20 years old, and one of six children of Wesley and Elizabeth Hill, she was buried 65 feet north of the Sublette Cutoff. Her grave is located approximately 2 miles south of Alternative 4A. The gravesite has been protected by fencing and interpretive signs have been installed. The property is a well-known trail resource that the public visits regularly.

- Emigrant Spring – Emigrant Spring is an important historic emigrant campsite, identified in the Project area 3.5 miles south of Alternative 4A, near the summit of Dempsey Ridge. The site has been recorded as one of the largest and most reliable sources of water and firewood that emigrants would have encountered as they traveled westward along the Sublette Cutoff between 1843 and 1867 (Jensen 1975; Larsen 2003). Emigrant graves are located near the spring and intact trail ruts connect to the spring's eastern boundary (BLM 1986a). Today, the site consists of a developed spring, livestock troughs, and a grove of aspen and Douglas-fir trees. The property is a well-known trail resource that has been interpreted and the public visits regularly.

- *Slate Creek Cutoff* – The Slate Creek Cutoff was developed ca. 1852 in response to the need for a route that would avoid the dry and dangerous Sublette Cutoff. The Slate Creek Cutoff diverges from the main route of the California NHT west of the Big Bend on the Big Sandy River. The cutoff crosses the Green River at a point downstream from modern Fontenelle Dam and heads west toward Emigrant Spring. The trail then traverses Slate Creek Ridge and meets the Sublette Cutoff near Rocky Gap. Spatial data provided by NPS and BLM Kemmerer FO depict the resource as forking and following two discrete, northern and southern, physical paths that parallel Slate Creek south of Green River. The northern and southern routes of the resource would both be crossed by the Proposed Route in Segment 4. This resource as a whole has been determined, with SHPO concurrence, as eligible for the NRHP.

- *Dempsey-Hockaday Cutoff* – Established by indigenous groups long before the nineteenth century westward migration, the Dempsey-Hockaday Trail (also referred to as the Dempsey Cutoff or Dempsey-Hockaday Trail) is a 17-mile-long shortcut on the Sublette Cutoff portion of the California NHT between Rocky Gap and Dempsey Ridge. John Hockaday was a mountaineer and government surveyor, and Robert Dempsey was a trader and fur trapper. In 1854, Dempsey and Hockaday attempted to divert a portion of the overland migration from the Sublette Cutoff across this segment of the trail, which crosses Commissary Ridge, Hams Fork Plateau, and Dempsey Ridge. Although it was reportedly a more difficult passage than the Sublette Cutoff to the south, the trail was in use up until the early twentieth century. Today, many portions of the Dempsey-Hockaday Trail retain their historical character and physical integrity and are an important component of the greater California NHT system across the Trans-Mississippi West. The resource in its entirety has been determined NRHP eligible as of 1981 (Rosenberg 1981). Alternative 4F would cross the trail.

Pony Express NHT. The Pony Express was a short-lived (April 1860 to October 1861) mail delivery service that followed the Oregon and California NHTs and was advertised as a quick way to send a letter from St. Joseph, Missouri, to Sacramento, California. A

series of relay stations were built along the route that allowed riders to change horses approximately every 10 miles (Bradley 2003).

No relay stations were identified in the Project area through a cultural records search of Wyoming SHPO data. The same Project segments and alternatives identified for the Oregon NHT (Proposed Route in Segments 1E, 1W, and 4, and Alternatives 4A, 4B, 4C, and 4D) would cross the route.

Mormon Pioneer NHT. In 1846, members of the Church of Jesus Christ of Latter-day Saints ("The Mormons") were driven from Nauvoo, Illinois, by anti-Mormon vigilantes. The first party of pioneers set out across the Iowa prairie in February of that year under the leadership of Brigham Young and arrived at the Missouri River, in the vicinity of present-day Council Bluffs, Iowa, in mid-June. There they settled into their "Winter Quarters" and began planning their migration to the Great Basin, where they could live apart and establish their own government (NPS 1998). In April 1847, a select vanguard of pioneers, again led by Brigham Young, set out along the north side of the Platte River (avoiding conflict with travelers on the south side Oregon NHT) and entered present-day Wyoming on June 1 (NPS 1998). The vanguard group reached the Salt Lake Valley on July 24, 1847. Thousands more Mormon pioneers followed their trail, adding handcart segments and other variants, over the next two decades (Kimball 1991).

The Mormon Pioneer NHT consists only of the route followed by Brigham Young's 1846-47 pioneer vanguard contingent (NPS 1998). In Wyoming, the total length of the trail is 511 miles and overlaps the Oregon NHT from Fort Laramie to Fort Bridger, where they cross the Bear River and depart the state near the area of the Needles (NPS 1998). The same Project segments and alternatives identified for the Oregon NHT (Proposed Route in Segments 1E, 1W, and 4, and Alternatives 4A, 4B, 4C, and 4D) would cross the route.

Wyoming Non-National Historic Trails/Stage/Freight Roads Overview

The following resources are discussed in the order they occur from east to west across the Project area.

- *Rock Creek and Fort Fetterman Stage Road* – The Rock Creek and Fort Fetterman Stage Road was an early transportation route that connected the Rock Creek Station on the UPRR in Albany County with Fort Fetterman, just west of present-day Douglas, Converse County (Rosenberg and Rosenberg 1998). The U.S. Army opened the stage road in 1877, to replace an older route from Medicine Bow Station to the Rock Creek Road junction, 14 miles south of Fort Fetterman. The Rock Creek and Fort Fetterman Stage Road was slightly shorter (83.5 miles vs. 85.4 miles), built on gentler and firmer soil, and crossed fewer streams than did its predecessor. Mail service was established along the Rock Creek and Fort Fetterman Stage Road in 1878, and freighters associated with the Bozeman Trail also used the road. Stage stations were established at 20-mile intervals along the road, intermingled with lesser stations and ranches. As the railroads expanded across Wyoming during the late nineteenth century, the need for stage and mail service along Rock Creek and Fort Fetterman Stage Road lessened. The U.S. government ended contracting for mail service and

suspended the Rock Creek Stage Line in the late 1880s. Fort Fetterman was abandoned in 1882 as the Indian Wars diminished, and the Rock Creek Station was abandoned in 1900 when the UPRR rerouted its mainline and moved 10 miles south.

Many segments of the stage road have been impacted by Road 61 in Albany County and Road 11 in Converse County, as well by extensive irrigation of hay meadows in the La Prele Creek area between Douglas and Casper (Rosenberg and Rosenberg 1998). Ten segments of the road were recorded in 1998 (Rosenberg and Rosenberg 1998). Only two of those have been recommended eligible to the NRHP. The remainder of the road has yet to be fully evaluated. The Proposed Route in Segment 1E would be located approximately 3 miles northwest of this resource, and Alternative 1E-B would be located approximately 2.5 miles east of the resource.

- *Bozeman Trail* – The route known as the Bozeman Trail was used by gold seekers traveling to the Montana strikes. Gold was discovered near present-day Virginia City in 1863, and the area was soon filled with would-be miners. Within a year, Virginia City had more than 10,000 inhabitants, and the Montana Territory was carved out of the larger Idaho Territory (Lindmeir 2002). The Bozeman Trail came about as gold seekers and settlers sought a quicker route to the newly established territory. The trail followed paths that had long been used by migratory animals and Native American hunting parties. Travelers who used these routes followed the Oregon Trail to a point east of Casper, where the two roads diverged (Chapman 2004). The Bozeman Trail (named for John Bozeman, one of the guides who laid out the route) proceeded on a northwestern axis towards Virginia City. While the route was much quicker and provided good water and forage for pack animals, it also crossed lands occupied by the Shoshone, Arapahoe, and Lakota Sioux. The U.S. Army quickly built a series of posts (Reno, Phil Kearny, and C.F. Smith) to help protect travelers along the trail, which caused further tension with Indian groups (Limerick 1987). The end of the American Civil War in 1865 brought increasing numbers of travelers to the area and led to several clashes, including the 1867 Fetterman Fight (when Captain William J. Fetterman and the 81 men under his command were killed by the Lakota) and attempts to overrun Forts C.F. Smith and Phil Kearny. The fighting continued until the 1868 Treaty of Fort Laramie that ceded the Powder River basin, the Black Hills, and other parts of Montana, South Dakota, and Wyoming to the Native Americans. The treaty also led to the closing of the Bozeman Trail and the forts that lay along it (Limerick 1987). The 1863 route of the Bozeman Trail crosses the Proposed Route in Segment 1W(a) of the Project.
- *Rawlins to Fort Washakie Stage and Freight Road* – The Rawlins to Fort Washakie Stage and Freight Road (also known as the Rawlins to Fort Washakie Trail, the Fort Washakie Military Road, and the Rawlins to Lander Stage Road) was a military and commercial stage road that originated from Rawlins, Wyoming, and provided stage and freight services to Fort Washakie and the town of Lander. In the summer of 1869, Camp Auger (renamed Camp Brown in March of 1870) was established at the present-day town of Lander. This camp

was a military fort, supply post, and the Indian Agency location for the adjacent Wind River Indian Reservation, which housed Chief Washakie and the Shoshone tribe. In 1871, the camp was moved 16 miles northwest and renamed Fort Washakie. The road was built by the U.S. military from Rawlins to Camp Auger in late 1869 or early 1870. It was extended to the newly established Fort Washakie in 1871. Originally this road was used exclusively by the military, but after the town of Lander was platted in 1884 there was a need for civilian stage services, and by 1885 the first commercial stage line was in operation. The early 1880s also brought a federal mail contract for this stage route and a telegraph line paralleled the road by 1882. This road was used as a major freight, passenger, and mail service route until about 1910. The stage line ended its services at the end of 1906. The approaching railroad into Lander from the east devalued the stage road and the final abandonment of Fort Washakie in 1909 made this specific route obsolete. The road was still utilized by local ranchers until the late 1930s, when U.S. Highway 287 was built (Moore et al. 1987). The resource, as a whole, has been determined eligible to the NRHP by the BLM with SHPO concurrence. The trail is located 4.4 miles north of the Proposed Route in Segment 2.

- *Rawlins to Baggs Stage Road* – The origin of the Rawlins to Baggs Stage Road is associated with two significant historical events of the 1860s: the construction of the first transcontinental railroad, which passed through southern Wyoming Territory, and the establishment of the White River Agency for the Ute Indians in northwestern Colorado. Heading southward from Rawlins, the road proceeded along the western base of the Sierra Madre Range crossing the Overland Trail at Sulfur Springs. The road continued southward along Muddy Creek to the Snake River Valley, then crossed into Colorado. Stage service ended on the road in 1909 (Frizell 1998).

  As of December 2003, the resource as a whole has been determined NRHP eligible by the BLM with SHPO concurrence. The Proposed Route in Segment 2 would cross the road southwest of Rawlins.

- *Overland Trail* – This trail was developed in response to the Indian troubles that broke out in the early 1860s. The battles and raids that took place along the North Platte River led stagecoach king, Ben Holladay, to seek an alternative route for his stagecoaches. Eventually, the trail cut across the Colorado plains, north of Denver, entered Wyoming at Virginia Dale, and followed the old Cherokee Trail to Fort Bridger (Boyd 1946; Massey 1992a). Stage stations were built every 10 to 12 miles along the route to help maintain stock and horses, and to provide meals, and other services to travelers (Johnson et al. 2005). The Point of Rocks (also known as Rock Point or Almond) Stage Station is located south of the modern Jim Bridger Power Plant and is the only station located within the Project area. The station was listed on the NRHP in 1970 and has since been restored and interpreted for the public. The Proposed Route in Segments 3 and 4 would cross the trail and is approximately 2.4 miles north of the stage station.

- *Rock Springs to Superior Road* – The Rock Springs to Superior Road was built to link the coal-mining town of Superior with Rock Springs as part of the development and expansion of coal resources in southern Wyoming in the early twentieth century. Many new coal-mining sites were opened to serve growing western U.S. rail and industrial needs. The UPRR operated coal mines in several towns and locations around Rock Springs. Many of these mines were classic "company towns" with company-supplied housing, schools, and stores (Gardner 1991:1). Early prospecting in the Superior area was undertaken in the early 1900s and was supplied by wagons during this period.

  The road that appears on historic maps (such as the 1906 and 1908 General Land Office maps) is labeled the Rock Springs to Reliance Road, but it does not lead to the modern-day town of Reliance, which is located approximately 8 miles southwest of the road segment. Other General Land Office maps show this road extending south to eventually tie into roads that paralleled the UPRR, and extending north and east, eventually leading to the town of Superior. The Proposed Route in Segment 4, west of Superior, would cross this road.

- *Point of Rocks to South Pass Stage Road* – This was one of several roads connecting the mining communities at South Pass to the UPRR. It was the shortest and most direct route, but covered rough terrain (Darlington 2006). This made it a less favorable route compared to others, in particular the Bryan (and later Green River) to South Pass stage line. Still, the Point of Rocks to South Pass Stage Road was instrumental in establishing the communities in South Pass after the initial mining boom and it also serviced communities in the Wind River Valley (Darlington 2006). The Proposed Route in Segment 3 would cross the road near the Bridger Power Plant.
- *Rock Springs to Lander Stage Road* – The Rock Springs to Lander Stage Road (also known as the Rock Springs to Lander Stageline or Lewiston Stageline) was formally established in the 1880s as a military transport road from Rock Springs to the Wind River Reservation. The first commercial use of the route began in 1894 when the Rock Springs to Lander Stage Line was established by Rock Springs investors. The route connected the booming Sweetwater Mining District at South Pass to the UPRR in Rock Springs (Gardner 1982). The completion of the Chicago and Northwestern Railway to Lander in 1906 brought the stage coach service on this line to an end, although portions of it were and are still used by local traffic. The Proposed Route in Segment 4, north of Rock Springs on U.S. Highway 191, crosses the Stage Road. The entire resource is eligible for nomination to the NRHP.
- *New Fork Wagon Road* – The New Fork Wagon Road (also known as the Rock Springs to New Fork Wagon Road) was utilized during the late 1800s through the early 1900s. The road provided access from ranches and rural areas in Northern Sweetwater and eastern Sublette counties, to the UPRR railhead and trade center in Rock Springs (Vlcek 2008). The road was used to haul freight, mail, and passengers approximately 80 miles from Rock Springs to New Fork. Sublette County ranchers made annual supply runs to Rock Springs on the New

Fork Wagon Road to prepare for the winter. The trip crossed through sagebrush upland environments, which were generally devoid of water. Several stage stops were located along the wagon road (Vlcek 2008). The first stop was Fourteen Mile Hill at the base of White Mountain. In 1910, the road veered north from Rock Springs to Reliance and then onto the Wells, where the road split. One branch followed Washington Draw, the other branch continued to John Hay's Ranch (Vlcek 2008). The road re-converged and continued north to Eden and Farson, following the Big Sandy River, past the old Francis Place (a stage stop near the Sublette Cutoff). Approximately 15 miles north, a major wagon road junction was located at Ten Trees along the Big Sandy River. From there the road continued to Long Draw, the Mud Holes, and Sand Springs. North of Sand Springs, the road continued onto Two Elk Springs (48SU1407) and Grouse Springs (48SU1406) (Vlcek 2008). The New Fork Wagon Road represents a variety of important historic themes including transportation, colonization, homesteading, early commerce, and communication.

As of 2001, Wyoming SHPO has concurred that the entire resource is eligible for nomination to the NRHP. The resource would be crossed by the Proposed Route in Segment 4 of the Project.

- *Old Bryan Stage Road* – The Old Bryan Stage Road once connected two important travel and freight routes: the Rock Springs to Lander Stage Road and the Green River/Bryan to South Pass City Stage Road. The Bryan Stage Road (which is approximately 11 miles long) was named for Lieutenant Francis T. Bryan of the U.S. Army Corps of Topographical Engineers. Bryan, a prominent surveyor and explorer, served in the Mexican War, and later helped map new routes in Texas, Kansas, and Wyoming (Jackson 1952). The route split off from the Rock Springs to Lander Stage Road near Fourteenmile Gap and then followed a west-trending path to its junction with the Green River to South Pass City Stage Road. It is not known when the road was first used, and it does not appear as a named road until 1908, when it is shown on the General Land Office map for Township 21 North, Range 106 West.

  The arrival of the railroad brought about the creation of the Old Bryan Stage Road. The completion of the UPRR's line across southern Wyoming led to the establishment of railroad towns such as Bryan (also named for Lieutenant Francis Bryan), which quickly became important regional supply points (Larson 1978; Urbanek 1988). The road would be crossed by the Proposed Route in Segment 4.

- *Green River to South Pass Stage Road* – The Green River to South Pass Stage Road was a passenger and freight road that came into use in the early 1870s when the UPRR moved operations from Bryan to Green River City, both stops along the UPRR Main Line (Johnson 1998). Because large portions of the route are shared with the Bryan to South Pass Stage Road, the resource is alternately referred to as the Green River/Bryan to South Pass Road, Green River-South Pass City Stage Road, or Bryan-South Pass City Stage Road (Johnson 1998). The two stage roads share a common route throughout the study area. The

route was frequently used until 1906 when the Chicago and Northwestern Railway completed a line to Lander at South Pass, thus eliminating nearly all but local traffic on the road. The resource in its entirety has been determined NRHP eligible with SHPO concurrence. Segment 4 would cross the road approximately 0.4 mile northwest of the reported location of the Alkali Spring Stage Station, 10.4 miles north of where the Bryan to South Pass and Green River to South Pass stage roads merge.

- *Bryan to South Pass Stage Road* – The Bryan to South Pass Stage Road was a passenger and freight road beginning in the historic town of Bryan, which was a stop along the UPRR Main Line. It was developed in 1868 in response to the success of the Sweetwater Mining District at South Pass. The line was in direct competition with other roads and eventually faded out of popularity in the 1870s after the UPRR moved operations from Bryan to Green River (Johnson 1998). The Bryan to South Pass Stage Road meets the Green River to South Pass Stage Road near Alkali Creek, and it is here the two stage roads combine into a single road, historically continuing north to South Pass. The resource in its entirety has been determined NRHP eligible with SHPO concurrence. The Proposed Route in Segment 4 would cross the road just north of where the roads merge.
- *The 1849 Evans Cherokee Trail* – The 1849 Evans Cherokee Trail is a good example of a trail that evolved into a transcontinental route as a result of trapper, trader, and then emigrant use (Gardner et al. 2006). Although trappers and traders established early on some of the routes later incorporated into the larger trail, the 1849 Evans Cherokee Trail is best known for the numerous groups of Cherokees and others who took the trail west to reach the gold fields of California (Whiteley 2001). The trail was built north past the stage station at Virginia Dale, CO, to the Laramie Plains in southeastern Wyoming. The trail then proceeded westward/northward around the Medicine Bow Range crossing the North Platte River then turning north to present-day Rawlins. The Evans Route (North Route) went near present-day Rawlins and down into the Bitter Creek Valley in 1849 (Gardner et al. 2006:11-13, 16). This route in particular was continually used until the turn of the century by westward-bound stock drivers, emigrants, and travelers. The trail proceeded west along the route of present day I-80 finally joining the Oregon, California, and Mormon Pioneer NHTs near Granger, Wyoming. In 1850, an additional route (South Route) was made on the west side of the South Platte River, crossing the Cache la Poudre River, and then to the Laramie Plains. There the trail turned west near present-day Tie Siding and proceeded along the Colorado/Wyoming border to Green River and Fort Bridger, where it merged with the other emigrant trails (Fletcher et al. 1999).

  The Evans 1849 Cherokee Trail in its entirety is eligible for the NRHP but individual segments within the Project area have not been previously evaluated. The Proposed Route in Segment 4 would cross the trail approximately 4 miles east of Alkali Creek.

- *Opal Wagon Road* – The Opal Wagon Road (48LN949) is a regionally significant Expansion Era stage and freight road that served as a major transportation route in the Green River Valley. The road came into use around 1882 when the town of Opal became a rail stop on the Oregon Shortline (Rosenberg 1990). With the construction of the Oregon Shortline, Opal became a commercial and shipping center. The wagon road provided the shortest link with the upper Green River area (Rosenberg 1990). It was the predominant mail route in the late-nineteenth century until settlements with post offices grew along the New Fork Wagon Road (Vlcek 2008). The growing prominence of automobiles and concurrent decline in cattle drives eventually reduced Opal's importance as a commercial and shipping center.

  The route followed the Sublette Cutoff northward, diverging north of Names Hill to closely parallel the current route of U.S. 189 through La Barge, west of the Green River, through Midway, and onward to Big Piney. Today's Opal Cutoff (State Highway 230) roughly approximates the course of the historic Opal Wagon Road (Rosenberg 1990). By the 1940s, the road was mainly abandoned, although some modern streets incorporated sections of the old route (Murray 2002). The resource as a whole has been determined NRHP eligible by the BLM with SHPO concurrence as of 1988 (Currit 2009). This resource would be crossed by the Proposed Route in 4 and Alternative 4F.

Additional Historic Trail Resources

Additional trail resources that were established as freight or stage roads to serve as connectors between train towns and ranching or farming communities or military outposts were identified within the study area. Westward migration was not the primary purpose for many of these trails and several do not retain good physical integrity and are therefore not summarized herein. These trails include the Shirley-Medicine Bow Road (Proposed Route in Segment 1W), Baggs to Wamsutter Stage Road (Proposed Route in Segment 2), Desert Ranch Stage Road, Bitter Creek Stage Road (Proposed Route in Segment 3), Sublette Cutoff Trail-Westfall Hollow Stage Road (Proposed Route in Segment 4), and the Medicine Bow to Fort Fetterman Road.

Wyoming Agricultural/Animal Husbandry Sites

Homesteads, Ranches, and Sheepherding Camps

These cultural resources represent important parts of Wyoming's economic history. Cattle ranching started first in the area as early as the 1850s when Captain William Sublette and Jim Bridger began to supply cattle to emigrants and freighters at nearby military forts (Massey 1992b). The sheep industry began in 1865 when sheep drives started east from California (Rosenberg 1982). Both of these industries were highly competitive for ample range land, thus stimulating the sheep and cattle wars of the 1890s and early 1900s (Rosenberg 1982). Homesteaders came to the state in the late nineteenth century, struggled with farming practices, and therefore often opted to combine farming and ranching practices (Massey 1992c). The homestead era ended in 1934 when the Taylor Grazing Act reclassified the land and, by the 1930s, many of the original homesteads were abandoned or sold back to the government (Massey 1992c).

The farming and ranching industries still play a large part in Wyoming's economy and define the communities in the area today.

The majority of these resources are distributed between the Proposed Route in Segments 3 and 4. Besides two homesteads (described below), this category includes ranch houses, concrete and stone foundations, log cabins, dugouts, barns, sheds, smokehouses, cisterns, root cellars, corrals, cairns, stock pens, loading facilities, and watering facilities. Artifacts include domestic materials (glass, clothing items, ceramics, utensils, and food and beverage containers), farm and ranch equipment, wood piles, and fencing materials.

- *Rawlings Homestead* – The Rawlings Homestead site is the 1880s homestead of Frederick S. Rawlings, one of the earliest settlers of the Fossil area. Rawlings was a railroad worker, rancher, and one of two individuals responsible for laying out the town site of Fossil. In 1930 the homestead was sold to F.N. Steinhour, a shopkeeper in Fossil. Around 1944 the property was transferred to Melvin and Caroline Winter. By 1946 the homestead was abandoned, and today is owned by the Lewis family, whose ancestors were another pioneering family in the area.

  This site was previously recorded by L. McNees and B. McClelland (1991a) of Mariah Associates as MA597-41A for the Northwest Pipeline System Expansion Project. When the site was surveyed in 1991, it contained historic ranching and domestic debris and several collapsed and intact structures. Among these is the foundation of the original Rawlings house which burned ca. 1900-1902. Several standing structures remain on the property, including a later house and several sheds made of railroad ties. The resource as a whole has been determined NRHP eligible with Wyoming SHPO concurrence. This resource is located less than 0.25 mile from Alternatives 4B and 4C.

- *Lewis Homestead* – The Lewis Homestead is the 1885 home of Susanna and Richard Lewis, some of the first permanent settlers to the Fossil Butte area. They raised cattle and horses on the property up until ca. 1923. In 1902, they donated land for the Fossil town site, helping to foster community development in the area. The site consists of a log house, coal shed, animal shed and corral, an outbuilding of unknown function, and historic debris. All structures, except for the log house, are collapsed or partially dismantled. In 1941, the homestead was deeded to other Lewis family members and has remained in the family to the present day (McNees and McLelland 1991b). The site has been determined NRHP eligible with SHPO concurrence. This resource is located less than 0.25 mile from Alternatives 4B and 4C.

<u>Wyoming Energy Exploration/Resource Extraction</u>

Lumbering sites

In Wyoming, this category includes site types associated with the railroad tie industry that was active in the Project area in the Medicine Bow Range and the upper Green River area from 1867 through the 1940s and 1950s (Rosenberg 1999).

Wyoming Transportation

Historic Roads

- **Yellowstone Highway** – The Yellowstone Highway was one of the earliest automobile routes in the state. Connecting Denver to Yellowstone National Park, it opened in 1915 to help promote tourist travel to the park and help development of individual communities along the way (Francis 2004). In 1920, the Yellowstone Highway became the first highway to be dedicated as a National Park to Park Highway. The National Park to Park Highway system was designed as an auto road that would connect all of the national parks in the western U.S. (Rosenberg 2003). The Yellowstone Highway was designated U.S. 20 in 1926, and it was reconstructed as a modern highway as part of a national highway system during the middle to late 1920s (Rosenberg 2003).

  The Yellowstone Highway is eligible to the NRHP. The portion of the road in the Analysis Area was used until 1940 when U.S. 87 was constructed along a similar alignment (Francis 2004). Known features that are associated with the site include culverts, cattle guards, powerlines, buried pipes, fences, gates, berms, and a small bridge (Rosenberg 2003). The portion of the highway identified by the records search in the Analysis Area follows the Chicago, Burlington and Quincy Railroad grade and would be crossed by the Proposed Route in Segments 1E, 1W(a), and 1W(c).

- ***Lincoln Highway*** – The Lincoln Highway was established in 1913 as one of the first transcontinental automobile roads and extended from New York City to San Francisco. By 1925, the U.S. had many named highways. Each highway was marked with a specific color combination along the side of the road. However, this system proved to be confusing to many travelers because several highways often shared portions of the same route, making it difficult to identify individual highway routes (Longfellow 2008). As a result of this confusion, the federal government realized the necessity of having a uniform system to designate highways. The new system used even numbers to mark east-west running highways and odd numbers to mark north-south running highways, and was included in the Federal Highway Aid Act of 1925 (Rosenberg 2003). In 1926, the highway was renamed U.S. 30 but held its period of significance until 1956 when the development of the modern interstate system reduced its well-known identity to the average traveler (NPS 2004). In Wyoming, the road was developed through four different construction generations (1913, 1920, 1930, and 1940) that began near Pine Bluffs, stretched across the southern half of the state, very close to the modern I-80, then to Evanston, and continuing into Utah. Today, modern roads have been constructed over several of the Lincoln Highway segments in Wyoming.

  As a whole, the Lincoln Highway within Wyoming is eligible for NRHP nomination. The Proposed Route and Alternatives would cross the highway at 24 locations. Many of these potential crossings are located in the Proposed Route in Segments 2, 3, and Alternative 2A, in close proximity to I-80.

- **Kemmerer-Cumberland Road** – The Kemmerer-Cumberland Road was developed in the early 1920s and provided a service and transportation corridor for the Oyster Ridge Coal Mines and as a link between the Kemmerer-Diamondville center and surrounding communities (McNees 1993). By 1940, the Cumberland and Oyster Ridge mines were closed and the road became an occasional route for recreation and ranching use (McNees 1993).

  The Kemmerer-Cumberland Road is eligible to the NRHP. Many segments of the road that have been evaluated during other cultural resource inventories have been determined to be non-contributing. The segment that is identified in Alternatives 4B, 4C, 4D, and 4E has not yet been evaluated but is adjacent to another segment that supports the NRHP eligibility of the road (Stubbs et al. 2004).

Railroads

The construction of a transcontinental railroad during 1867 and 1868 helped to establish many of the largest cities in the state, such as Laramie, Rawlins, Rock Springs, and Evanston (Houston 1998). These cities grew from small railroad camps to large commerce centers. Feeder lines from other railroad companies contributed to urban development in other areas of the state by connecting products, supplies and people. Between 1881 and 1890, 70,000 miles of railroad were constructed nationwide (Gardner and Flores 1989). The cattle, sheep, and coal industries developed contemporaneously with this expansion and benefited greatly from the shipping services offered by the railroad.

The records search identified several railroad resources within the Project area, including the Burlington Northern railroad (Proposed Route in Segment 1W), Hanna town site (Proposed Route in Segment 2 and Alternative 2A), the UPRR (Proposed Route in Segment 3), and two segments of the Oregon Shortline Railroad (Proposed Route in Segment 4).

Wyoming Waterworks

The majority of the waterworks within the Wyoming Project area are small projects developed by private farmers to divert and store runoff for use during the dry season. Larger and more complex waterworks projects, such as the North Platte Project (originally the Sweetwater Project), were developed in the Project area as early as 1905 by the Bureau of Reclamation (BOR 2009a). This project was built to help store spring runoff and to control the release of water that now supports approximately 335,000 acres (from Wyoming to Nebraska) of productive farmland today (BOR 2009a). The Seedskadee Project, completed in 1964, is the most prominent waterworks project in the Project area (BOR 2009b). The project, largely consisting of the Fontenelle Dam, power plant, and reservoir, stores and regulates water from the Green River. Although the project was initially designed to address irrigation concerns, its goals were redirected prior to construction in 1964 to provide water for municipal and industrial water and for fish and wildlife (BOR 2009b).

Canals

In the late 1880s, large irrigation systems were built in Wyoming to supply water to large tracts of land allowing for the production of crops such as sugar beets, seed potatoes, alfalfa, and wheat (Reiss 2000). These irrigations systems often consisted of several large canals that not only contributed to increased agriculture but also encouraged additional settlement and development of many of the small towns that exist today in Wyoming (Thibodeau 1994).

- **Rawlins Wood Pipeline** – The Rawlins Wood Pipeline is a 35-mile-long gravity flow water line built in 1927 (Gardner 1982). It originated in the Sage Creek Basin, where it collected water from 25 different fresh water springs and then flowed north to Rawlins through a series of siphons. The engineering of the pipeline is representative of a distinctive type of construction considered that of a master craftsman (Gardner 1982). It also provides an excellent example of how water systems can function without the aid of fossil fuel energy (Gardner 1982). The pipeline was replaced in 1982 with a new pipeline, while leaving the original in place. Subsequent evaluations have discovered that some segments have been destroyed or completely removed (Hoefer 1999; Sanders 2007). The pipeline was believed to be intact in the Sage Creek Basin in 1996 (Rosenberg 1996).

Wyoming Historic Sites

Military Sites

The records search identified two military sites: Fort Fred Steele and a military stage trail, the Hay Reservation Road. Fort Fred Steele is listed in the NRHP, and the Hay Reservation Road is considered not eligible for listing in the NRHP.

- **Fort Fred Steele** – Fort Fred Steele was built in 1868 to help protect the workers from Indian attack while building the first transcontinental rail line and, later, to protect the railroad bridge over the North Platte River, which lay just east of the post. The fort was named for a minor Civil War figure, brevet Major General Frederick Steele. In 1886, the Army decommissioned the post and, by 1893, the land had been sold to private owners. A small community had developed around the fort during its years of operation and a network of roads led from the fort (and its railroad stop) to surrounding farms, ranches, and settlements. In 1895, the land on which the fort had stood was sold to the Cosgriff Brothers, for use in their sheep operations (Coutant 1899; Larson 1978). Even though many of the old fort buildings were destroyed in a fire sometime after the post was closed, some of the buildings and foundations survived and still exist today. The site was listed in the NRHP in April 1969 and is currently managed by the Division of State Parks, Historic Sites, and Trails as a Wyoming State Historic Site. The division is currently working closely with public interest groups to improve site preservation through stabilization, restoration, and improved interpretation. It is a marked tourism stop along I-80, approximately 12 miles east of Rawlins, and self-guided tours are allowed year-round. The resource is located 2.1 miles from the Proposed Route in Segment 2, 506 feet from Alternative 2A, and 0.4 mile from Alternative 2B.

Rural Sites
In Wyoming, a group of historic cabins were identified for the visual impact study conducted in 2008.

- **Historic Cabins** – These cabins are located approximately 2.25 miles west of the Proposed Route in Segments 1W(a) and 1W(c), north of Bates Creek Reservoir. No site records exist for this location at this time. These structures have not been previously recorded. These cabins were not formally evaluated during Phase I because they were located outside of the Project Class III Analysis Area; however, they have been included as part of the visual impact study for the Project. The location of the cabins and photographic documentation was forwarded to the Wyoming SHPO.

Idaho Historic Resource Overview

Previously recorded historic resources in the Idaho portion of the Project area (Segments 5 through 10) include all defined resource types except for Energy Development/Resource Extraction sites. Close to half of the historic resources identified are within the Historic Site type and almost 30 percent of the remaining sites are related to historic trails. Most of the historic trails are located in Segments 8 and 9.

Idaho National Historic Trail Resource Overview

Oregon NHT
The Oregon NHT enters Idaho from Wyoming, passing near present-day Montpelier and Soda Springs before reaching the Snake River near Fort Hall. The trail extends west along the south side of the river, passing the areas of Burley and Twin Falls before crossing the river at Glenn's Ferry. The Oregon NHT then continues northwest to Boise and west through the areas of Middleton and Parma before crossing the Snake River again into Oregon. As planned, the Proposed Route in Segment 4 would closely parallel and cross the Oregon NHT near Montpelier. The Proposed Route in Segments 7 and 9 would again approach and cross the Oregon NHT near the Raft River, while the Proposed Route in Segment 5 would cross the trail near Indian Springs. The Proposed Route in Segment 10 would cross the Oregon NHT near Hansen, while the Proposed Route in Segment 8 would cross the trail just east of Mountain Home and closely parallel the trail north of Mountain Home. South and west of Glenn's Ferry, just north of Upper Salmon Falls, the trail passes west of the Hagerman Fossil Beds National Monument. The trail at this location is considered to be a high-potential segment of the Oregon NHT (NPS 1998).

Alternative routes of the Oregon NHT followed the north side of the Snake River from a point north of American Falls to a junction just west of Mountain Home. These routes, known as the North Alternate and Northside Alternate Oregon Trail, are not part of the designated NHT and are described in the non-NHT trail section.

- **Thomas Fork and Big Hill** – Running through southeast Idaho, the Bear River presented a barrier to the emigrants traveling along the Oregon NHT. After crossing into Idaho, travelers were confronted with two obstacles. The first, Thomas Fork, was a low spot on the Bear River, where under the right conditions, wagons could cross. By the early 1850s, an entrepreneur had built

two bridges and was charging one dollar per wagon. Those who could not afford the fee had to travel downstream to find another low spot.

After crossing the river, emigrants ascended the Sheep Creek Hills. Wagons would first have to climb up the east face of the Big Hill, and then make an arduous dangerous descent down a steep rocky slope. Travelers wrapped ropes around trees in an effort to belay their heavy wagons, and furrows are still visible where wagons skidded and slid down the hill. Big Hill has been designated as a high-potential NHT site by the NPS (1998). This site is located 3.5 miles north of the Proposed Route in Segment 4.

- **Massacre Rocks** – The Massacre Rocks Site is named for two rock outcrops situated to the south of the Oregon NHT that leave just enough room for wagon passage (NPS 1998). The area was perceived as an ideal place for an Indian ambush and reputedly inspired fear among travelers. As emigrant traffic on the trail increased, there was a corresponding decrease in the report of skirmishes (Michno and Michno 2009). One of the last documented hostile encounters between immigrants and Indians in this part of Idaho occurred in the Massacre Rocks vicinity in 1862 (NPS 1998). The Oregon NHT adjacent to Massacre Rocks is currently listed in the NRHP and the property is currently maintained and managed as Massacre Rocks State Park. The Massacre Rocks Site has been designated as a high-potential NHT site by the NPS (1998). This resource is located approximately 4 miles southwest of Alternative 5D.
- **Parting of the Ways / Raft River Crossing –** This location along the Oregon NHT in Idaho is immediately west of the Raft River Crossing and consists of one of a few original wagon trails in the state. Here, emigrants bound for California would head south towards the Cassia Valley and the City of Rocks (NPS 1998). Those bound for Oregon would continue west over the rangelands to follow the Snake River. This resource is located approximately 0.5 mile south of where the Proposed Route in Segment 7 would cross the trail.
- **Rock Creek Station and Stricker Ranch** – Though this spot is best known first as a point on the Oregon NHT, and later as a stop along the Kelton Road, it had been frequented by Native Americans, fur trappers, and early western explorers (Wright 1972). In 1864, Ben Holladay won a contract to operate a mail and stage line from Salt Lake City to Walla Walla, Washington (Wright 1972). His company built a series of stations along the route, including one at Rock Creek (Planmakers 2001:5). In the following year, a store/trading post opened at the site, followed by a post office in 1871. In 1876, Herman Stricker and his business partner John Botzet bought the station, store, and other buildings at the site. Stricker had emigrated to the U.S. from Germany, served with Union forces during the Civil War, and then operated a commissary for railroad workers. In 1877, he became the postmaster at Rock Creek (Planmakers 2001:5). In 1884 he filed for the water and mineral rights for the site, and later homesteaded multiple parcels. Eventually he assembled an agricultural complex of more than 900 acres. In 1984, the Stricker family donated a 5-acre parcel containing the historic stage station to the State of Idaho (Planmakers 2001:5). The structures

located on this property have been listed in the NRHP since 1979. The resource has been designated as a high-potential NHT site by the NPS (1998). This resource is located approximately 3.2 miles north of the Proposed Route in Segment 9, 3.9 miles west of the Proposed Route in Segment 10, and 3.7 miles north of Alternative 7I.

- **Three Island Crossing** – This site is named for the presence of three islands extending across the Snake River that allowed travelers on the Oregon NHT to make smaller fords across the river at this location. Travelers commonly used the crossing until the 1869 construction of Glenns Ferry, located approximately 2 miles upriver. Although the crossing largely fell out of use at this time, some who could not afford the ferry fee continued to use Three Island Crossing (Fanselow 2001). The resource is currently maintained and managed as an Idaho State Park and has been designated a high-potential NHT site by the NPS (1998). Three Island Crossing is located approximately 2.7 miles northeast of the Proposed Route in Segment 9.
- **Canyon Creek Stage Station** – The Canyon Creek Stage Station is located 2 miles northeast of Segment 8 at Canyon Creek, 6 miles north of Mountain Home in Elmore County. This stage station was built in 1880 and was one of many stops later established along the Oregon NHT. A fire in 1970 destroyed part of the roof and wooden addition; however, much of the brick foundation still remains today (Mauser 2005). The resource has been designated as a high-potential NHT site by the NPS (1998). Canyon Creek Stage Station is located approximately 2.1 miles north of the Proposed Route in Segment 8.
- **Rattlesnake Station** – The self-described stagecoach king, Ben Holladay, built this stage stop in August 1864 to serve his Overland Stage Line. Passengers traveling between Salt Lake City, Utah, and Walla Walla, Washington, would stay at the station. As such, it became an important transfer stop for several lines that ran through it (ISHS 1984). Rattlesnake Station has been designated as a high-potential NHT site by the NPS (1998). This site is located 3.5 miles north of the Proposed Route in Segment 8.
- **Bonneville Point** – Bonneville Point is located approximately 10 miles east of the city of Boise, situated upon a high promontory overlooking the Boise River Valley. The point was named for Captain Benjamin Bonneville, whose fur-trading party first reached the area in May of 1833 (NPS 1998). Anecdote has it that the initial arrival of Bonneville's expedition here is when the name Boise was first derived, as members of his party (or, by some accounts, Bonneville himself) exclaimed, "…*les bois, voyes les bois*!" ("…the trees, look at the trees!"), upon first reaching the summit and looking down upon the Boise River Valley. The point represented the western terminus of the arid terrain of the Snake River Plain for westward travelers, and diary accounts suggest that the view from Bonneville Point was a welcome sight to emigrants for the duration of overland travel across the Oregon Trail (ISHS 2001). The resource is located 8.7 miles north of the Proposed Route in Segment 8, 7.7 miles north of Alternative 8B, and 8 miles north of Alternative 8C.

- **Oregon NHT, South Alternate** – At Three Island Crossing, some emigrants remained on the south side of the Snake River and followed the South Alternate Oregon NHT or Dry Route that continued west to the Oregon Territory. The trail rejoins the Oregon NHT beyond Fort Boise (Kreutzer 2008). Many chose this route if the water was too high at Three Island Crossing. In 1843, Overton Johnson and William H. Winter were among the first emigrants to travel on the South Alternate. They noted that the trail passed through the most "rugged, desert, and dreary country" (Hutchison and Jones 1993).

  Many portions of the route have been mapped from Three Island Crossing to the Idaho/Oregon border (Hutchison and Jones 1993). The trail passes by several locations and landmarks recorded by emigrants, including the Narrows, the Bruneau Sand Dunes, Castle Butte, Henderson Creek, and the site of the Utter Massacre. Several ferries crossed the Snake River from the South Alternate, including Walter's Ferry and Glenn's Ferry. The Sinker Creek segment of this trail, extending from 2 miles west of Castle Butte to 4 miles north of Murphy, Idaho, has been identified as a high-potential NHT trail segment by the NPS (1998). The resource is crossed by the Proposed Route in Segment 8 and Alternative 9D.

California NHT

The California NHT, like the Oregon NHT, was used by emigrants in the early 1840s to traverse the western expanses of the U.S. and settle on the west coast. The California NHT diverged from the Oregon NHT at Raft River, south of the Snake River. A portion of the trail overlaps with the Oregon NHT at American Falls. American Falls was one of the great natural wonders of the California/Oregon NHT became a favorite camping and resting spot for emigrants. This location is designated as a high-potential site for the California NHT (NPS 1998). The trail extended southwest, passing along the west side of the Jim Sage Mountains before entering the northwestern corner of Utah. The first wagons crossed this route in 1841 when a small group of travelers, led by mountain man Thomas Fitzpatrick, made the journey. At Soda Springs, Idaho, the group split into two parties, one continuing to Oregon and the other choosing a more southerly route. The discovery of gold in 1848 caused a mass migration along this trail and established it as a major transportation route to the southwestern coast (NPS 1998). More than 30,000 gold seekers traveled along the trail towards California, followed by 55,000 in 1850 (End of the Oregon Trail Interpretive Center 2008). Between 1849 and 1869, over 200,000 people used the trail (Unruh 1979). The Proposed Route in Segment 9 would cross the California NHT at Raft River, and the Proposed Route in Segment 7 would pass near the junction of the Oregon and California NHT.

- **Bartleson-Bidwell Route** – The Bartleson-Bidwell route was blazed by the first organized wagon train to travel overland from Missouri to California. Made up of 69 people, the group left Missouri in the spring of 1841, enticed by glowing accounts of life in California. The party elected John Bartleson captain, and picked John Bidwell, a 22-year-old school teacher, as secretary (Dary 2005:72). Bidwell, who kept a detailed journal of the trip, later became a prominent California farmer, soldier, and politician.

The Bidwell journal makes clear that none of the members of the party (including their captain) knew the route to California (Gillis and Magliari 2004: 41). The Bartleson-Bidwell party was fortunate in being able to join a group of Catholic missionaries (traveling to Oregon) led by Thomas Fitzpatrick, an experienced guide. The combined parties left Missouri on the path long used by fur-trappers and mountain men that became known as the Oregon NHT. At Soda Springs, Idaho, many members of the Bartleson-Bidwell group decided to follow Fitzpatrick on to Oregon. A group of 34 people, however, ignored Fitzpatrick's warnings against blazing a new route to California and struck out on their own (Dary 2005:74). The party faced many difficulties as it made its way across Utah and Nevada and across the Sierra Nevada Mountains. The travelers eventually abandoned their wagons, and packed their belongings onto the backs of the surviving oxen. On November 4, 1841, the tattered and nearly starving group arrived at John Marsh's Rancho Los Medano's, some 40 miles east of San Francisco (Driggs 1942:207). The Bartleson-Bidwell route is crossed by the Proposed Route in Segment 4.

- **Hudspeth's Cutoff** – Established in 1849, the Hudspeth Cutoff was a 110-mile-long trail that originated on the California/Oregon NHT, before the Parting of the Ways, and connected to the California NHT. The variant extends from Soda Springs west and southwestward to a point on the California NHT near present-day Malta in the Raft River Valley. This cutoff was originally used by a group of 250 people with 70 wagons from Missouri, led by Benoni Hudspeth and John J. Meyers. Instead of continuing on the main route, at Soda Springs the group headed west, determined to find a shorter route to the Humboldt River via this little known hunter's trail. The trail cut 25 miles from the trip but several long stretches lacked adequate water supplies and the route transverses four north-south ridge lines. Despite higher elevation and rougher terrain, this cutoff was used by most of the travelers on the northern California NHT and even some of the people on the southern Oregon NHT (ISHS 1964). The resource, as a whole, has been unevaluated for NRHP eligibility. Hudspeth's Cutoff is crossed by the Proposed Route in Segment 7 and Alternatives 7H and 7I.
- **Salt Lake Alternate** – Samuel Hensley pioneered this route in 1848. The route begins at the base of the Wasatch Mountains, "heading north, swinging through Ogden, crossing the Ogden River, and heading north to Utah Hot Springs and Brigham City. The Salt Lake Cutoff then turned northwest over Rattlesnake Pass and headed west across Curlew Valley. Passing Pilot Springs, Emigrant Spring, and Cedar Spring, the trail proceeded northwest into Idaho and the Raft River" (NPS 1998). The trail continued west through the Raft River Narrows, crossing the Upper Raft River Valley, into the Emigrant Canyon, and "intersected the main California NHT coming from the south at the western end of City of Rocks" (NPS 1998). The City of Rocks Complex is one of the great scenic and historic landmarks along the California NHT. This area of weathered granite formations was a major point of interest for emigrants. The reserve was established to "preserve and protect through cooperative efforts the scenic qualities and attributes of the California Trail landscape, historic rural setting, and granite

features" (NPS 2006). The Salt Lake Alternate at the City of Rocks Complex is considered to be a high-potential segment (NPS 1998). Members of the returning Mormon Battalion, who had just opened the Carson route of the California NHT, took their wagons over this route to Salt Lake City, thereby adapting the cutoff to wagon use. During the gold rush period, Hensley's Salt Lake Cutoff received heavy emigrant traffic (NPS 1998). The resource is crossed by Alternative 7I.

Idaho Non-National Historic Trails/Stage/Freight Roads Overview

- **Northside Alternate Oregon Trail** – Travelers leaving Fort Hall could elect to stay on the north side of the Snake River and follow a pathway frequented by Hudson Bay Company fur trappers. Before 1852, emigrants had to follow the south side of the Snake River, but the discovery and development of fords and ferries made it easier to cross the river (NPS 1998:71). This route became even more popular and easier when a wagon road was built from the ferry crossing at Thousand Spring in 1852. The Northside Alternate was shorter and more direct, and connected to other roads such as Marcus Whitman's Oregon Trail wagon road near Teapot Dome (Planmakers 1992:7). Little information has been located about this route. The NPS notes that few relevant diary entries exist and this has greatly hampered the process of researching and understanding this resource (NPS 1998:71). The route is crossed by Alternative 8A and the Proposed Route in Segment 8 and 10.
- *North Alternate Oregon Trail* – This variant of the Oregon NHT came into use after 1852 following the construction of a ferry above Salmon Falls on the Snake River (Hutchison and Jones 1993). It is estimated that over 15,000 emigrants utilized this trail between 1852 and 1854, during which time it became the most hazardous route through the state of Idaho. Over 50 people died and hundreds of cattle were lost due to inadequate and poisoned water sources. The remains of many of these unfortunate travelers are reputedly in several mass gravesites that line the route (Eichhorst 2010a). Between 1869 and 1879, the Kelton freight and stage line utilized portions of the route (Hutchison and Jones 1993), and much of the trail between modern day Pioneer Reservoir and the point where it rejoins the main route of the Oregon NHT coincides with the historic Kelton Road. The route has recently been delineated by Idaho OCTA members, who are also involved in the process of ascertaining NHT status for the resource (Eichhorst 2010a). Segments observed within the Analysis Area are in good to excellent condition and are assessed as contributing to the overall NRHP eligibility of the resource. The route is crossed by Alternative 5D and the Proposed Route in Segment 5 and 8.
- *Kelton Road* – Kelton Road measured 232 miles long with 19 waystations (Jones 1972). It extended from the railroad at Kelton, Utah, approximately 20 miles from Promontory, to Boise. This route was used to haul supplies to the mines in Idaho in the 1860s, and it followed portions of the older Oregon NHT and the North Alternate Route once it reached the Snake River area. The Proposed Route in Segments 7 and 10 would cross Kelton Road where it approaches the Snake

River. The Proposed Route in Segment 8 would cross Kelton Road where it followed the Oregon NHT east of Mountain Home.

- Pilgrim Stage Station – Pilgrim Stage Station sat along the Kelton Road, a route that linked Kelton, Utah and Boise, Idaho. The route partially followed the Salt Lake Alternate, a branch of the Oregon and Overland Trails (HRA 1996). The first stage company to use the road was the Holladay Overland Mail and Express Company, owned by Ben Holladay. The 240-mile route, which followed a path laid out by John Hailey in 1869, typically required a 40-hour trip to complete (HRA 1996). A series of stations were set up at 10 to 15 mile intervals where horses could be fed and watered. There were "home" stations built at 50- to 60-mile intervals that had sleeping and eating facilities (HRA 1996).

  The Pilgrim station was named for nearby Pilgrim Gulch, which offered Oregon NHT emigrants an area to rest their animals and obtain water from the Snake River, accessible via a steep slope 0.5 mile away. The stage station was built sometime in the early 1870s to serve the stages and freighters that used Kelton Road (Planmakers 1992). The remains of Pilgrim Station were surveyed in 1980 and it was reported that the remnants of a stone foundation were still in place (Martin 1980). The resource is located approximately 0.7 mile northeast of Alternative 8A and 1.4 miles north of Alternative 9B.

- *Toana Freight Wagon Road* – The Toana (also spelled Toano) Freight Wagon Road was used in the early 1870s to haul freight from Nevada to Boise and Idaho mining camps. This road runs north-south along the west side of Salmon Falls Creek in Twin Falls County, passing along the west side of Hagerman Fossil Beds National Monument. The Toana Road linked the town of Toano, Nevada, with southwestern Idaho. The route was first laid out in 1870, when surveyors mapped out a road that was 50 miles shorter than the existing road. The construction of the road is reported to have been managed by John W. Moffat, and the road was opened for traffic by the summer of 1870 (Gray 2005). The road had two branches: a western section that merged with the Oregon NHT at Glenn's Ferry near Tuano Gulch, and an eastern section that connected with the Kelton Road near the mouth of Salmon Falls Creek (Gray 2005). After the road was built, a series of stations were set up at 8- to 12-mile intervals where horses could be fed and watered. "Home" stations, which had sleeping and eating facilities, were also built at 50- to 60-mile intervals. The road was listed in the NRHP in November of 2006. The Proposed Route in Segment 9 parallels the road for approximately 3 miles and would cross the road just west of Salmon Falls Creek and Balanced Rock.

  - Coyote Spring Stage Station – The Coyote Spring Stage Station was located on the Toano (also spelled Toana) Road, a route that linked the town of Toano, Nevada with southwestern Idaho. The station was built sometime in the early 1870s to serve the stages and freighters that used Toano Road (Gray 2005). The site was located near Coyote Springs (sometimes referred

to as Yahoo Springs) which provided water. Little has been found about the facilities at the station, and it is not known if it was a "home station" (with sleeping and eating facilities) or a simpler stop for watering and feeding animals. The site of the station was surveyed in 1999, and the only remains that were found were two trash scatters (Dalmer 1999a, 1999b). The resource is located 1.1 miles south of Alternative 9B.

- *Dorsey's Road* – Dorsey's Road, also known as Grand View to Boise Road, ran from Dorsey's Ferry on the Snake River north past the present location of Indian Creek Reservoir. This road was apparently named for Dave Dorsey, a man who acquired a ranch on the Snake River in the 1870s, located just north of Grand View. Dorsey built a ferry at this location and the road leading from Boise to his ferry gave Boise businessmen a direct route to the railroad and mining camps in northern Nevada (Jones 1982a). The Proposed Route in Segment 8 would cross this road on the southeast side of Indian Creek Reservoir.
- *Boise City-Silver City Road* – The Boise City-Silver City Road was a wagon and stage route that ran between Boise and Silver City. Silver City, now a ghost town in Owyhee County, was established after 1863, and is located 15 miles east of the Idaho-Oregon line. Both gold and silver were mined at this location. Silver City was the county seat from 1866 to 1935. The road was in use as part of a major transportation corridor from 1864 to 1910. The Proposed Route in Segment 8, and likely the Proposed Route in Segment 9, would cross this historic route in Canyon County near Melba. The road is listed in the NRHP (ISHS 1971).
  - Walter's Ferry – Located near present-day State Highway 45 and State Highway 78, Walter's Ferry served the Boise to Silver City stage route from 1863, and helped miners, pack trains, and travelers cross the Snake River until 1921, when a steel bridge was built. In the summer of 1863, the Boise County Commissioners granted a license to operate a ferry to John Fruit, and he was allowed to charge a loaded wagon (with one team of horses) a 4-dollar fee, while a man and horse were charged one dollar each. The ferry was sold many times and had numerous owners and operators during the 58 years that it operated (Jones 1982b).

    Today, the old ferry master's house serves as a museum and the site is surrounded by modern roads and buildings. The original 1921 steel bridge still stands, but it has been superseded by a modern concrete structure (Idaho SHPO 1977). A large concrete parking area on the west bank of the river serves the nearby recreation area. Walter's Ferry is located 2 miles east of the Proposed Route in Segment 8 and 1 mile south of Alternative 8B.

Idaho Agricultural/Animal Husbandry Sites

- **Aguila Property** – The Aguila property is located within the Proposed Route in Segment 10 on U.S. Highway 30 near the Twin Falls Main Canal. The property consists of a Craftsman/Bungalow style residential building, several outbuildings, and an outhouse. It has been determined eligible for its contribution to the early agricultural history in the area.

- **A.J. and Lela Newman Water Tank, Well House, and Chicken House** – The A.J. and Lela Newman water tank, well house, and chicken house, was built in 1918 and is located within the Proposed Route in Segment 10. The site is 7 miles south of Shoshone, in Lincoln County. Andrew Jackson Newman was the mayor of Shoshone and owned a 400-acre sheep ranch in Lincoln County. Besides its association with a locally well-known historic person, the site is eligible for its contribution to early agricultural history in the area.
- **Wendell Trail Stock Driveway** – The Wendell Trail Stock Driveway, located between the towns of Wendell and Gooding, was used to herd large numbers of cattle and sheep to stockyards or railroad sidings. The driveway tied into the Wendell-Shoshone Sheep Trail, and apparently extended northeast to the town of Shoshone in Lincoln County. The Proposed Route in Segment 8 would cross the stock driveway at a point several miles east of State Highway 46.

Idaho Energy Exploration/Resource Extraction

Power Transmission Sites

- Site 10PR682 is the remnant of a former transmission line located along the eastern side of State Highway 37 and paralleling the highway for approximately 14 miles south of Rockland. Seven discrete locations define the site, each consisting of one or more bases of sawn-off, wooden poles. Glass insulators present at several of the locations suggest 1893 to 1923 use. Alternatives 7A and 7B would cross this former transmission line.

Idaho Transportation

Historic Roads

The cultural records search identified the following modern roads that have been recorded as historical sites, including U.S. Highway 30 (10BL39), U.S. Highway 93 (10TF1646), and the Yellowstone Highway (now replaced by U.S. Highway 91). The Proposed Route in Segment 4 would cross U.S. Highway 30 in three locations near Montpelier, in Bear Lake County. The Proposed Route in Segment 9 would cross U.S. Highway 93 north of Hollister in Twin Falls County. The Proposed Route in Segment 4 would cross the Yellowstone Highway, also known as U.S. Highway 91, southeast of Downey, in Bannock County.

Bridges

- **Twin Falls Main Canal Bridge** – The Twin Falls Main Canal Bridge, built in 1903, is located on U.S. Highway 30 within the Proposed Route in Segment 10, approximately 10 miles east of Twin Falls. It is NRHP eligible as a principle component of the Twin Falls Southside Project, an early large-scale irrigation system connected to the Snake River (Leary 2003).
- **Rabbit Creek Bridge** – The Rabbit Creek Bridge, built in 1956, is located within the Proposed Route in Segment 9 on State Highway 78 at Murphy in Owyhee County. The bridge is NRHP eligible as a good example of 1950s stringer/girder construction (Gray 2003).

Railroads

- **Oregon Short Line** – The Oregon Short Line Railroad was established in April 1881 to provide a standard gauge railway from Granger, Wyoming, to Huntington, Oregon. The railroad line was completed to the Idaho-Oregon border by 1884, connecting to the Oregon Railway & Navigation Company line. The Oregon Short Line Railroad eventually assumed control of the Oregon Railway & Navigation Company and in turn was taken over by UPRR, giving UPRR a direct line to the Pacific coast. The Proposed Route in Segments 6, 8, and 10 would cross the Oregon Short Line Railroad.
- **UPRR** – Segments of railway identified in the cultural record search as UPRR lines, located south of Twin Falls, are branch lines that extend south of the old Oregon Short Line route, crossing the Snake River at the town of Burley. The Proposed Route in Segments 9 and 10 would cross these lines.
- **Salt Lake & Idaho Railroad** – The segment of abandoned railroad grade identified as the Salt Lake & Idaho Railroad Company line connected to the UPRR/ Oregon Short Line east of Burley and passed south through the Raft River Valley into Utah. The Proposed Route in Segment 9 would cross the Salt Lake & Idaho Railroad at State Highway 81, just south of the intersection of I-84 and U.S. Highway 30.

Idaho Waterworks

Waterwork sites identified within the Proposed Route in Segment 8 include several structures at Indian Creek Reservoir, south of Boise. Specific features at Indian Creek Reservoir that have been recorded as historic sites besides the reservoir itself include the spillway, the dike, and a drain culvert. Other water-supply features in the Ada County area recorded as historical sites include a drop structure and head gate on the Butte Lateral canal, a crosscheck structure on the Waldvogel Canal, and a drop structure on the South Power Lateral.

Canals

The cultural files search identified several canal sites within the Idaho Project area. These include water conveyances known as the Twin Falls Main Canal, Milner Gooding Canal, A Coulee Canal, High Line Canal, X Canal, Portneuf Marsh Valley Canal, and Bear Lake Outlet Canal. The Proposed Route in Segments 8, 9, and 10 would cross several other unnamed or unidentified canals.

Idaho Historic Sites

Military Sites

- **Minidoka National Historic Site** – The NPS established the Minidoka National Historic Site in 2001 to commemorate the Japanese-Americans who were interned there during World War II. It is located 1 mile east of the Proposed Route in Segment 10, between Idaho Falls and Jerome. Between 1942 and 1945, it eventually contained over 600 buildings with a total population of 13,000 internees (NPS 2003). The camp was historically part of one of the largest forced relocation orders in U.S. history (NPS 2003). Since 2003, former internees and their families make yearly pilgrimages to the camp to reunite the

community. In May 2008, P.L. 110-229 established the Minidoka National Historic Site. At that time, the name changed and the boundary expanded to 300 acres.

Urban Sites

- **Owyhee County Courthouse** – The Owyhee County Courthouse was built in 1936 and listed in the NRHP in 1982 for its architectural significance. It represents modern movement architectural style made popular during the years of 1925 to 1949. The courthouse is a single-story, brick and concrete Art Deco structure with a cast concrete square arch entryway and broadly fluted pilasters, and it is still used today. The courthouse is located within the Proposed Route in Segment 9.

- **Our Lady, Queen of Heaven Catholic Church** – Our Lady, Queen of Heaven Catholic Church is located 1 mile south of the Proposed Route in Segment 9, in Owyhee County, in the small town of Oreana. The church, built in 1883, is a single-story structure of mortar and lava rock with a gabled roof. In the 1960s, the building went through a series of renovations, but the historic character has been retained. It is considered an exceptional example of local masonry efforts in the area and was listed in the NRHP in November 1980 (Arrington 1994).

Rural Sites

- **Hollister School** – In 1904, H.L. Hollister, a land agent and developer, founded the small town that eventually bore his name. Hollister saw an agricultural future for the area using water from the Salmon Tract irrigation system that I.B. Perrine developed in 1910 when he set up the Salmon River Canal Company to manage the Salmon Falls Dam and Reservoir. Between 1909 and 1919, the town increased in size and several businesses opened, including hardware and dry goods stores, a hotel, and a bank. Burton Morse built the school in 1925 to compete with nearby towns and to retain its status as an important trade center (Arrington 1994). The school is located 3.25 miles south of the Proposed Route in Segment 9. Hollister School was listed in the NRHP in 1991.

- **Red Rock Pass Cemetery (Jefferson Hunt Memorial)** – The Red Rock Pass Cemetery (also known as the Jefferson Hunt Memorial) is a small cemetery containing the graves of Jefferson Hunt along with several members of his family. Hunt was a key figure within the Mormon community, serving as a major in the Nauvoo militia and as one of Joseph Smith's body guards. Hunt was instrumental in organizing and leading a party of travelers to establish an easier southern route to California. After traveling to California on the Old Spanish Trail, he returned to Utah and moved with his family to Provo where he helped to construct Fort Utah in the spring of 1849. It was at the end of 1849 that Hunt led the emigrant party of gold seekers, known as the Death Valley 49ers, along the new south route to California. During most of the 1850s, Hunt lived in California, helping to establish a Mormon colony there. He was a California State Assemblymen and a General in the California State Militia (Elliot 1955).

  The surnames represented at the cemetery include Barger, Hunt, Norton, Pratt, and Sepdell, with several grave markers being unreadable or missing. Besides

Jefferson Hunt, other members of his immediate family include one of his wives, children, several grandchildren, son-in-laws, daughter-in-laws, and other in-laws (Cemeteries of Bannock County Idaho 2009). A memorial marker, erected in 1950 by the Utah Pioneers Trails and Landmark Association and Jefferson Hunt's descendents, is also present at this location. The resource is located 2.2 miles south of the Proposed Route in Segment 4.

Nevada Historic Resource Overview

One eligible historic resource, a segment of the California NHT, has been previously recorded within the Project area in Nevada. The NHT is located approximately 2 miles south of the Project within the Visual Analysis Area for Alternative 7I/7J.

Nevada National Historic Trail Resource Overview

California NHT

The California NHT enters Nevada 2 miles south of its northeastern corner. The route follows Goose Creek, crosses Hardesty Creek, and then exits the Project area near Nile Spring. The portion of the trail in the Project area is part of a segment of the California NHT known as the Granite Pass to Humboldt River route. This route has been designated a high-potential segment by the NPS (1998). The California Trail Back Country Byway, from Goose Creek to U.S. Highway 93, parallels portions of this segment of the NHT.

- **Granite Pass to Humboldt River** – The Granite Pass to Humboldt River segment of the California NHT was established in 1842 by Joseph B. Chiles, who was joined by members of the Bidwell party to find a passable route to California (ISHS 1995). In 1842, on a return trip from California, Chiles decided on a route that avoided the Bonneville Salt Flats and traversed farther north through Granite Pass and City of Rocks. In the summer of 1843, Chiles was headed back to California on this same route but his party, led by Joseph R. Walker, took the wagon train down Goose Creek and then up through Granite Pass (ISHS 1995).

Phase I Fifteen Percent Sample Cultural Resources Surveys

Wyoming

Pedestrian cultural resources inventories were conducted for a 15 percent sample of the route resulting in 94 1-mile-long and 500-foot-wide segments of the Project area in Wyoming. As a result of the cultural resources inventory, 40 archaeological sites were identified. The BLM Kemmerer FO provided data on percentages of previously inventoried portions of the Segment 4 Proposed Route and Route Alternatives within that jurisdiction, and known cultural resources within a 500-foot-wide corridor equivalent to the Phase I sampling in other segments. The outcome of this analysis is summarized in Table 3.3-5.

Visual impacts to several historic trails in the study area were assessed for this environmental analysis. The Phase II Class III cultural resources inventory will provide additional detailed information to assess impacts on these and other trails in the Project area.

Table 3.3-5. Summary of Previous Survey Coverage in Segment 4, Wyoming

Route	Length (mi)	Survey Coverage (%)	Sites
Proposed	70	10.7	20
Alternative 4A	65	16.6	29
Alternative 4B	83	18.6	23
Alternative 4C	84	17.8	26
Alternative 4D	83	17.8	22
Alternative 4E	85	17.0	23
Alternative 4F	68	14.4	24

Idaho

Pedestrian cultural resources inventories were conducted for a 15 percent sample of the route resulting in 190 1-mile-long and 500-foot-wide segments of the Project area in Idaho. A total of 131 archaeological sites were identified.

Nevada

Pedestrian cultural resources inventories (a 15 percent sample) were attempted for the Nevada portion of Alternative 7I/7J but the attempt was abandoned due to snow. Surveys are planned for the 2011 field season (prior to completion of the Final EIS). One site was documented along the Nevada portion of Alternative 7I/7J.

3.3.3 Direct and Indirect Impacts

This section is organized to present impacts to cultural resources from construction, followed by operations and maintenance activities, and decommissioning for the proposed Project. Unlike pipelines and other linear projects that disturb the entire ROW, transmission line construction disturbance is generally limited to construction of new service roads and pads for the transmission structures and can avoid many resources. For the purposes of this EIS, direct impacts to cultural resources are estimated based on preliminary locations of ground-disturbing activities. The agencies would require pedestrian surveys to be conducted for the entire Preferred Alternative ROW, with a buffer, to allow for micrositing within the ROW to avoid or minimize direct impacts to cultural resources where found. The results of the analysis of direct impacts are addressed in Section 3.3.3.2.

Although tower locations can be shifted somewhat along the centerline, and roads can be realigned, especially in more gentle terrain, the centerline of the route was established based on an analysis of multiple resources, and its location reflects avoidance of many important resources, in addition to cultural resources. For the purposes of this EIS, the indirect visual impacts of the proposed transmission line were estimated by using the location of the centerline and the average tower height and spacing. While direct and indirect impacts may be reduced in some limited individual cases by shifting tower locations, in general the visual impact of a very large high-voltage transmission line is perceptible across a broad extent of landscape, such that moving towers along the centerline does not substantially reduce the indirect impact. The results of the analysis of indirect impacts are addressed in Section 3.3.3.3. Overall

impacts to cultural resources by route alternatives are analyzed in detail in Sections 3.3.3.4 and 3.3.3.5.

There is a Design Variation involving use of two single-circuit structures proposed by the Proponent for Segments 2, 3, and 4 (see Section 2.2 for details), which is analyzed in Section 3.3.3.6 and a Structure Variation that is analyzed in Section 3.3.3.7. The Proponents have also proposed a Schedule Variation, analyzed in Section 3.3.3.8, in which one of the two single circuits to be constructed in Segments 2, 3, and 4 and a portion of Segment 1W would be built on an extended schedule with construction beginning approximately 2.5 years after completion of the initial construction.

3.3.3.1 No Action Alternative

The No Action Alternative states that the agencies would not issue a permit for the construction or operations of the Project on federally managed lands. No impacts would occur to cultural resources identified in this EIS.

3.3.3.2 Impacts Common to All Action Alternatives

Construction

Construction of the transmission line and its ancillary facilities could directly impact existing cultural resources, such as prehistoric or historic archaeological sites, districts, buildings, trails, roads, and landscapes. Construction or other ground-disturbing activities could directly or indirectly impact previously undetected cultural resources, especially buried resources. Such impacts are likely to be adverse. Identification of new or previously recorded cultural resources and increased use of existing and new access roads may encourage unauthorized site access, artifact collection, and vandalism. Impacts on the setting and feeling for cultural resources may be introduced through the addition of structural elements to the landscape. Construction of transmission line towers introduces an indirect (visual) impact upon existing cultural resources, especially historic trails. Because of the abundance and importance of historic trails in the region, these visual impacts are accorded a separate discussion in Section 3.3.3.3.

The Proponents have proposed the following EPM should eligible resources be adversely impacted (Appendix C-1, Attachment D):

CUL-5 If construction will adversely affect any properties listed on, or eligible for listing on, the NRHP, mitigation will be required. Mitigation may include, but not be limited to, one or more of the following measures: a) avoidance through the use of relocation of structures through the design process, realignment of the route, relocation of temporary workspace, or changes in the construction and/or operational design; b) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures; and c) the use of landscaping or other techniques that will minimize or eliminate impacts on the historic setting or ambience of standing structures.

This mitigation measure would avoid potential direct impacts to cultural resources if relocation of Project features is possible. The Agencies would require the Proponents to revise the siting of ground-disturbing activities to avoid or minimize impacts to cultural resources. If avoidance is not feasible, this measure would minimize potential impacts through recovery and documentation of archaeological sites and the use of techniques to restore the visual setting of standing structures. In addition, the following EPMs have been proposed by the Proponents:

CUL-1 All work conducted under the Cultural Resources and Paleontological Monitoring and Mitigation Plan will be performed by qualified paleontologists and archeologists with trained assistants.

CUL-2 An Unanticipated Discovery Plan will be included as part of the Cultural Resources and Paleontological Monitoring and Mitigation Plan. This plan will specify what steps will be taken if subsurface cultural resources are discovered during construction, including stopping construction in the vicinity of the find, notification of the appropriate land management agency, identification of a qualified archaeologist or paleontologist to conduct an evaluation of the find, and the development of an approved data recovery program or other mitigation measures.

CUL-3 The Cultural Resource and Paleontological Monitoring and Mitigation Plan will include provisions for the preparation for the preparation and curation of any fossil collections from federal lands and for the preparation of a final report based on the data recovered for activities on federal lands.

CUL-4 Literature reviews and Class III surveys will be completed for cultural resources. A literature review will be conducted on public and private lands and will cover a study area of one-half mile on either side of the proposed and alternate transmission line alignments as well as areas identified for use as staging areas and access roads. Class III surveys covering a 500-foot-wide area centered on the transmission line will be conducted on 100 percent of federal and state lands, and for those private lands for which survey access is granted, prior to the completion of the NEPA process. A good-faith effort will be made to obtain survey permission prior to the completion of the NEPA process.

CUL-6 Avoidance areas will be flagged prior to construction activities. Flagging will be removed once construction is completed in an area.

CUL-7 To minimize unauthorized collecting of archaeological materials or vandalism to known archaeological sites, all workers will attend mandatory training on the significance of cultural resources and the relevant federal regulations intended to protect them.

CUL-8 If human remains are discovered, construction will be halted and the county coroner will be notified. If human remains of Native American origin are discovered, or if associated grave goods or objects of cultural patrimony are discovered on lands managed by a federal agency, the provisions of NAGPRA will be followed.

The regulations governing compliance with the NHPA allow for the development of a PA to "govern the implementation of a particular program or the resolution of adverse effects from certain complex project situations (36 CFR Part 800.14(b))." Given the complex nature of the proposed Project and the Route Alternatives being considered, together with the likelihood of adverse effects on historic properties, the BLM is developing a PA, in consultation with the ACHP, the affected SHPOs, affected Tribes, the Project proponents, and other interested parties, to take into account adverse effects on historic properties. The PA spells out the terms of a formal, legally binding agreement among the state and federal agencies involved in the Project, including the BLM, the Forest Service, the NPS, state SHPOs, and the ACHP. The PA covers the following elements:

- Establishes the Area of Potential Effect (APE) for direct, indirect, and cumulative effects,
- Provides for amending the APE if the Project changes,
- Specifies how historic properties will be identified and evaluated using a phased approach and how effects to those properties will be determined,
- Identifies the process for reporting, consultation, and review of documentation,
- Addresses the development of Historic Properties Treatment Plan with mitigation plans for specific properties within it. to provide for the resolution or mitigation of effects to historic properties as a result of the Project,
- Provides for the inadvertent discovery of cultural resources or human remains,
- Details curation requirements,
- Specifies how construction activities may proceed given the phased nature of identification, evaluation, and treatment of historic properties, and
- Discusses how consultation will be conducted.

The ACHP has formally indicated its interest in the Project and is an active participant in the crafting of the PA. The BLM anticipates that a fully executed PA will be completed before the publication of the Final EIS and must be in place prior to signing the ROD.

In addition to the preparation of a PA, the Agencies will require the implementation of the following mitigation measures:

CR-1 (for historic properties in all segments)

- Avoid direct impacts by designing the route so that no Project facilities, including access roads, are placed within the boundaries of historic properties.
- Should avoidance of historic properties not be feasible, assess adverse effects and develop one or more mitigation measures to address all unavoidable adverse impacts.

CR-2 (for historic trails and other linear routes in all segments)

- Design the transmission line to cross where existing development occurs.
- Cross the resource as close to a 90-degree angle as possible using a dog-leg or S curve.
- Adjust tower placement to use the maximum span distance to achieve maximum tower distance from the linear resource.
- Avoid paralleling the linear resource as much as possible and obtain maximum tower distance by shifting alignment and maximize topographic screening with lower structures, such as the two single-circuit steel-lattice design alternative.

CR-3 Compensatory Mitigation Measures – The BLM, in consultation with the Wyoming, Nevada, and Idaho SHPOs, and consulting parties is developing a PA and a Historic Properties Treatment Plan. Compensatory mitigation measures may be developed as appropriate for specific historic resources. The following example measures may be considered for adversely affected properties, or other measures required:

- Fund or provide interpretive, educational exhibits placed in museums or nearby interpretive centers.
- Develop an illustrated guide to the regional archaeology and history, which would present the results of the Project's archaeology/history in layperson's terms for the general public.
- Provide new markers for the BLM and other public groups to position along historic trails, highways, and other linear resources.
- Fund or provide outdoor, interpretive wayside exhibits along access points to trails, highways, and other linear resources
- Fund or provide educational films or curriculum for area school districts about the history and significance of the linear resources.
- Acquire or trade land with willing seller(s).
- Preserve landscapes from a cultural landscape perspective.
- Bury elsewhere other (non-Project) lower kilovolt transmission or distribution lines.
- Commission studies of associated historic sites along the corridor to support a regional context.
- Re-vegetate disturbed areas to protect or restore viewsheds.
- Provide monetary support to historic trail-related state parks.

CR-4 Conservation Easements – Where feasible and appropriate, conservation easements will be considered to preserve important archaeological and historic sites, and high integrity linear resource segments, or to preserve

viewsheds. A conservation easement (sometimes called a conservation covenant) creates a legally enforceable land preservation agreement between a landowner and a government agency (federal, state, county, or municipality) or a qualified land protection organization ("land trust") for the purposes of conservation. It restricts real estate development, commercial and industrial uses, and certain other activities on a property to a mutually agreed upon level. The property remains the private property of the landowner.

CR-5 On NFS lands, a management plan should be developed for each historic property nominated to the NRHP. The plan should be drafted during the nomination process. The National Heritage Strategy should be used to guide decisions on issues related to the Heritage Program.

Operations

Once the transmission line has been constructed, the presence of large transmission towers would introduce long-term visual impacts. The actual impacts on historic resources are described in detail below in the segment-by-segment analysis of the Proposed Route and Route Alternatives.

The Proponents have proposed the following design features to minimize visual impact:

- A surface finish for each galvanized steel lattice tower (single or double circuit) to produce a dulled finish that reduces surface reflectivity;
- A surface finish for each single circuit weathered steel pole H-frame, which forms a rust-like appearance that can blend into some landscapes; and
- Conductors for the 500-kV and 230-kV lines that are made of aluminum/steel stranding with a non-specular or diffuse finish.

Maintenance

Periodic access to the transmission line ROW is required to maintain its operating function. Thus, access roads would be kept open, at least at a two-track level, which increases the potential for vandalism and illicit collection.

Decommissioning

Impacts from decommissioning would be similar to those for construction. No EPMs are provided by the Proponents to address decommissioning; however, the EPMs proposed by the Proponents for construction would be applicable and would be generally effective at reducing the potential for adverse impacts.

3.3.3.3 Visual Impacts of the Proposed Route and Alternatives by Segment

Section 3.3.2.4 explains the structure and methods for establishing the visual contrast level. Visual impacts from each KOP were assessed for both the proposed Project segments and alternatives. Analysis of the cultural setting, specific to each resource, is also assessed at each KOP location with respect to the visual impact analysis. Impact recommendations will be addressed below in the segment-by-segment analysis.

The results of the impact analysis are summarized in Table 3.3-6. “VS” indicates the KOPs that include a photographic simulation. These photographic simulations are assembled together in Appendix E (Figures E.3-12 through E.3-56).

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segments 1W(a), 1W(c), 1E, and Alternatives 1E-A, 1E-B, 1E-C, and 1W-A							
Rock Creek and Fort Fetterman Road							
C43	WY	Alt. 1E-B	3.3-1 — 3.3-2	Twentymile Draw	4.1 from Alt. 1E-B	Weak to Moderate	Adverse impact
Oregon NHT							
C48	WY	Seg. 1W(a), Alt. 1W-A, Seg. 1W(c), Seg. 1E, Alt. 1E-A	3.3-3 — 3.3-5	North Platte River	1.6 from Seg. 1W(a) and Alt. 1W-A, 1.1 from Seg. 1W(c), .01 from Seg. 1E and Alt. 1E-A	Weak	No adverse impact
California NHT							
C47	WY	Seg. 1W(a), Alt. 1W-A, Seg. 1W(c), Seg. 1E, Alt. 1E-A	3.3-6 — 3.3-8	Alvah Unthank Grave	2.6 from Seg. 1W(a), 0.6 from Seg. 1W(c), 2.0 from Seg. 1E, Alt. 1E-A and Alt. 1W-A	Weak	No adverse impact
California NHT – Child's Cutoff							
C45	WY	Seg. 1W(a), Seg. 1E	3.3-9 — 3.3-10	North of Big Muddy Oil Field	2.4 from 1W(a), 3.1 from 1E	Weak to Moderate	Adverse impact
C49	WY	Seg. 1W(a), Alt. 1W-A, Seg. 1W(c), Seg. 1E, Alt. 1E-A	3.3-11 — 3.3-14	East of Monkey Hill	0.45 from Seg. 1W(a), 2.0 from Alt. 1W-A, 3.1 from Seg. 1W(c), 2.0 from Seg. 1E, 2.4 from Alt. 1E-A	Weak	No adverse impact
Historic Resource							
C98	WY	Seg. 1W(a), 1W(c), Alt. 1E-C	3.3-15 — 3.3-16	Historic Cabin	2.0 from Seg. 1W(a), 2.3 from Seg. 1W(c), 1.7 from Alt. 1E-C	Moderate	Adverse impact
Segment 2 and Alternatives 2A, 2B, and 2C							
Rawlins to Fort Washakie Stage Road and Freight Road							
C19	WY	Seg. 2	3.3-17 — 3.3-18	NE Rawlins	4.4 from Seg. 2	Weak	No adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 2 and Alternatives 2A and 2B (continued)							
Lincoln Highway							
C2	WY	Seg. 2, Alt. 2A and 2C	3.3-19 — 3.3-20	Hanna – Saint Mary's Creek	0.6 from Seg. 2, 1.2 from Alt. 2A, 2.8 from Alt. 2C	Weak to Moderate for Seg. 2 and Alt 2A, Weak for Alt. 2C	Adverse impact for Seg. 2 and Alt. 2A, No adverse impact for Alt. 2C
C3	WY	Seg. 2, Alt. 2A and 2C	3.3-21 — 3.3-23	Hanna	0.9 from Seg. 2, 0.4 from Alt. 2A, 2.8 from Alt. 2C	Moderate to Strong for Seg. 2, Weak to Moderate for Alt. 2A, Weak for Alt. 2C	Adverse impact for Seg. 2 and Alt. 2A, No adverse impact for Alt. 2C
C4	WY	Seg. 2, Alt. 2A and 2C	3.3-24 — 3.3-25	Hanna	0.4 from Seg. 2, 0.5 from Alt. 2A, 3.5 from Alt. 2C	Moderate for Seg. 2, Weak to Moderate for Alt. 2A, Weak for Alt. 2C	Adverse impact for Seg. 2 and Alt. 2A, No adverse impact for Alt. 2C
C20	WY	Seg. 2	3.3-26	Rawlins-Hogback Lake area	3.0 from Seg. 2	Weak	No adverse impact
Rawlins to Baggs Stage Road							
C1 (VS)	WY	Seg. 2	3.3-27 VS E-12 — E-13	Sixteenmile Draw	0.9 from Seg. 2	Moderate to Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 2 and Alternatives 2A and 2B (continued)							
Historic Resource							
C51 (VS)	WY	Seg. 2, Alt. 2A and 2B	3.3-28 VS E-14 — E-16	Fort Fred Steele	2.1 ft from Seg. 2, 506 ft from Alt. 2A, 0.4 from Alt. 2B,	Weak to Moderate for Seg. 2, Moderate for Alt. 2A and 2B	Adverse impact
Segment 3							
Lincoln Highway							
C52	WY	Seg. 3	3.3-29	East Desert Ranch Road	0.4 from Seg. 3	Moderate	Adverse impact
C53	WY	Seg. 3	3.3-30 — 3.3-31	Bitter Creek area	0.4 from Seg. 3	Moderate to Strong	Adverse impact
Segment 4 and Alternatives 4A, 4B, 4C, 4D, 4E, and 4F							
Rock Springs to Lander Stage Road							
C13	WY	Seg. 4	3.3-32	NE of Fourteen Mile Ranch	0.6 from Seg. 4	Weak	No adverse impact
C14	WY	Seg. 4	3.3-33	SE of Fourteen Mile Ranch	1.1 from Seg. 4	Weak	No adverse impact
New Fork Wagon Road							
C15	WY	Seg. 4	3.3-34 — 3.3-36	White Mountain area	1.0 from Seg. 4	Weak to Moderate	Adverse impact
Green River to South Pass Stage Road							
C40 (VS)	WY	Seg. 4	3.3-37 VS E-17— E-18	Alkali Creek	702 ft from Seg. 4	Moderate to Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 4 and Alternatives 4A, 4B, 4C, 4D, 4E, and 4F (continued)							
1849 Evans Cherokee Trail							
C12	WY	Seg. 4	3.3-38	Near Blue Rim Road	2.9 from Seg. 4	Weak to Moderate	Adverse impact
C16	WY	Seg. 4	3.3-39 — 3.3-40	NE of Skunk Canyon	0.6 from Seg. 4	Weak	No adverse impact
C18	WY	Seg. 4	3.3-41	Skunk Canyon	0.4 from Seg. 4	Weak	No adverse impact
Oregon / California NHT							
C27	ID	Seg. 4, Alt. 4A, 4B, 4C, 4D, 4E, and 4F	3.3-42 — 3.3-44	Thomas Fork and Big Hill	1.6 from Seg. 4, 1.9 from Alt. 4B, 4C, 4D, and 4E, 1.8 from Alt. 4A and 4F	Weak to Moderate	Adverse impact
C35	WY	Seg. 4, Alt. 4A, and 4F	3.3-45 — 3.3-46	Rusty Hill	3.8 from Seg. 4, Alt. 4A, and Alt. 4F	Weak	No adverse impact
C36	WY	Seg. 4, Alt. 4A, and 4F	3.3-47	Lombard Road	2.6 from Seg. 4, Alt. 4A, and Alt. 4F	Weak	No adverse impact
C37	WY	Seg. 4, Alt. 4A, and 4F	3.3-48	Lombard Road	0.2 from Seg. 4, Alt. 4A, and Alt. 4F	Strong	Adverse impact
C38	WY	Seg. 4, Alt. 4A, 4B, 4C, 4D, 4E, and 4F	3.3-49	South of Otterson Wash	0.3 from Seg. 4 and Alt. 4A, 4.1 from Alt. 4B, 4C, 4D, 4E, and 4F	Moderate	Adverse impact
C39	WY	Seg. 4, Alt. 4A, 4B, 4C, 4D, 4E, and 4F	3.3-50	South of Otterson Wash	0.3 from Seg. 4, Alt. 4A, and Alt 4F, 4.4 from Alt. 4B, 4C, 4D and 4E	Moderate	Adverse impact
C105	ID	Seg. 4	3.3-51 — 3.3-52	Big Hill Historic Marker	3.3 from Seg. 4	Weak	No adverse impact
C110 (VS)	WY	Alt. 4A and 4F	3.3-53 VS E-19 — E-20	White Hill Trail Monument	1.8 from Alt. 4A, 3.0 from Alt. 4F	Weak to Moderate	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 4 and Alternatives 4A, 4B, 4C, 4D, 4E, and 4F (continued)							
Opal Wagon Road							
C6	WY	Alt. 4A and 4F	3.3-54 — 3.3-55	NE of Craven Creek	2.6 from Alt. 4A and 4F	Weak	No adverse impact
California NHT – Slate Creek Cutoff							
C42	WY	Seg. 4	3.3-56	Slate Creek Trail Marker	3.7 from Seg. 4	Weak to Moderate	Adverse impact
C58	WY	Seg. 4	3.3-57	North of Slate Creek Butte	1.2 from Seg. 4	Strong	Adverse impact
California NHT – Sublette Cutoff							
C7	WY	Alt. 4A and 4F	3.3-58	Alfred Corum Grave	1.4 from Alt. 4A, 2.0 from Alt. 4F	Weak to Moderate	Adverse impact
C8 (VS)	WY	Alt. 4A and 4F	3.3-59 — 3.3-60 VS E-21 —E-22	Nancy Hill Grave	1.5 from Alt. 4A, 2.1 from Alt. 4F	Weak to Moderate	Adverse impact
C9	WY	Alt. 4A and 4F	3.3-61	Emigrant Spring	2.5 from Alt. 4A, 3.2 from Alt. 4F	Weak	No adverse impact
C11	WY	Alt. 4A and 4F	3.3-62	Oyster Ridge	3.3 from Alt. 4A and Alt. 4F	Weak to Moderate	Adverse impact
C28	WY	Alt. 4A and 4F	3.3-63	Quakenasp Canyon	1.3 from Alt. 4A, 2.1 from Alt. 4F	Weak to Moderate	Adverse impact
C29	WY	Alt. 4A and 4F	3.3-64	Dempsey Summit	2.6 from Alt. 4A, 4.6 from Alt. 4F	Weak to Moderate	Adverse impact
C30	WY	Seg. 4, Alt. 4A and 4F	3.3-65 — 3.3-67	Stoffer Ridge	3.1 from Seg. 4, 0.5 from Alt. 4A, 2.5 from Alt. 4F	Weak for Seg. 4, Moderate for Alt. 4A, Weak for Alt. 4F	Adverse impact for Alt. 4A, No adverse impact for Seg. 4 and Alt. 4F
C31	WY	Alt. 4A, 4C and 4E	3.3-68 — 3.3-69	Rock Creek Ridge	0.5 from Alt. 4A, 4.9 from Alt. 4C and Alt. 4E	Weak	No adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 4 and Alternatives 4A, 4B, 4C, 4D, 4E, and 4F (continued)							
California NHT – Sublette Cutoff (continued)							
C56	WY	Seg. 4	3.3-70	North of Sullivan Hollow	0.5 from Seg. 4	Moderate to Strong	Adverse impact
C57 (VS)	WY	Seg. 4	3.3-71 VS E-23 — E-24	South of Sullivan Hollow	1.4 from Seg. 4	Moderate	Adverse impact
C121 (VS)	WY	Seg. 4	3.3-72 — 3.3-73 VS E-25 — E-26	South of Holden Hollow	2.4 from Seg. 4	Weak to Moderate	Adverse impact
C122	WY	Seg. 4	3.3-74 — 3.3-76	Holden Hill	3.8 from Seg. 4	Weak	No adverse impact
C123	WY	Seg. 4	3.3-77 — 3.3-80	Holden Hill Trail Marker	3.7 from Seg. 4	Weak	No adverse impact
C126	WY	Alt. 4A	3.3-81 — 3.3-82	Rock Slide	3.6 from Alt. 4A	Weak	No adverse impact
California NHT – Dempsey-Hockaday Cutoff							
C10 (VS)	WY	Alt. 4F	3.3-83 — 3.3-84 VS E-27 — E-28	West side Lake Viva Naughton	2.5 from Alt. 4F	Weak to Moderate	Adverse impact
C41	WY	Alt. 4A and 4F	3.3-85 — 3.3-86	East side Lake Viva Naughton	4.8 from Alt. 4A, 3.7 from Alt. 4F	Weak to Moderate	Adverse impact
C124	WY	Alt. 4F	3.3-87 — 3.3-88	South Fork of Dempsey Creek	0.6 from Alt. 4F	Strong	Adverse impact
C125 (VS)	WY	Alt. 4F	3.3-89 VS E-29 — E-30	South Fork of Dempsey Creek	0.4 from Alt. 4F	Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 4 and Alternatives 4A, 4B, 4C, 4D, 4E, and 4F (continued)							
Historic Resources							
C32	WY	Alt. 4B, 4C, 4D and 4E	3.3-90 — 3.3-91	Susanna Lewis Homestead	444 ft from Alt. 4B and 4C, 1.9 from Alt. 4D and 4E	Strong for Alt. 4B and 4C, Moderate for Alt. 4D and 4E	Adverse impact
C33	WY	Alt. 4B and 4C	3.3-92 — 3.3-93	Rawlings Homestead	964 ft from Alt. 4B and 4C	Weak	No adverse impact
C21	ID	Seg. 4	3.3-94 — 3.3-95	Red Rock Pass Cemetery (Jefferson Hunt Memorial)	2.2 from Seg. 4	Weak	No adverse impact
Segment 5 and Alternatives 5A, 5B, 5C, 5D, and 5E							
California NHT – Hudspeth Cutoff							
C24	ID	Seg. 5, Alt. 5A, and 5B, Seg. 7, Alt. 7H and 7I	3.3-96	Cedar Mountain	1.4 from Seg. 5, 1.8 from Alt. 5A and 5B, 2.7 from Seg. 7, Alt. 7H and 7I	Weak to Moderate	Adverse impact
C25 (VS)	ID	Seg. 5 and 7, Alt. 5A, 5B and 5C	3.3-97 VS E-31 — E-32	Hawkins Basin	1.3 from Seg. 5, 0.5 from Alt. 5A, 5B and 5C, 0.2 from Seg. 7	Weak to Moderate for Seg. 5 and Alt. 5C, Strong for Alt. 5A, 5B, and Seg. 7	Adverse impact
Oregon / California NHT							
C26	ID	Seg. 5, Alt. 5D and 5E	3.3-98 — 3.3-99	Massacre Rocks	4.3 from Seg. 5, 4.0 from Alt. 5D and 5E	Weak	No adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 6							
NONE							
Segment 7 and Alternatives 7B, 7C, 7H, 7I, and 7J							
California NHT – Hudspeth Cutoff							
C22	ID	Alt. 5B, 7B, 7H and 7I	3.3-100	Jensen Pass	2.9 from Alt. 5B, 2.5 from Alt. 7B, 7H and 7I	Weak to Moderate	Adverse impact
C23	ID	Alt. 5B, 7B, 7H and 7I	3.3-101	Sublette Canyon	3.4 from Alt. 5B, 3.1 from Alt. 7B, 7H and 7I	Weak to Moderate	Adverse impact
C65	ID	Alt. 7H and 7I	3.3-102	Meadow Creek	1.6 from Alt. 7H, 3.5 from Alt. 7I	Weak to Moderate	Adverse impact
C66	ID	Alt. 7H and 7I	3.3-103	Meadow Creek	2.0 from Alt. 7H and Alt. 7I	Moderate	Adverse impact
C68 (VS)	ID	Alt. 7H and 7I	3.3-104 VS E-33 — E-34	Twin Canyons	2.0 from Alt. 7H and Alt. 7I	Strong	Adverse impact
C69	ID	Alt. 7H and 7I	3.3-105	SE of Erie Canyon	0.7 from Alt. 7H and Alt. 7I	Strong	Adverse impact
C70	ID	Alt. 7H and 7I	3.3-106	SE of Erie Canyon	0.8 from Alt. 7H and Alt. 7I	Strong	Adverse impact
Oregon / California NHT							
C63 (VS)	ID	Seg. 7, Alt. 7C	3.3-107— 3.3-109 VS E-35 — E-36	Parting of the Ways (Raft River)	0.5 from Seg. 7, 3.4 from Alt. 7C	Moderate to Strong for Seg. 7, Weak for Alt. 7C,	Adverse impact for Seg. 7, No adverse impact for Alt. 7C
Oregon NHT							
C64 (VS)	ID	Seg. 7, Alt. 7C	3.3-110 — 3.3-112 VS E-37 — E-38	West of Raft River	1.0 from Seg. 7, 1.8 from Alt. 7C	Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 7 and Alternatives 7B, 7C, 7H, 7I, and 7J (continued)							
California NHT							
C67	ID	Alt. 7H	3.3-113	North of Cassia Creek	1.2 from Alt. 7H	Weak to Moderate	Adverse impact
C78	ID	Alt. 7I	3.3-114	West of Emigrant Canyon	1.6 from Alt. 7I	Moderate	Adverse impact
C79 (VS)	ID	Alt. 7I	3.3-115 VS E-39 — E-40	North of Birch Creek	0.4 from Alt. 7I	Strong	Adverse impact
C80	ID	Alt. 7I	3.3-116 — 3.3-117	SW of Birch Creek	0.5 from Alt. 7I	Moderate to Strong	Adverse impact
California NHT – Salt Lake Alternative							
C72	ID	Alt. 7I	3.3-118	East of Onemile Creek	0.8 from Alt. 7I	Strong	Adverse impact
C73	ID	Alt. 7I	3.3-119	East of Onemile Creek	0.8 from Alt. 7I	Moderate	Adverse impact
C74	ID	Alt. 7I	3.3-120	East of George Creek	1.3 from Alt. 7I	Weak to Moderate	Adverse impact
C75 (VS)	ID	Alt. 7I	3.3-121 — 3.3-122 VS E-41 — E-42	East of Emigrant Canyon	1.4 from Alt. 7I	Weak to Moderate	Adverse impact
C76	ID	Alt. 7I	3.3-123	East of Smoky Mountain	2.6 from Alt. 7I	Weak to Moderate	Adverse impact
C77	ID	Alt. 7I	3.3-124	City of Rocks Emigrant Canyon	2.1 from Alt. 7I	Moderate	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 8 and Alternatives 8A, 8B							
North Alternate Oregon Trail							
C83 (VS)	ID	Seg. 8	3.3-125 — 3.3-126 VS E-43 — E-44	Canyon Creek	0.5 from Seg. 8	Weak to Moderate	Adverse impact
North Alternate Oregon Trail (continued)							
C84	ID	Seg. 8	3.3-127 — 3.3-128	King Hill	0.8 from Seg. 8	Weak to Moderate	Adverse impact
C85	ID	Seg. 8	3.3-129	Pioneer Reservoir	870 ft from Seg. 8	Weak to Moderate	Adverse impact
C87	ID	Seg. 8, Alt. 8A	3.3-130 — 3.3-132	Malad Gorge State Park	2.2 from Seg. 8, 2.5 from Alt. 8A	Weak	No adverse impact
C112	ID	Seg. 8	3.3-133 — 3.3-134	Hot Springs Creek Reservoir	1.9 from Seg. 8	Weak	No adverse impact
C118	ID	Seg. 8, Alt. 8A	3.3-135 — 3.3-136	Blair Trail Reservoir	1.5 from Seg. 8, 3.1 from Alt. 8A	Weak	No adverse impact
C119	ID	Seg. 8, Alt. 8A	3.3-137	Cold Springs Creek	2.6 from Seg. 8, 3.2 from Alt. 8A	Weak	No adverse impact
Oregon NHT							
C61	ID	Alt 8A , Seg. 9	3.3-138 — 3.3-140	SE of Three Island Crossing	3.0 from Seg. 9, 2.8 from Alt. 8A	Moderate	Adverse impact
C95	ID	Alt. 8A and 9B	3.3-141	West Deer Creek Gulch	0.7 from Alt. 8A, 1.4 from Alt. 9B	Weak	No adverse impact
C96 (VS)	ID	Alt. 8A and 9B	3.3-142 — 3.3-143 VS E-45 — E-46	Pilgrim Stage Station-Kelton Road	0.7 from Alt. 8A, 1.4 from Alt. 9B	Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
C97	ID	Alt. 8A, Seg. 9, Alt. 9B	3.3-144 — 3.3-145	Rosevear Gulch area	1.6 from Alt. 8A, 4.2 from Seg. 9, 3.7 from Alt. 9B	Weak	No adverse impact
Segment 8 and Alternatives 8A, 8B, 8C, and 8D (continued)							
Oregon NHT (continued)							
C100	ID	Seg. 8	3.3-146 — 3.3-147	Canyon Creek Station	2.1 from Seg. 8	Weak	No adverse impact
C102	ID	Seg. 8	3.3-148 — 3.3-149	Rattlesnake Station	3.8 from Seg. 8	Weak	No adverse impact
C106	ID	Alt. 8A, Seg. 9, Alt. 9B	3.3-150 — 3.3-151	West of Deer Gulch	1.3 from Alt. 8A, 4.4 from Seg. 9, 0.8 from Alt. 9B	Weak to Moderate for Seg. 9 and Alt. 8A, Moderate to Strong for Alt. 9B	Adverse impact
C107	ID	Alt. 8A	3.3-152	Trail Marker, Kelton Road-West of Pasadena Valley	0.6 from Alt. 8A	Moderate to Strong	Adverse impact
C108	ID	Seg. 8, Alt. 8A	3.3-153	SW of Morrow Reservoir	2.9 from Seg. 8, 1.5 from Alt. 8A	Weak to Moderate	Adverse impact
C111	ID	Alt. 8B	3.3-154 — 3.3-156	Bonneville Point	7.7 from Alt. 8B	Weak	No adverse impact
Boise City to Silver City Road							
C88	ID	Seg. 8, Seg. 9, Alt. 8B	3.3-157 — 3.3-158	Walter's Ferry	1.9 from Seg. 8, 1.0 from Alt. 8B, 3.2 from Seg. 9	Weak	No adverse impact
C89	ID	Alt. 8B	3.3-159 — 3.3-160	Kuna Butte	1.0 from Alt. 8B	Moderate to Strong	Adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 8 and Alternatives 8A, 8B, 8C, and 8D (continued)							
Prehistoric/Historic Resource							
C103 (VS)	ID	Seg. 8, 9	3.3-161 VS E-47 — E-48	Celebration Archeological Park	2.5 from Seg. 8, 4.9 from Seg. 9	Weak	No adverse impact
Segment 9 and Alternatives 9A, 9B, 9C, 9D, and 9E							
Toana Freight Wagon Road							
C92	ID	Alt. 9B, 9C	3.3-162	Balanced Rock Area	1.3 from Alt. 9B, 1.2 from Alt. 9C	Weak	No adverse impact
C93 (VS)	ID	Alt. 9B	3.3-163 — 3.3-164 VS E-49 — E-50	Coyote Spring Stage Station	1.1 from Alt. 9B	Moderate to Strong	Adverse impact
Oregon NHT							
C60	ID	Alt. 8A and 9B, Seg. 9	3.3-165 — 3.3-166	Three Island Crossing	3.8 from Alt. 8A , 2.7 from Seg. 9, 4.7 from Alt. 9B	Weak to Moderate for Alt. 8A, Moderate for Seg. 9, Weak for Alt. 9B	Adverse impact for Seg. 9 and Alt. 8A, No adverse impact for Alt. 9B
C62	ID	Alt. 8A and 9B	3.3-167 — 3.3-168	Hagerman Fossil Beds National Monument	4.9 from Alt. 8A, 1.4 from Alt. 9B	Weak	No adverse impact
C81	ID	Seg. 7, Alt. 7H and 7I, Seg. 9 and 10	3.3-169 — 3.3-170	Rock Creek Station and Stricker Ranch	4.9 from Seg. 7 and 7H, 3.7 from Alt. 7I, 3.2 from Seg. 9, 3.9 from Seg. 10	Weak	No adverse impact

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 9 and Alternatives 9A, 9B, 9C, 9D, and 9E (continued)							
Oregon NHT – South Alternate							
C90 (VS)	ID	Seg. 8 and 9, Alt. 9D and 9E	3.3-171 — 3.3-173 VS E-51 — E-52	SRBOP	2.0 from Seg. 8, 1.0 from Seg. 9, 0.5 from Alt. 9D, 1.0 from Alt. 9E	Weak for Seg. 8, Seg. 9 and 9E, Strong for Alt. 9D	Adverse impact for Alt. 9D, No adverse impact for Seg. 8, Seg. 9, and Alt 9E.
C91	ID	Alt. 9D	3.3-174	Sinker Creek Butte Area	2.3 from Alt. 9D	Moderate to Strong	Adverse impact
Oregon NHT – South Alternate (continued)							
C113	ID	Seg. 9	3.3-175 — 3.3-176	SE of Flatiron Butte	2.8 from Seg. 9	Moderate	Adverse impact
C115	ID	Seg. 9	3.3-117 — 3.3-179	SW of Jackass Butte	4.0 from Seg. 9	Weak	No adverse impact
C116	ID	Alt. 9D	3.3-180 — 3.3-182	Core Recreation area	0.5 from Alt. 9D	Moderate	Adverse impact
C117 (VS)	ID	Alt. 9D	3.3-183 — 3.3-184 VS E-53 — E-54	NW of Wilkins Gulch	1.0 from Alt. 9D	Moderate to Strong	Adverse impact
C120	ID	Alt. 9D	3.3-185	West of Loveridge Bridge	2.1 from Alt. 9D	Weak to Moderate	Adverse impact
Historic Resources							
C101	ID	Seg. 9. Alt. 9A	3.3-186	Hollister School	3.3 from Seg. 9, 3.7 from Alt. 9A	Weak	No adverse impact
C104	ID	Seg. 9, Alt. 9E	3.3-187	"Our Lady Queen of Heaven" Catholic Church	1.0 from Seg. 9 and Alt. 9E	Weak to Moderate for Seg. 9, Weak for 9E	Adverse impact for Seg. 9, No adverse impact for Alt. 9E

Table 3.3-6. Summary of Cultural Resource Visual Impact Analysis by Segment and Resource (continued)

KOP ID	State Location	Proposed Route or Alternative	Figure Number Reference	General Location/ Description	Distance from Resource to Proposed Route or Alternative (miles)	Visual Contrast Level	Recommendation of Impacts to Cultural Resource
Segment 9 and Alternatives 9A, 9B, 9C, 9D, and 9E (continued)							
Historic Resources (continued)							
C109	ID	Seg. 8, Seg. 9, Alt. 9D and 9E	3.3-188	Owyhee Court House	3.3 from Seg. 8, 0.4 from Seg. 9, 1.6 from Alt. 9D, 0.8 from Alt. 9E	Weak	No adverse impact
Segment 10							
Prehistoric Resource							
C82	ID	Seg. 6 and 10	3.3-189	Wilson Butte Cave	1.9 from Seg. 6, 5.5 from Seg. 10	Weak	No adverse impact
Historic Resources							
C99 (VS)	ID	Seg. 10	3.3-190 VS E-55 — E-56	Minidoka National Historic Site	1.0 from Seg. 10	Moderate	Adverse impact

1/ VS = visual simulation
2/ Assume all Proposed Routes and Route Alternatives have the same visual contrast level assessment unless otherwise specified.

Segments 1W and 1E

Segment 1W is composed of two parts, Segment 1W(a) and 1W(c), both of which would consist of a new 230-kV line for part of their length and a reconstruction of an existing 230-kV line for the remaining part. Segment 1W(a) would be about 76.5 miles long, and would extend from the Windstar Substation to the Aeolus Substation. Segment 1W(c) would be about 70.6 miles long, and would extend from the Dave Johnson Power Plant to the Aeolus Substation. Alternative 1W-A is a 16.2-mile alternative located near the town of Glenrock, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners in order to avoid the more settled area around Glenrock. Twenty acres of the proposed expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(a) and 3 acres of the expansion at the Difficulty Substation and 17 acres of the expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(c). There are no Route Alternatives proposed south of that point (see Appendix A, Figure A-2).

Segment 1E, as proposed, would link the Windstar and Aeolus Substations in south-central Wyoming with a 100.6-mile 230-kV single-circuit transmission line. Twenty acres of the expansion of Windstar and Aeolus Substations and 0.5 acre for one regeneration site are attributed to Segment 1E. Alternative 1E-A is a 16.1-mile alternative along the north end of Segment 1E, which was the Proponents' initial proposal before moving the Proposed Route at the suggestion of local landowners to avoid the more settled area around Glenrock. Alternative 1E-B is 21.4 miles longer than the Proposed Route but is being considered by the Proponents because it would avoid a Wyoming-designated sage-grouse core area to the east. The BLM has required the consideration of Alternative 1E-C, which parallels Segment 1W 230-kV lines into the Aeolus Substation (see Appendix A, Figure A-2).

Rock Creek and Fort Fetterman Road

KOP C43 (Figures 3.3-1 and 3.3-2) is located on a segment of the Rock Creek and Fort Fetterman Road approximately 4.1 miles northwest of Alternative 1E-B.

The resource at this location consists of a shallow two-track road in good condition and no evidence of modern use. The setting for this segment of the road has been minimally impacted by an outbuilding and retention pond that is located less than 0.25 mile to the south.

The proposed Project would introduce new elements in the resource's viewshed; however, the distance from the Proposed Route would diminish the prominence of the structural elements and allow them to blend in with the landscape. The VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-1. KOP C43. View of Rock Creek and Fort Fetterman Road facing north. Photo taken 11/05/09 at 3:05 p.m.

Figure 3.3-2. KOP C43. View from Rock Creek and Fort Fetterman Road facing southeast towards Alternative 1E-B. Photo taken 11/05/09 at 3:05 p.m.

Oregon NHT

KOP C48 (Figures 3.3-3, 3.3-4, and 3.3-5) is located on a segment of the Oregon NHT south of the North Platte River approximately 2.5 miles east-southeast of Glenrock. The KOP is between Alternatives 1E-A and 1W-A and is located within the Proposed Route in Segment 1E, 1.1 miles north of the Proposed Route in Segment 1W(c), and 1.6 miles southeast of the Proposed Route in Segment 1W(a) and Alternative 1W-A.

The resource at this location is a two-track road that parallels the North Platte River. The road is well-used by the landowner for ranching and recreational purposes and is deeply rutted in many places. The setting contains a housing community 3 miles to the west and the Dave Johnston Power Plant is visible approximately 1.5 miles to the northeast. A large concrete production facility is visible on the west bank of the North Platte River to the northeast. Numerous houses are visible in all directions and existing transmission lines (lattice and wooden, single pole) are visible to the east, west, and north.

Due to the similarity of the Project's design with existing structures in the area, the VCR for this KOP is assessed as weak. The setting for this location has been impacted by existing modern intrusions. There would not be an adverse impact to the resource at this location.

Figure 3.3-3. KOP C48. View of trail facing north. Note the concrete structure in the middleground and the transmission line on the distant hills. Photo taken 11/08/09 at 12:40 p.m.

Figure 3.3-4. KOP C48. View from trail looking southeast towards Alternative 1E-A. Note modern buildings and transmission lines. Photo taken 11/08/09 at 12:40 p.m.

Figure 3.3-5. KOP C48. View from trail looking northwest towards Alternative 1W-A. Note modern buildings and transmission lines on distant hill. Photo taken 11/08/09 at 12:40 p.m.

California NHT

KOP C47 (Figures 3.3-6, 3.3-7, and 3.3-8) is located at the site of Alvah Unthank's grave near a segment of the California NHT. The KOP is north of the Glenrock exit of I-25, approximately 0.5 mile east of the I-25 frontage road, on CR 27. Two markers are present at a parking area in this location, including an interpretive sign placed by OCTA (Wyoming SHPO 2009). The KOP is 0.6 mile northwest of the Proposed Route in Segment 1W(c), approximately 2.0 miles north of the Proposed Route in Segment 1E and Alternative 1E-A, 2.0 miles southeast of Alternative 1W-A, and 2.6 miles southwest of Segment 1W(a).

The portion of the trail associated with the grave is located on private property and a direct assessment of the resource condition could not be obtained due to landowner restrictions. The integrity of setting of the trail at this location has been impacted by the presence of I-25, residential structures, the Dave Johnston Power Plant, and associated transmission lines, which are visible in all directions.

Due to the similarity of the Project's design with existing structures in the area, the VCR for this KOP is assessed as weak. The setting for this location has been impacted by modern intrusions. There would not be an adverse impact to the resource at this location.

Figure 3.3-6. KOP C47. View looking south toward Unthank Grave (fenced area). Photo taken 11/08/09 at 10:02 a.m.

Figure 3.3-7. KOP C47. View from the Unthank Grave interpretive sign facing northeast. Photo taken 11/08/09 at 10:02 a.m.

Figure 3.3-8. KOP C47. View from the Unthank Grave interpretive sign facing west-northwest toward the Proposed Route in Segment 1W(c) and Segment 1E and Alternatives 1E-A and 1W-A. Photo taken 11/08/09 at 10:02 a.m.

California NHT – Child's Cutoff

KOP C45 (Figures 3.3-9 and 3.3-10) is located near a segment of the California NHT-Child's Cutoff that is 2.4 miles northwest of the Proposed Route in Segment 1W(a) and 3.1 miles northwest of the Proposed Route in Segment 1E.

This portion of the trail is located on private property and a direct assessment of the resource condition could not be obtained due to landowner restrictions. A wooden, single-pole transmission line crosses the resource 490 feet east of the trail segment and a railroad track parallels the resource 50 feet to the south. Modern ranch houses dot the landscape in all directions, a radio tower is visible 0.2 mile south of the trail, and property fences are visible in all directions. CR 22 bisects the resource east of the segment.

The Project's design shares some similarities with existing structures in the area but will introduce new elements that are of different material, form, and texture. The VCR for the KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-9. KOP C45. View looking toward Child's Cutoff facing east toward the Proposed Route in Segment 1W(a). Photo taken 11/07/09 at 3:45 p.m.

Figure 3.3-10. KOP C45. View from trail area facing south toward railroad. Photo taken 11/07/09 at 3:45 p.m.

KOP C49 (Figures 3.3-11, 3.3-12, 3.3-13, and 3.3-14) is located on a segment of California NHT-Child's Cutoff, east of Monkey Hill near the town of Glenrock. It is approximately 0.5 mile south of the Proposed Route in Segment 1W(a), 2.0 miles northwest of Alternative 1W-A, and the Proposed Route in Segment 1E, 2.4 miles northwest of Alternative 1E-A, and 3.1 miles northwest the Proposed Route in Segment 1W(c).

Figure 3.3-11. KOP C49. View of Child's Cutoff facing northwest. Photo taken 11/09/09 at 8:35 a.m.

Figure 3.3-12. KOP C49. View from Child's Cutoff facing north toward the Proposed Route in Segment 1W(a). Photo taken 11/09/09 at 8:35 a.m.

Figure 3.3-13. KOP C49. View from Child's Cutoff facing east toward Alternative 1W-A. Photo taken 11/09/09 at 8:35 a.m.

Figure 3.3-14. KOP C49. View from Child's Cutoff facing southeast toward Alternative 1W-A. Photo taken 11/09/09 at 8:35 a.m.

The resource at this location consists of a well-used two-track road. The road has been widened and ruts deepened by use from local residents, ranchers, and from use as an access road to nearby utility lines. Railroad tracks parallel the resource segment approximately 195 feet to the south. A housing community in Glenrock is visible 1 mile to the south. The Dave Johnston Power Plant is visible approximately 3 miles to the southeast, and wooden, H-frame transmission lines are visible approximately 195 feet to the north, paralleling the resource. Two underground pipelines parallel the trail and their identification markers are visible approximately 82 feet to the north.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different material, form, and texture. The VCR for the KOP is assessed as weak to moderate. Although the visual assessment resulted in a moderate rating, the historic setting for this location has been impacted by modern intrusions. There would not be an adverse impact to the resource at this location.

Historic Resource

KOP C98 (Figures 3.3-15 and 3.3-16) is located near a historic cabin site in the Shirley Basin approximately 0.25 mile northeast of the Bates Creek Reservoir. The KOP is 1.7 miles west of Alternative 1E-C, 2.3 miles west of the Proposed Route in Segment 1W(c), and 2.0 miles west of the Proposed Route in Segment 1W(a).

Figure 3.3-15. KOP C98. View of historic cabins facing north. Photo taken 07/17/08 at 11:05 a.m.

Figure 3.3-16. KOP C98. View from cabins facing east toward Alternative 1E-C, the Proposed Route in Segment 1-W(c), and the Proposed Route in Alternative 1W-A. Photo taken 07/17/08 at 11:05 a.m.

These cabins have not been officially recorded and the NRHP status of the resource is currently unevaluated. There are no modern intrusions to the setting at this location.

Views of all routes and alternatives are screened to the east but are open to the south. The Project would introduce new structural elements into the viewshed. Due to this factor and the Project's distance from this KOP, the VCR for this KOP is assessed as moderate. The proposed Project elements would dominate the setting to the south. There would be an adverse impact to the resource at this location.

Segment 2

Segment 2, as proposed, would link the Aeolus and Creston Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length is 96.7 miles. Fifty-two acres of the expansion of the Aeolus Substation and the construction of the Creston Substation and 0.5 acre for one regeneration site are attributed to Segment 2. There are three Route Alternatives, two of which are near the community of Fort Fred Steele. Alternative 2A at 28.4 miles long is being considered by the BLM because it remains in the WWE corridor nearer the town and the state historic site, and Alternative 2B, at 6.2 miles, is closer to the community than the comparison portion of the Proposed Route and was the initially proposed route before the Proponents responded to local suggestions and relocated the Proposed Route farther to the south. Alternative 2C is a 24.4-mile alternative located north of Hanna, Wyoming. It is being evaluated at the recommendation of the Wyoming Governor's office to follow a utility corridor approved by that office for minimizing effects to sage-grouse (see Appendix A, Figure A-3).

Rawlins to Fort Washakie Stage Road and Freight Road

KOP C19 (Figures 3.3-17 and 3.3-18) is located on a segment of the Rawlins to Fort Washakie Stage Road and Freight Road on the northern toe-slope of the eastern extension of Rawlins Peak and parallels U.S. Highway 287, approximately 0.75 mile to the east. The Proposed Route in Segment 2 of the Project would be located 4.4 miles to the southeast.

The resource at this location consists of a combination of shallow swales and faint two-track segments with no visible ruts. The trail is not visible as a continuous segment through this locale and it is difficult to determine the boundaries of the route. The setting has been impacted by adjacent residential development, stone quarry cuts, and U.S. Highway 287 east and south of the KOP.

The Project's design shares some similarities with existing structures but would introduce new elements that are of different form. The VCR for the KOP is assessed as weak. The setting for this location has been impacted by modern intrusions. There would not be an adverse impact to the resource at this location.

Figure 3.3-17. KOP C19. View of Rawlins to Fort Washakie Road facing west. A two-track road extends horizontally across the middleground of the photograph, at the base of the shallow terrace in background. Photo taken 10/07/09 at 2:35 p.m.

Figure 3.3-18. KOP C19. View from Rawlins to Fort Washakie Road facing southeast toward the Proposed Route in Segment 2. Photo taken 10/07/09 at 2:35 p.m.

Lincoln Highway

KOP C2 (Figures 3.3-19 and 3.3-20) is located on a segment of the Lincoln Highway approximately 550 feet north of U.S. Highway 30/287, 0.6 mile north of the Proposed Route in Segment 2, and 1.2 mile south of Alternative 2A, and 2.8 miles south of Alternative 2C.

The resource at this location consists of a gravel road with degraded asphalt. The setting contains wooden, single-pole transmission lines in all directions within 0.5 mile, the UPRR is 1 mile to the west, and U.S. Highway 287 is 0.25 mile south. Overall, the current setting, with the exception of views of U.S. Highway 287, is consistent with the period of use.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different material, form, size, and texture. The KOP's distance from the Proposed Route would allow for the structural elements to blend with the landscape in some areas. The VCR for the KOP is assessed as weak to moderate for Segment 2 and Alternative 2A and weak for Alternative 2C. The proposed Project elements would draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource from Segment 2 and Alternative 2A at this location. Due to increased distance from the Project and the potential for the structural elements to blend in to the backdrop, there would not be an adverse impact to the resource from Alternative 2C.

Figure 3.3-19. KOP C2. View from Lincoln Highway facing north toward Alternative 2A and 2C. Photo taken 9/13/09 at 1:25 p.m.

Figure 3.3-20. KOP C2. View from Lincoln Highway facing southeast toward the Proposed Route in Segment 2. Photo taken 9/13/09 at 1:25 p.m.

KOP C3 (Figures 3.3-21, 3.3-22, and 3.3-23) is located on a segment of the Lincoln Highway near the town of Hanna, at the junction of two segments of the highway plotted by the NPS, approximately 0.5 mile north of U.S. Highway 30/287. Alternative 2A is 0.4 mile to the north, the Proposed Route in Segment 2 is 0.9 mile to the southeast, and Alternative 2C is 2.8 miles to the north.

The resource at this location is a two-track road. The road is in good condition, with limited disturbance from public use and wind and water erosion. The setting at this location is relatively undisturbed and includes sweeping views of the landscape in all directions. A wooden, H-frame transmission line is located 0.5 mile to the north but is partially concealed by the surrounding topography.

Due to the Project's proximity to this KOP and the introduction of new elements in the resource's viewshed, the VCR for this KOP is assessed as moderate to strong for the Proposed Route in Segment 2, weak to moderate for Alternative 2A, and weak for 2C. The proposed Project elements from the Proposed Route in Segment 2 and Alternative 2A dominate the setting; therefore, there would be an adverse impact to the resource at this location. Due to increased distance from the Project and the potential for the structural elements to blend into the backdrop, there would not be an adverse impact to the resource from Alternative 2C.

Figure 3.3-21. KOP C3. Overview of Lincoln Highway, facing northeast. Photo taken 9/13/09 at 3:00 p.m.

Figure 3.3-22. KOP C3. View from Lincoln Highway facing north towards Alternative 2A and 2C. Wooden, H-frame transmission line is visible in the middle ground of the photo. Photo taken 9/13/09 at 3:00 p.m.

Figure 3.3-23. KOP C3. View from Lincoln Highway, facing south towards the Proposed Route in Segment 2. Photo taken 9/13/09 at 3:00 p.m.

KOP C4 (Figures 3.3-24 and 3.3-25) is located on a segment of the Lincoln Highway, near the town of Hanna, 1 mile east of KOP C2 and approximately 0.25 mile north of U.S. Highway 30/287. Alternative 2A is 0.5 mile to the north, the Proposed Route in Segment 2 is 0.4 mile to the southeast, and Alternative 2C is 3.5 miles to the north.

The resource at this location is a two-track road and a parallel swale variant to the north. The setting contains a wooden, H-frame transmission line located 0.5 mile to the north that is partially concealed by the surrounding topography. The UPRR is 1.25 miles to the northwest, the town of Hanna is visible approximately 3 miles to the northeast, and U.S. Highway 30/287 is 0.25 mile south. Overall, the current setting, with the exception of views of U.S. Highway 30/287 and the wooden, H-frame transmission line, is consistent with the period of use.

Figure 3.3-24. KOP C4. View from Lincoln Highway, facing north towards Alternatives 2A and 2C. Photo taken 9/13/09 at 3:45 p.m.

Figure 3.3-25. KOP C4. View from Lincoln Highway, facing south towards the Proposed Route in Segment 2. Photo taken 9/13/09 at 3:45 p.m.

Due to the proposed Project's proximity to this KOP and the introduction of new structural elements in the resource's viewshed, the VCR for this KOP is assessed as moderate for the Proposed Route in Segment 2, weak to moderate for Alternative 2A, and weak for 2C. The proposed Project elements from the Proposed Route in Segment 2 and Alternative 2A would dominate the setting; therefore, there would be an adverse impact to the resource at this location. Due to increased distance from the Project and the potential for the structural elements to blend in to the backdrop, there would not be an adverse impact to the resource from Alternative 2C.

KOP C20 (Figure 3.3-26) is located on a segment of the Lincoln Highway approximately 2 miles northwest of Hogback Lake. It is 0.25 mile south of I-80 and 0.5 mile north of the UPRR grade. The Proposed Route in Segment 2 is 3 miles to the south.

The resource at this location consists of an upgraded, bladed road with added gravels. The setting contains views of traffic along I-80 to the north, a wooden, H-frame transmission line that parallels the highway, and views of the UPRR 0.5 mile to the northwest.

The Project would introduce new structural elements to the area of the viewshed away from existing modern impacts. The distance of the Project from this location, however, would decrease the prominence of the Project elements providing a backdrop for them to blend in with the landscape in some areas. The proposed Project elements would not dominate the setting. The VCR for this KOP is assessed as weak; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-26. KOP C20. View from Lincoln Highway, facing south toward the Proposed Route in Segment 2. Photo taken 10/7/09 at 4:30 p.m.

Rawlins to Baggs Stage Road

KOP C1 (Figure 3.3-27) is located on a segment of the Rawlins to Baggs Stage Road. The road diverts south of the reported SHPO spatial data, which map the resource as corresponding to CR 605N, also known as Twenty Mile Road. The KOP is located off the two-track road in a pasture where the historic trail trace has not been disturbed by modern vehicle use. KOP C1 is located approximately 0.9 mile south of where the Proposed Route in Segment 2 would cross the resource. Photographic simulations (Appendix E, Figures E.3-12 and E.3-13) depicting indirect (visual) impacts to the resource have been generated for this KOP.

The wagon road at this location consists of a shallow swale with ruts and is in fair to good condition. The part of the trail to the south of this area that corresponds with the two-track road is quite disturbed as a result of spring and winter vehicle travel, which has left deep ruts. The condition of the resource has been further impacted by cattle grazing, and one rut has been used as a cattle/game trail making it perceptibly deeper than the other rut. There are no modern intrusions to the setting.

The proposed Project would introduce new elements in the resource's viewshed; however, the KOP's distance from the Proposed Route allows for the structural elements to blend in with the landscape in some areas. The VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting to the north. There would be an adverse impact to the resource at this location.

Figure 3.3-27. KOP C1. View of Rawlins to Bagg's Stage Road (48CR3648), looking north toward the Proposed Route in Segment 2. Photo taken 9/11/09 at 11:42 a.m.

Historic Resource

KOP C51 (Figure 3.3-28) is located just north of the entry gate to Fort Fred Steele, an NRHP listed historic property located on CR 347, 12 miles east of Rawlins. The KOP is located approximately 2.1 miles north of the Proposed Route in Segment 2, 506 feet north of Alternative 2A, and 0.4 mile north of Alternative 2B. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-14 through E.3-16).

The setting contains two parallel sets of wooden, H-frame transmission lines less than 0.25 mile to the south of this KOP. A bridge, housing structures, and other buildings related to ranching and a rest area are visible within 0.5 to 1.0 mile to the south.

Views from this KOP toward the Proposed Route in Segment 2 and Route Alternatives are screened by topography to the west and southwest. The Project would be visible to the southeast. The Project shares some elements with existing structures in the area but would introduce new elements of different form and size. Alternatives 2A and 2B are located to the south and parallel to the two wooden, H-frame transmission lines. Due to these factors, the KOP's proximity to the alternatives, and the cumulative impact of adding additional structures, the VCR is assessed as moderate for Alternatives 2A and 2B. The Proposed Route in Segment 2 would be located at a greater distance from this KOP, decreasing its prominence in the view. Due to this factor and the potential for the elements to blend in with the backdrop, the VCR for the Proposed Route in Segment 2 is assessed as weak to moderate. The proposed Project would draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to this resource at this location.

Figure 3.3-28. KOP C51. View looking south toward the Proposed Route in Segment 2 and Alternatives 2A and 2B, standing on CR 347, just north of the entry gate to Fort Fred Steele. Photo taken 11/09/09 at 4:00 p.m.

Segment 3

Segment 3, as proposed, would link the Creston and Anticline Substations in southeast Wyoming with two 500-kV circuits on one structure. One circuit would be operated at 230 kV during the initial phase of the Project. Its total proposed length between those two substations is 46.7 miles. Sixty-nine acres of the construction of the Anticline and Creston Substations are attributed to Segment 3. Segment 3 would also link the Anticline and Jim Bridger Substations with a 4.3-mile 230-kV line and a 5.5-mile 345-kV line and includes the 10-acre expansion of the Jim Bridger 345-kV Substation. There are no alternatives proposed along this segment (see Appendix A, Figure A-4).

Lincoln Highway

KOP C52 (Figure 3.3-29) is located on a segment of the Lincoln Highway near East Desert Ranch Road and is 0.4 mile south of the Proposed Route in Segment 3. The resource at this location consists of an upgraded, gravel road that has been bladed and used for access to nearby oil and gas facilities.

The road the road follows and east-to-west course, paralleling I-80. A wooden, H-frame transmission line and gas pipeline markers are visible 0.25 mile to the north. Setting is impacted to the south and north.

Due to the proposed Project's proximity to this KOP and the introduction of new elements in the resource's viewshed, the VCR for this KOP is assessed as moderate for the Proposed Route in Segment 3. The Project's elements would dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-29. KOP C52. View from Lincoln Highway, facing north toward the Proposed Route in Segment 3. Photo taken 11/10/09 at 12:26 p.m.

KOP C53 (Figures 3.3-30 and 3.3-31) is located on a segment of the Lincoln Highway located west of Bitter Creek Road near the Continental Divide. It is located among rolling hills with sandstone outcrops approximately 0.3 mile north of I-80 and 0.75 mile west of Bitter Creek Road. The Proposed Route in Segment 3 would be located 0.4 mile to the north.

The resource at this location consists of a roadbed composed of degrading asphalt and gravels. The road trends east to west paralleling I-80. A wooden, H-frame transmission line and gas pipeline markers are visible 0.25 mile to the north. The setting is impacted to the south and north.

Due to the proposed Project's proximity to this KOP and the introduction of new elements in the resource's viewshed, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting to the north and northwest. There would be an adverse impact to the resource at this location.

Figure 3.3-30. KOP C53. View of the Lincoln Highway facing southwest. I-80 is visible in the middleground. Photo taken 11/10/09 at 12:26 p.m.

Figure 3.3-31. KOP C53. View from the Lincoln Highway, facing north toward wooden, H-frame transmission line and the Proposed Route in Segment 3. Photo taken 11/10/09 at 12:26 p.m.

Segment 4

Segment 4, as proposed, would link the Anticline Substation near the Jim Bridger Power Plant in southwestern Wyoming with the Populus Substation in Idaho with two 500-kV circuits on one structure. Its total proposed length is 203 miles. Eighty-nine acres of the construction of the Anticline Substation and the expansion of the Populus Substation and 1.5 acres for three regeneration sites are attributed to Segment 4. It has six Route Alternatives in the middle portion of its route but the first 52 miles to the east and the last 61 miles to the west (in Idaho) do not have any Route Alternatives. The middle section of the Proposed Route is 90.2 miles long, and its Route Alternatives vary from 85 to 102 miles long. These alternatives were proposed by the Wyoming Governor's office (4A, paralleling the existing 345-kV lines throughout); by the BLM Kemmerer FO (4B through 4E, including edits from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical; and by the Proponents (4F, attempting to avoid impacts to cultural resources while still remaining north of the existing lines) (see Appendix A, Figures A-5 and A-6).

Rock Springs to Lander Stage Road

KOP C13 (Figure 3.3-32) is located on a segment of the Rock Springs to Lander Stage Road, 1 mile northeast of Fourteen Mile Ranch and 0.6 mile north of the Proposed Route in Segment 4.

Figure 3.3-32. KOP C13. View of Rock Springs to Lander Stage Road, near Fourteen Mile Ranch, facing southwest toward the Proposed Route in Segment 4. Photo taken 10/02/09 at 2:47 p.m.

The resource at this location is a shallow, moderately used, two-track road that trends southwest. The condition of the trail is good with minimal alteration to its physical elements from modern use. The setting contains a lattice transmission line located approximately 0.25 mile to the south, a large ranch house to the southwest, and view of traffic traveling on U.S. Highway 191.

The proposed Project would be located north of and relatively parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The setting for this resource is impacted by modern intrusions in the direction of the Proposed Route; therefore, there would not be an adverse impact to the resource at this location.

KOP C14 (Figure 3.3-33) is located on a segment of the Rock Springs to Lander Stage Road between U.S. Highway 191 and U.S. Highway 187, just south of CR 17 (Chilton Road) and 1.1 miles south of the Proposed Route in Segment 4.

The resource at this location is a very shallow swale that trends north-south. The setting contains a lattice transmission line located approximately 1.5 miles to the north, a housing community to the southeast approximately 4 miles, and view of traffic, snow fences, and small structures along U.S. Highway 191.

Figure 3.3-33. KOP C14. View looking north from Rock Springs to Lander Stage Road toward the Proposed Route in Segment 4. Note warehouse structure in middleground of photo. Photo taken 10/03/09 at 10:00 a.m.

The proposed Project would be located south of and relatively parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The setting for this resource is impacted by modern intrusions in the direction of the Proposed Route. There would not be an adverse impact to the resource at this location.

New Fork Wagon Road

KOP C15 (Figures 3.3-34, 3.3-35, and 3.3-36) is located on a segment of the New Fork Wagon Road, 1.3 miles northwest of Fourteen Mile Ranch and approximately 0.4 mile east of U.S. Highway 187/191 and 1.0 mile north of the Proposed Route in Segment 4. U.S. Highway 191 is located 0.5 mile south.

The resource at this location consists of a two-track road with evidence of modern use. An additional, shallow, two-track road extends south from the curve of the resource and may be the actual alignment of the historic road and not the alignment located to the southeast. The setting contains a lattice transmission line 0.75 mile to the south that blends in with the surrounding landscape in many areas. A communications tower is located on the top of a ridge south of this point, and a residential area is located approximately 5 miles to the southeast. A snow fence extends northeast-to-southwest on the south side of U.S. Highway 191.

Figure 3.3-34. KOP C15. Overview of New Fork Wagon Road facing southeast. Note lattice transmission line blending with backdrop. Photo taken 10/03/09 at 10:00 a.m.

Figure 3.3-35. KOP C15. View of shallow two-track road extending south from the recorded segment of New Fork Wagon Road. Photo taken 10/03/09 at 10:00 a.m.

Figure 3.3-36. KOP C15. View from New Fork Wagon Road, looking south towards the Proposed Route in Segment 4. Note lattice transmission line blending with the backdrop. Photo taken 10/03/09 at 10:00 a.m.

The proposed Project's route would be located to the south of and parallel to the lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the KOP's distance from the Proposed Route, and the cumulative impact of adding additional structures; the VCR for this KOP is assessed as weak to moderate. The proposed Project may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Green River to South Pass Stage Road

KOP C40 (Figure 3.3-37) is located on a segment of the Green River to South Pass Stage Road, approximately 656 feet west of Alkali Creek and 0.6 mile northwest of Alkali Spring where the archaeological remains of the historic stage stop (48SW870) have been recorded. The KOP is approximately 702 feet north of the Proposed Route in Segment 4. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-17 and E.3-18).

The resource at this location consists of a two-track road with modern use that has widened the road and deepened the ruts in some areas. The setting contains a lattice transmission line less than 0.25 mile to the north.

The proposed Project's route would be located to the south of this KOP, away from existing impacts to the cultural landscape. Due to the proposed Project's proximity to this KOP and the introduction of new elements in a new area of the resource's

Figure 3.3-37. KOP C40. View of Green River/South Pass Stage Road looking south toward the Proposed Route in Segment 4. Photo taken 9/30/09 at 12:59 p.m.

viewshed, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting to the south; therefore, there would be an adverse impact to the resource at this location.

1849 Evans Cherokee Trail

KOP C12 (Figure 3.3-38) is located on a segment of the 1849 Evans Cherokee Trail, approximately 2 miles south of CR 14 (Fourteen Mile Road), 0.35 mile southeast of CR 5 (Blue Rim Road), and 1.5 miles west of Alkali Creek. KOP C12 is 2.9 miles south of the Proposed Route in Segment 4.

The resource at this location consists of a deep swale with evidence of erosion from wind and water action. The setting contains a lattice transmission line visible approximately 5 miles north of the resource. Markers are visible from a gas pipeline that parallels the trail to the north approximately 0.13 mile.

The Proposed Route in Segment 4 is viewed from this KOP approximately 4.2 miles to the northeast. The proposed Project would introduce new structural elements to the setting. The distance of the Project from this location would decrease the prominence of the elements and allow them to blend in with the landscape in some areas; therefore, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-38. KOP C12. View of 1849 Evans Cherokee Trail swale facing northeast toward the Proposed Route in Segment 4. Photo taken 10/02/09 at 11:07 a.m.

KOP C16 (Figures 3.3-39 and 3.3-40) is located on a segment of the 1849 Evans Cherokee Trail along the western foot of White Mountain, approximately 0.3 mile south of CR 14 and 0.6 mile north of the Proposed Route in Segment 4.

The resource at this location consists of a swale with shallow ruts. The trail is in good condition in this area and is free of disturbance from modern vehicle traffic. The setting contains a lattice transmission line paralleling the resource approximately 0.25 mile to the south.

The proposed Project would be located south of and parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The setting for this resource is impacted by modern intrusions in the direction of the Proposed Route; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-39. KOP C16. View of 1849 Evans Cherokee Trail swale with ruts. Standing on trail looking west-southwest. Photo taken 10/03/09 at 1:17 p.m.

Figure 3.3-40. KOP C16. Looking towards the Proposed Route in Segment 4. Standing on trail looking south. Photo taken 10/03/09 at 1:17 p.m.

KOP C18 (Figure 3.3-41) is located at the eastern end of Skunk Canyon on a segment of the 1849 Evans Cherokee Trail, approximately 0.5 mile south of CR 14 and approximately 0.4 mile north of the Proposed Route in Segment 4.

The resource at this location consists of a two-track road with shallow ruts. The setting contains a lattice transmission line paralleling the resource approximately 0.25 mile to the south.

The proposed Project would be located south of and parallel to the lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The setting for this resource is impacted by modern intrusions in the direction of view of the Proposed Route in Segment 4; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-41. KOP C18. View from 1849 Evans Cherokee Trail facing southwest toward the Proposed Route in Segment 4. Photo taken 10/06/09 at 1:51 p.m.

Oregon/California NHT

KOP C27 (Figures 3.3-42, 3.3-43, and 3.3-44) is located on a segment of the Oregon/California NHT, near the Thomas Fork and Big Hill ascent. The KOP is located northeast of U.S. Highway 30 where several trail variants come together at the crest of the first ridge on the west side of the Thomas Fork Valley. It is approximately 1.6 miles east of where the Proposed Route in Segment 4 crosses the resource; 1.9 miles northeast of Alternatives 4B, 4C, 4D, and 4E; and 1.8 miles northeast of Alternatives 4A and 4F.

Figure 3.3-42. KOP C27. View of the trail, visible in middle and extending into the shallow hill pass at the left. Looking northwest. Photo taken 10/21/09 at 2:50 p.m.

Figure 3.3-43. KOP C27. View looking west from trail toward the Proposed Route in Segment 4. Lattice transmission line visible on skyline. Photo taken 10/21/09 at 2:50 p.m.

Figure 3.3-44. KOP C27. View looking south from trail toward Alternatives 4B, 4C, 4D, and 4E. Lattice transmission line visible on skyline. Photo taken 10/21/09 at 2:50 p.m.

The resource at this location consists of a faint two-track road with shallow ruts. A lattice transmission line is located less than 1 mile to the west and south. Several ranching properties are visible in the Thomas Fork Valley to the southeast.

Due to the similarity of the Project's design with existing structures in the west and south and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak to moderate. The Proposed Route in Segment 4 would be located to the north of and paralleling the existing lattice transmission line to the south of this KOP and would therefore be more prominent in the view from this location than the alternative routes that are located to the south of the existing transmission line. All Project routes would add additional structures to the historic landscape, thus having a cumulative impact on the resource. The Project's elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C35 (Figures 3.3-45 and 3.3-46) is located along the Oregon/California NHT, 1.5 to 2 miles west of the Green River and represents the view from Rusty Hill. It is located in an area where emigrant wagons climbed the trail toward Whiskey Basin and Hams Fork and represents one of the many trail braids in the Green River area. The historic landscape at this location is characterized by rust stains on the surrounding rocks deposited by wagon wheels. This location provides a good example of trail segments in Wyoming that represent the feeling and sense of the historic time period of the trail's significant use (Rosenberg and Rosenberg 2006). The Rusty Hill site is currently being

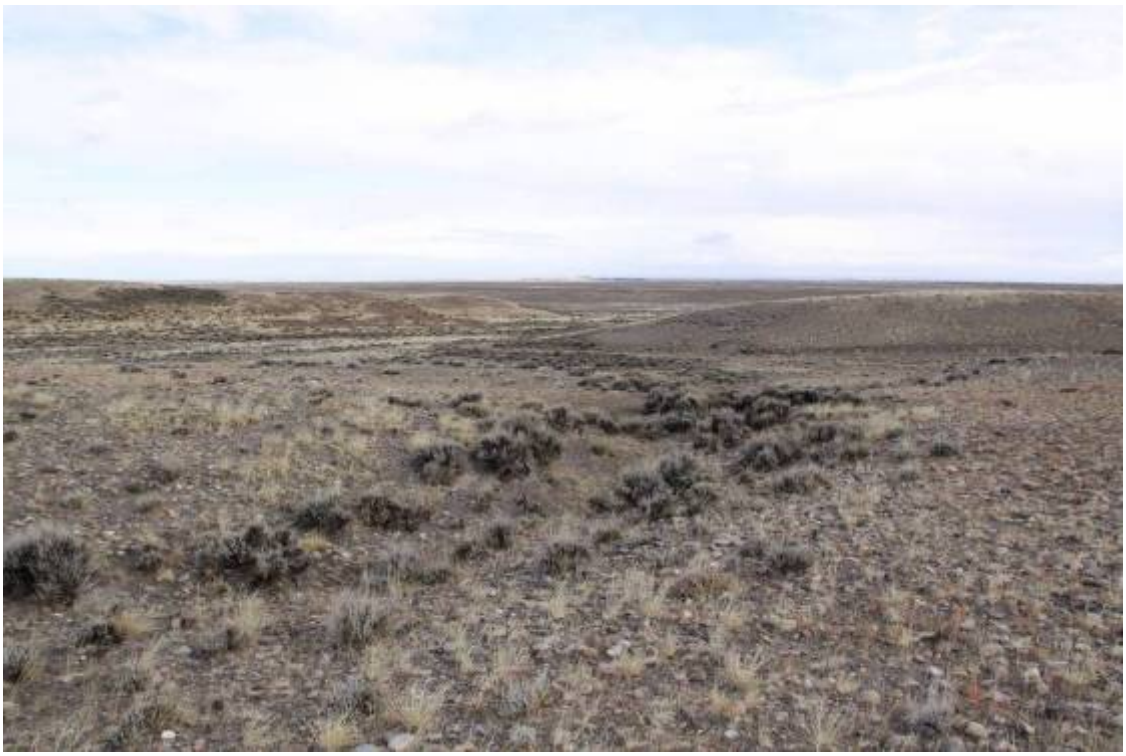

Figure 3.3-45. KOP C35. View of the trail looking toward the northwest from Rusty Hill. Photo taken 9/30/09 at 9:36 a.m.

Figure 3.3-46. KOP C35. View south from Rusty Hill toward the Proposed Route in Segment 4 and Alternative 4A/4F. The lattice transmission line is visible on the horizon. Photo taken 9/30/09 at 9:36 a.m.

considered for nomination to the NRHP. KOP C35 is approximately 3.8 miles north of the Proposed Route in Segment 4, and Alternatives 4A and 4F of the Project.

The resource at this location consists of a swale. The setting contains lattice transmission lines 3.5 mile to the south. State Highway 372 is visible a little over 0.25 mile to the east.

Due to the similarity of the Project's design with existing structures in the area and KOP's distance from the Proposed Route and alternatives, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C36 (Figure 3.3-47) is located on a segment of the Oregon/California NHT that corresponds with Lombard Road west of State Highway 372 (La Barge Road). The KOP is approximately 4.5 miles southeast of Whiskey Buttes and 2 miles north of West Otterson Wash. The KOP is 2.6 miles northeast of the Proposed Route in Segment 4, Alternative 4A, and Alternative 4F.

The resource at this location consists of a two-track road with evidence of recent use. Modern use has widened the road and deepened the ruts in some areas. The setting contains existing lattice transmission lines 3 miles to the south. No other modern structures or intrusions are present in the area.

Figure 3.3-47. KOP C36. Overview of trail facing south toward the Proposed Route in Segment 4 Alternative 4A/4F. Existing lattice transmission line is visible on the horizon. Photo taken 9/30/2009 at 11:16 a.m.

Due to the similarity of the Project's design with existing structures in the area and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak. The proposed Project elements would not dominate the setting. There would not be an adverse impact to the resource at this location.

KOP C37 (Figure 3.3-48) is located on a segment of the Oregon/California NHT that corresponds with Lombard Road west of State Highway 372 (La Barge Road). The KOP is located 1.5 miles northeast of the point where West Otterson Wash crosses Lombard Road, approximately 0.2 mile north of the Proposed Route in Segment 4, Alternative 4A, and Alternative 4F.

The resource at this location consists of a two-track road with evidence of recent use. Modern use has widened the road and deepened the ruts in some areas. The setting is impacted to the north by lattice transmission lines that are located less than 0.25 mile away.

The proposed Project's route would be located to the south of this KOP, away from existing impacts to the cultural landscape. Due to the Project's proximity to this KOP and the introduction of new elements in a new area of the resource's viewshed, the VCR for this KOP is assessed as strong. The proposed Project elements would dominate the setting to the south. There would be an adverse impact to the resource at this location.

Figure 3.3-48. KOP C37. View of Oregon/California NHT facing southwest toward the Proposed Route in Segment 4, Alternative 4A, and Alternative 4F. Trail marker visible in center left of photo. Photo taken 9/30/2009 at 11:34 a.m.

KOP C38 (Figure 3.3-49) is located on a segment of the Oregon/California NHT that corresponds to an unnamed road that connects to State Highway 372. The KOP is located on the upper terrace of the western floodplain of the Green River, approximately 0.5 mile northeast of State Highway 372 and 1.25 miles southeast of where West Otterson Wash crosses the highway. The KOP is 0.3 mile northeast of the Proposed Route in Segment 4, Alternative 4A, and 4.1 miles south of Alternatives 4B, 4C, 4D, 4E, and 4F.

The resource at this location consists of a two-track road with evidence of recent use. The setting is impacted to the north by the existing lattice transmission lines located approximately 0.25 mile from the KOP. A wooden, single-pole transmission line parallels the resource and crosses the trail to the south of this KOP. A plant facility is located approximately 1.5 miles to the east.

The Proposed Route and Route Alternatives are located to the south of this KOP. Although there are transmission structures present in that direction, the proposed Project elements are a different form, size, and material, thus introducing new structural elements to the landscape. The VCR for this KOP is assessed as moderate. The proposed Project elements would be seen and may attract the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-49. KOP C38. View of trail facing southwest toward the Proposed Route in Segment 4 and Alternatives 4A and 4F. Note wooden, single-pole transmission line paralleling trail and crossing trail in background of photo. Photo taken 9/30/2009 at 1:47 p.m.

KOP C39 (Figure 3.3-50) is located on a segment of the Oregon/California NHT that corresponds to an unnamed road that connects perpendicularly to State Highway 372. The KOP is located less than 0.25 mile from KOP 38 on the upper terrace of the western floodplain of the Green River, approximately 0.5 mile east of State Highway 372 and 0.5 mile south of West Otterson Wash. KOP C39 is located 0.3 mile northeast of the Proposed Route in Segment 4, Alternatives 4A, and 4F, and 4.4 miles south of Alternatives 4B, 4C, 4D, and 4E.

The resource at this location consists of a two-track road with evidence of recent use. The setting is impacted to the north by the existing lattice transmission lines. A wooden, single-pole transmission line parallels the trail approximately 0.25 mile to the southeast and crosses the trail to the south of this KOP at State Highway 372. A plant facility is located approximately 1.5 miles to the east.

The Proposed Route and Route Alternatives are located to the south of this KOP. Although there are transmission structures present in that direction, the proposed Project elements are a different form, size, and material, thus introducing new structural elements to the landscape. The VCR for this KOP is assessed as moderate. The proposed Project elements may attract the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-50. KOP C39. Overview of trail facing south towards the Proposed Route in Segment 4 and Alternatives 4A and 4F. Wooden, single-pole transmission line visible in background of photo, paralleling State Highway 372. Photo taken 9/30/2009 at 2:05 p.m.

KOP C105 (Figures 3.3-51 and 3.3-52) is located on a segment of the Oregon/California NHT that is along U.S. Highway 30, 3.3 miles south of the Proposed Route in Segment 4 at the Big Hill historic marker. The marker is approximately 2 miles to the southwest of the actual trail segment located at the crest of the Sheep Creek Hills. Big Hill has been designated as a high-potential site by the NPS.

Access to the resource is through private property and a direct assessment of the resource's condition could not be obtained due to landowner restrictions. The setting, as viewed from the marker toward the Sheep Creek Hills, contains a lattice transmission line that is approximately 2 miles to the northeast.

The Proposed Route in Segment 4 would be located north of the existing lattice transmission lines, 2 miles north of the Big Hill trail segment, decreasing its prominence in the view. Due to the similarity of the Project's design with existing structures, the KOP's distance from the route, and the potential for the elements to blend in with the backdrop in some areas, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-51. KOP C105. View of Big Hill historic marker along U.S. Highway 30. Photo taken 10/09/08 at 2:58 p.m.

Figure 3.3-52. KOP C105. View from Big Hill historic marker toward the Sheep Creek Hills and the Proposed Route in Segment 4. Lattice transmission line is visible on the edge of the agricultural landscape in the middleground of the photo. Photo taken 10/09/08 at 2:58 p.m.

KOP C110 (Figure 3.3-53) is located on a segment of the Oregon/California NHT at the site of the White Hill Trail Monument. White Hill is located on the Hams Fork Plateau on the north rim of Quakenasp Canyon, approximately 1.5 miles west of the Hams Fork River. The KOP is located 1.8 miles north of Alternative 4A. Alternative 4F is 3.0 miles north of the KOP. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-19 and E.3-20).

The White Hill Trail Monument overlooks the Hams Fork River and provides sweeping views of the Uinta Mountains, the Wind River Mountains, and Ham's Plateau. An interpretive sign describes the experiences of emigrants travelling over White Hill and is a popular stop for visitors on the Sublette Cutoff. The setting contains a lattice transmission line to the north and east.

The proposed Project would be located north and parallel to the lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the Alternatives, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements would draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-53. KOP C110. View northeast toward the Proposed Route in Segment 4 of the Project from KOP C110. The lattice transmission line is visible in the middle ground. Photo taken 9/23/2008 at 9:57 a.m.

Opal Wagon Road

KOP C6 (Figures 3.3-54 and 3.3-55) is located on a segment of the Opal Wagon Road approximately 2.6 miles north of Alternatives 4A and 4F, and 1.6 miles west of State Highway 230.

The resource at this location consists of shallow two-track road with distinct ruts. The historic road is in fair condition having been exposed to extensive alluvial and aeolian erosion. The setting is moderately impacted by lattice and wooden, H-frame transmission lines, located 1.5 to 2.5 miles to the south-southeast and northwest, and a power plant located approximately 5 miles to the east.

Due to the similarity of the Project's design with existing structures in the area and the KOP's distance from the Route Alternatives, the VCR for this KOP is assessed as weak. The proposed Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-54. KOP C6. Overview of Opal Wagon Road (48LN949), looking southwest toward Alternative 4F. Photo taken 9/16/09 at 1:15 p.m.

Figure 3.3-55. KOP C6. View from Opal Wagon Road (48LN949), looking southeast toward Alternative 4F with lattice transmission line in skyline view. Photo taken 8/2/10 at 7:53 a.m.

California NHT – Slate Creek Cutoff

KOP C42 (Figure 3.3-56) is located on a segment of the Slate Creek Cutoff, at the California NHT marker. The KOP is located 1.3 miles east of U.S. Highway 189, 0.22 mile north of State Highway 372, and 3.7 miles west of the Proposed Route in Segment 4.

The resource consists of an unused two-track with shallow ruts. The trail is in good condition with minimal alteration from modern use. The Slate Creek Trail marker is visible to the west at the intersection of a two-track road and the trail. Oil and gas tanks are visible to the northeast of this location. State Highway 372 is visible to the south.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different material, form, size, and texture. The KOP's distance from the Proposed Route would allow for the structural elements to blend with the landscape in some areas. The VCR for the KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-56. KOP C42. Overview of Slate Creek Cutoff looking east toward the Proposed Route in Segment 4. Oil and gas tanks are visible in the middle ground. Photo taken 11/11/09 at 11:17 a.m.

KOP C58 (Figure 3.3-57) is located on a segment of the Slate Creek Cutoff, near the California NHT. The KOP is 1.6 miles west of Fontenelle, 1 mile north of Slate Creek Butte, and 1.2 miles northeast of the Proposed Route in Segment 4.

The resource at this location is a well-used two-track road with deepened ruts. The setting contains a wooden, H-frame transmission line approximately 2 to 2.5 miles north. Oil and gas tanks are visible to the south.

The proposed Project's route would be located to the southwest of this KOP, away from existing modern impacts to the cultural landscape. Due to the proposed Project's proximity to this KOP and the introduction of new elements in a new area of the resource's viewshed, the VCR for this KOP is assessed as strong. The proposed Project elements would dominate the setting to the southwest; therefore there would be an adverse impact to the resource at this location.

Figure 3.3-57. KOP C58. Overview of Slate Creek Cutoff looking southwest toward the Proposed Route in Segment 4. Photo taken 11/11/09 at 11:54 a.m.

California NHT – Sublette Cutoff

KOP C7 (Figure 3.3-58) is located 0.2 mile east of KOP C8 at the Alfred Corum Grave site, near the California NHT – Sublette Cutoff. The KOP is located on a flat ridge top that overlooks Robinson Creek to the north, Shuster Basin (North Fork Twin Creek) to the south, and the head of Quakenasp Canyon to the east. Alternative 4A is 1.4 miles to the northeast and Alternative 4F is approximately 2.0 miles to the northeast.

Figure 3.3-58. KOP C7. View from Sublette Cutoff looking northeast toward Alternatives 4A and 4F. Note lattice transmission line in the valley in center of photo. Photo taken 9/17/09 at 10:27 a.m.

The trail resource associated with the gravesite consists of a shallow two-track road that grades into a swale to the west toward Nancy Hill's grave. The setting contains a lattice transmission line that runs east to west across the plateau and into the Robinson Creek drainage approximately 1 mile to the northeast. A natural gas tank is visible approximately 1.5 miles to the west.

Due to the similarity of the Project's design with the existing structures in the area and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C8 (Figures 3.3-59 and 3.3-60) is located at the Nancy Hill gravesite along the California NHT – Sublette Cutoff, on a finger ridge between several deep canyons. The KOP is located on a flat ridge top that overlooks Robinson Creek to the north, Shuster Basin (North Fork Twin Creek) to the south, and the head of Quakenasp Canyon to the east. KOP C8 is approximately 1.5 miles southwest of Alternative 4A and 2.1 miles south of Alternative 4F. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-21 and E.3-22).

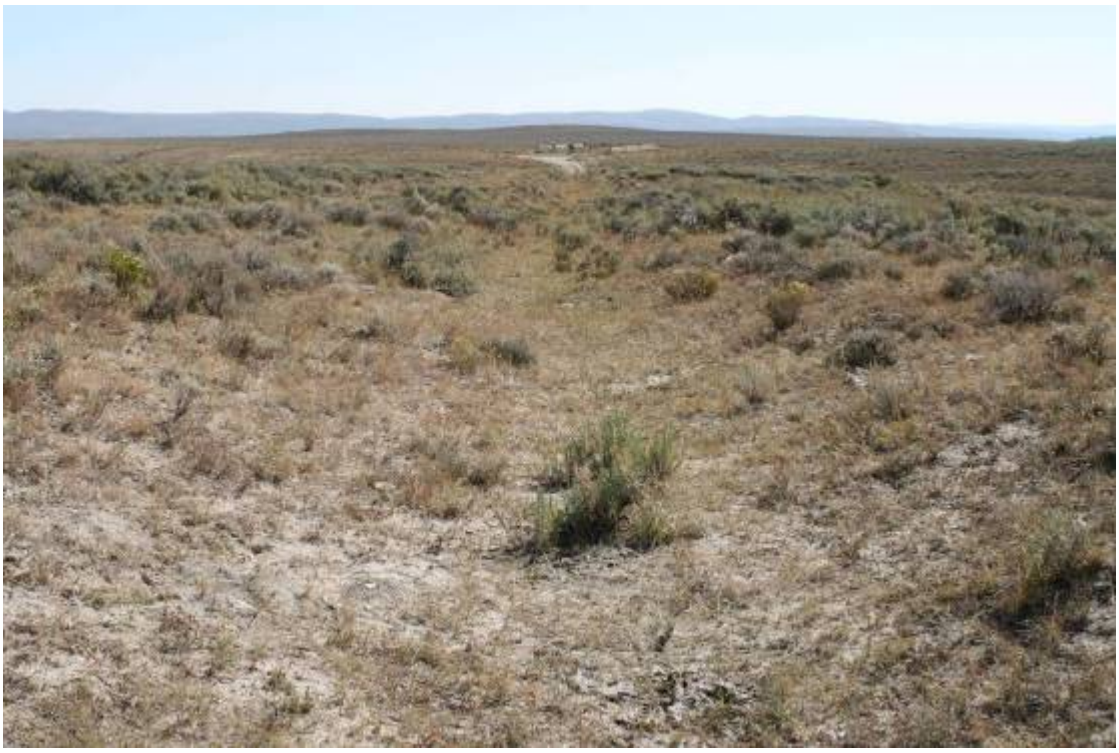

Figure 3.3-59. KOP C8. View of Sublette Cutoff swale, looking east where it is adjacent to the Nancy Hill grave. Photo taken 9/17/09 at 10:27 a.m.

Figure 3.3-60. KOP C8. View from Sublette Cutoff swale, looking northeast toward lattice transmission line. Photo taken 9/17/09 at 10:27 a.m.

The trail resource associated with the gravesite consists of a deep swale with no visible wheel ruts. The setting contains a lattice transmission line that runs east to west across the plateau and into the Robinson Creek drainage 1 mile to the northeast. A livestock water storage tank is visible approximately 1 mile to the west.

Due to the similarity of the Project's design with the existing structures in the area and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C9 (Figure 3.3-61) is located on a segment of the California NHT – Sublette Cutoff at Emigrant Spring, historically one of the largest and most reliable sources of water and firewood on the Hams Fork Plateau (Jensen 1975). The KOP is located 2.5 miles from southwest of Alternative 4A and 3.2 miles from Alternative 4F.

The resource at this location consists of a deep swale with no visible ruts. The setting is impacted by a lattice transmission line 2 miles to the north and 1.25 miles west, but is undisturbed in all other directions.

Due to the similarity of the Project's design with existing structures in the area and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak. The proposed Project would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-61. KOP C9. View from Sublette Cutoff near Emigrant Spring looking northeast toward Alternative 4A. Photo taken 9/17/09 at 11:43 a.m.

KOP C11 (Figure 3.3-62) is located on a segment of the California NHT – Sublette Cutoff in the Pomeroy Basin. This KOP is approximately 2.5 miles east of Commissary Ridge and 1.5 miles west of Oyster Ridge and is 3.3 miles north of Alternative 4A and 4F.

The resource at this location consists of a two-track road with shallow ruts. The setting contains a lattice transmission line ascending Commissary Ridge 3 miles south of the KOP. A water tank is present less than 1 mile west of the trail.

The Proposed Route would be located to the southwest in front of and parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the KOP's distance from the Route Alternatives, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project may draw attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

Figure 3.3-62. KOP C11. View of Sublette Cutoff, standing at trail marker, facing southwest toward Alternative 4F. The lattice transmission line is visible ascending Commissary Ridge on the horizon. Photo taken 9/25/08 at 7:03 a.m.

KOP C28 (Figure 3.3-63) is located at the junction of two California NHT – Sublette Cutoff variants approximately 0.25 mile north of Quakenasp Canyon. It is 1.3 miles south of Alternative 4A and 2.1 miles south of Alternative 4F.

Figure 3.3-63. KOP C28. View of northeast trending variant of the Sublette Cutoff, standing at junction, facing northeast toward Alternative 4A. Photo taken 10/22/09 at 10:50 p.m.

The resource at this location consists of two trail variants, one that heads northwest-southeast along the northern Quakenasp Canyon edge. The other variant connects from that trail on the plateau and descends into the Meadow Creek drainage. The setting contains a lattice transmission line 0.5 mile to the north and a north-to-south trending fence line bisecting the second variant. The setting is undisturbed in all other directions.

The Proposed Route would be located north and parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project may draw attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C29 (Figure 3.3-64) is located on a segment of the California NHT – Sublette Cutoff at the summit of Dempsey Ridge. Rock Creek and Rock Creek Ridge are located 1 to 2 miles west. Alternative 4A is approximately 2.6 miles north of the KOP and 4.6 miles northeast to Alternative 4F.

The resource at this location is a well-used two-track road, deeply rutted from winter and spring use. Weather gauging stations are visible northwest of the trail and a lattice transmission line is approximately 1 mile to the northeast.

Figure 3.3-64. KOP C29. View from Sublette Cutoff on the summit, facing northeast toward lattice transmission line. Photo taken 10/22/09 at 11:55 p.m.

The proposed Project would be located north and parallel to the lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The Proposed Project may draw attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C30 (Figures 3.3-65, 3.3-66, and 3.3-67) is located on a segment of the California NHT – Sublette Cutoff on Stoffer Ridge, approximately 1.5 miles east of the town of Cokeville and 1.25 miles east of Big Hill. It is situated east of where the Sublette Trail crosses Stoffer Ridge and Road 4211. The KOP is 3.1 miles from the Proposed Route in Segment 4, approximately 0.5 mile north of Alternative 4A, and 2.5 miles south of Alternative 4F.

The resource at this location is a two-track road with shallow ruts. The trail is currently used for recreation and ranching with minimal evidence of disturbance. The views toward Rock Creek Ridge to the north and south are relatively undisturbed although a lattice transmission line is visible on the skyline descending the west slope of Rock Creek Ridge approximately 4 miles to the south. A historic structure is visible 1 mile to the east.

Due to the similarity of the Project's design with the existing structures in the area and the KOP's relative proximity to the Route Alternatives, the VCR for this KOP is assessed as moderate for Alternative 4A and weak for the Proposed Route in Segment 4 and Alternative 4F. The proposed Project elements from Alternative 4A would draw

Figure 3.3-65. KOP C30. View of Sublette Cutoff from Stoffer Ridge, facing south/southeast toward Alternative 4A. Trail ruts are visible in the foreground and middle ground. Photo taken 10/23/09 at 2:10 p.m.

Figure 3.3-66. KOP C30. View from Sublette Cutoff from Stoffer Ridge, facing south/southeast toward Alternative 4A. Trail ruts are visible in the foreground and middle ground. The lattice transmission line is visible on top of the ridge to the south. Photo taken 8/1/10 at 12:12 p.m.

Figure 3.3-67. KOP C30. View of Sublette Cutoff from Stoffer Ridge facing northeast toward Alternative 4F. Photo taken 8/1/10 at 12:12 p.m.

the attention of the casual observer but would not dominate the setting; therefore, there would be an adverse impact to the resource at this location. There would not be an adverse impact to the resource from the Proposed Route in Segment 4 and Alternative 4F.

KOP C31 (Figures 3.3-68 and 3.3-69) is located on a segment of the California NHT – Sublette Cutoff that crests Rock Creek Ridge with views of Dempsey Ridge to the east and Cokeville to the northwest. The KOP is 0.5 mile south of Alternative 4A and 4.9 miles east of Alternative 4C and 4E.

The resource at this location consists of a well-used two-track road that has been bladed periodically. An existing transmission line, 0.5 mile from the KOP, is visible ascending Boundary Hills to the northwest and Dempsey Ridge to the east.

The proposed Project would be located north and parallel to the existing lattice transmission line. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the alternatives, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The proposed elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-68. KOP C31. View of Sublette Cutoff from Rock Creek Ridge facing northeast toward Alternative 4A. Photo taken 10/25/09 at 10:30 a.m.

Figure 3.3-69. KOP C31. View from Sublette Cutoff on Rock Creek Ridge facing west toward Alternatives 4D and 4E. Photo taken 10/25/09 at 10:30 a.m.

KOP C56 (Figure 3.3-70) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff, north of Sullivan Hollow. The KOP is located 0.5 mile south of the Proposed Route in Segment 4. Fontenelle Creek is located 1 mile to the north.

The resource at this location consists of a swale with shallow ruts. The setting contains a wooden, H-frame transmission line that parallels the trail approximately 1 mile to the east and ranches in the Fontenelle Creek Valley are clearly visible.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different material, form, and texture. The VCR for the KOP is assessed as moderate to strong. The proposed Project elements would draw the attention of the casual observer and would dominate the setting; therefore, there would be an adverse impact to the resource at this location (see Appendix G-1, Figure K-1a/b). This setting was also analyzed from the north at KOP 1288, described in Section 3.2 – Visual Resources and depicted in a photo simulation (see Appendix G-1, Figure K-1c/d).

Figure 3.3-70. KOP C56. View from Sublette Cutoff facing northeast toward the Proposed Route in Segment 4. Note ranching structures and wooden, H-frame transmission line in middleground of photo. Photo taken 11/11/09 at 9:40 a.m.

KOP C57 (Figure 3.3-71) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff, 0.5 mile south of Sullivan Hollow. Fontenelle Creek is 2 miles to the north and Willow Creek is 0.75 mile to the south. The Proposed Route in Segment 4 of the Project is 1.4 miles to the north. The KOP is situated on a broad east-to-west trending ridge on a two-track road that bisects the trail. Photographic simulations

depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-23 and E.3-24).

Figure 3.3-71. KOP C57. View of Sublette Cutoff Trail south of Sullivan Hollow. View is facing northeast towards the Proposed Route in Segment 4. Trail swale is visible in center of photograph. Photo taken 11/11/09 at 10:08 a.m.

The resource at this location consists of a shallow two-track road on the southwest side of the KOP and a swale on northeast side of the KOP. The two-track road is in good condition with minimal disturbance. Wind and water erosion have deepened and altered the trail remnants in the swale. The setting at this KOP is undisturbed in all directions, except for a wooden, H-frame transmission line that is visible on the horizon approximately 3 miles to the east.

The Proposed Route would be located to the north of this KOP and would introduce new structural elements to this area. The distance of the Project from this location

allows the features to blend in with the landscape, decreasing their prominence within the view; therefore, the VCR for this KOP is assessed as moderate. The proposed Project elements would dominate the setting to the north; therefore, there would be an adverse impact to the resource at this location.

KOP C121 (Figures 3.3-72 and 3.3-73) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff on the south side of Holden Hollow, approximately 0.5 mile north of Fontenelle Creek and 2 miles northwest of Fontenelle Reservoir. It is 2.4 miles north of the Proposed Route in Segment 4. The Johnny Williams gravesite is located approximately 0.25 mile south of the KOP. The gravesite is fenced and features an interpretive sign placed by OCTA in 1987. A photographic simulation depicting indirect (visual) effects to the resource has been generated for the KOP (see Figures E-25 and E-26 in Appendix E).

The trail at this location consists of a well-defined swale, but portions have been utilized as a two-track road and have been exposed to extensive alluvial erosion, making individual ruts difficult to discern. A network of heavily used two-track roads is present in the area and cultivated agricultural fields are visible approximately 0.75 mile south of the KOP. A transmission line with wooden, single-post supports runs southeast-to-northwest within 0.1 mile of the KOP. A second transmission line with wooden H-frame support structures runs generally north-to-south 0.3 mile west of the KOP. These two lines converge and parallel one another northwest of the KOP and continue north over Holden Hill, located approximately 1 mile to the north.

Figure 3.3-72. KOP C121. View of the Sublette Cutoff, facing north/northwest. Trail is visible as two-track in center of photo. Photo taken 8/2/10 at 8:52 a.m.

Figure 3.3-73. KOP C121. View from the Sublette Cutoff, facing south/southwest toward the Proposed Route in Segment 4. Johnny Williams' gravesite is visible at the edge of the sage and agricultural field just to the right of the utility pole in the foreground. Photo taken 8/2/10 at 8:52 a.m.

The proposed Project is located southwest of the existing transmission lines and beyond the agricultural fields. View of the Project is largely obstructed by topography. The Project's design shares some similarities with existing structures but will introduce new elements that are of different form and color. Due to this factor and the KOP's distance from the Proposed Route, the VCR for this KOP is assessed as weak to moderate. The Project's elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C122 (Figures 3.3-74, 3.3-75, and 3.3-76) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff on the top of Holden Hill, approximately 2.1 miles west of U.S. Highway 189 and Fontenelle Reservoir. It is located 3.8 miles north of the Proposed Route in Segment 4.

The resource at this location consists of a well-worn, southeast-to-northwest trending two-track road. A transmission line with wooden, single-post support poles can be seen ascending Holden Hill to the south-southeast. Another transmission line with wooden, H-frame support structures can be seen ascending Holden Hill to the south-southwest. A natural gas pipeline marked with signs bisects the trail approximately 60 feet east-northeast of the KOP and is further evident through disturbance to the ground surface. Two two-track roads running southeast-to-northwest through Holden Hollow are also

Figure 3.3-74. KOP C122. View of the Sublette Cutoff, facing east/southeast. Trail is visible as two-track in center of photo. Photo taken 8/2/10 11:47 a.m.

Figure 3.3-75. KOP C122. View from the Sublette Cutoff, facing east/southeast toward the Proposed Route in Segment 4. Photo taken 8/2/10 11:47 a.m.

Figure 3.3-76. KOP C122. View from the Sublette Cutoff, facing east/southeast toward the Proposed Route in Segment 4. Photo taken 8/2/10 11:47 a.m.

visible to the south of the KOP. Portions of Fontenelle Reservoir can be seen approximately 2 miles to the east.

The proposed Project is located southeast of the existing transmission lines and beyond the agricultural fields in the valley. Views of the Project are largely obstructed by topography. The Project's design shares some similarities with existing structures. Due to this factor, the KOP's distance from the Proposed Route, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. There would be no adverse impact to the resource at this location.

KOP C123 (Figures 3.3-77, 3.3-78, 3.3-79, and 3.3-80) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff at the top of Holden Hill, approximately 1 mile west of U.S. Highway 189 and Fontenelle Reservoir, at a point where two variants of the Sublette Cutoff diverge from one another. It is 3.7 miles north of the Proposed Route in Segment 4. A concrete trail marker, from which the metal medallion has been removed, is located at the KOP. One variant of the Sublette Cutoff runs north-to-south through this location, while the other follows a west-northwestward course.

The resource at this location consists of two intersecting shallow two-track roads (Class 2 MET). The trail segment heading west-northwest from here is relatively well-worn, showing signs of recent vehicle traffic, whereas the north-south variant appears

Figure 3.3-77. KOP C123. View of the Sublette Cutoff, facing west. Trail is visible as two-track in center of photo. Photo taken 8/2/10 12:24 p.m.

Figure 3.3-78. KOP C123. View of the Sublette Cutoff, facing south. Trail is visible as two-track in center of photo. Photo taken 8/2/10 12:24 p.m.

Figure 3.3-79. KOP C123. View from the Sublette Cutoff, facing south toward the Proposed Route in Segment 4. Photo taken 8/2/10 12:24 p.m.

Figure 3.3-80. KOP C123. View from the Sublette Cutoff, facing southwest toward the Proposed Route in Segment 4. Photo taken 8/2/10 12:24 p.m.

somewhat less traveled, especially south of this point. Two parallel transmission lines—one with single-pole supports and the other with H-frame supports—run north-to-south across the trail approximately 400 feet north of the KOP. These transmission lines can be seen into the distance on the southern horizon, ascending the ridge on the south side of Holden Hollow. A series of communication towers are visible on the southern horizon, sky-lined on a distant ridge, approximately 5 miles away. Cultivated agricultural fields, structures, and fence lines can be seen to the south at a distance of approximately 2 miles.

The proposed Project is located south of the existing transmission lines and beyond the agricultural fields in the valley. Views of the Project are largely obstructed by topography. The Project's design shares some similarities with existing structures. Due to this factor, the KOP's distance from the Proposed Route, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. There would be no adverse impact on the resource at this location.

KOP C126 (Figures 3.3-81 and 3.3-82) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff between Dempsey Ridge and Rock Creek Ridge, 0.5 mile north of Little Beaver Creek, 0.8 mile east of Rock Creek, and 1 mile southwest of Dempsey Summit. Alternative 4A is located 3.6 miles north of the KOP; Alternative 4C is located 6.3 miles to the west, and Alternative 4A is located 3.6 miles to the northeast. Due to topography, only a portion of Alternative 4A would be visible from this location.

Figure 3.3-81. KOP C126. View of the Sublette Cutoff, facing northeast. Trail is visible as vegetation change. Photo taken 8/3/10 10:59 a.m.

Figure 3.3-82. KOP C126. View from the Sublette Cutoff, facing northeast toward Alternative 4F. Existing transmission line is visible ascending ridge in background. Photo taken 8/3/10 10:59 a.m.

The resource at this location consists of an east-to-west-running, undisturbed swale with clearly visible ruts descending south-southwest from Dempsey Summit to the valley floor west of the KOP. A transmission line with metal lattice support structures is visible approximately 5 miles to the north. A communication tower is skylined on the distant horizon to the south. The visual setting is otherwise undisturbed in the area.

The proposed Project is located north of the existing transmission line. Views of the Project are largely obstructed by topography. The Project's design shares some similarities with existing structures. Due to this factor and the KOP's distance from the Proposed Route, the VCR for this KOP is assessed as weak. There would be no adverse impact on the resource at this location.

California NHT – Dempsey-Hockaday Cutoff

KOP C10 (Figures 3.3-83 and 3.3-84) is located on a segment of the Sublette Cutoff where it converges with the California NHT – Dempsey-Hockaday Cutoff, on the east side of Dempsey Ridge overlooking Dempsey Basin. This KOP is located approximately 2.5 miles southwest of Alternative 4F. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-27 and E.3-28).

Figure 3.3-83. KOP C10. Overview of the Sublette Cutoff, facing north and slightly west, as it turns westward to join the Dempsey-Hockaday Cutoff in the saddle. Photo taken 9/17/09 at 1:27 p.m.

Figure 3.3-84. KOP C10. Looking northeast across Dempsey Basin toward Alternative 4F from the Sublette Cutoff trail marker. Photo taken 9/17/09 at 1:27 p.m.

A trail marker has been placed in this location and a two-track road is visible downslope in the saddle as the trail crests Dempsey Ridge and converges with the Sublette Cutoff. No evidence of a trail trace is visible from this point descending the east side of Dempsey Ridge. Some modern vehicle use is evident near the trail marker, and it appears that portions of the resource have been used as a pull-out or parking area near CR 4211. The swales on the saddle of Dempsey Ridge are otherwise unused and show no evidence of modern disturbance. Although some ranching structures are visible at the bottom of Dempsey Basin, the setting is generally undisturbed.

Views from this KOP of Alternative 4A are screened by topography. Alternative 4F is located to the north of this KOP, spanning across the Hams Fork Plateau and the Dempsey Basin. This alternative would introduce new structural elements to this area of the viewshed. The distance of the Project from this location allows the elements to blend in with the landscape in some areas, decreasing their prominence within the view; therefore, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C41 (Figures 3.3-85 and 3.3-86) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff that connects to CR 4220 looking west as the trail crosses the Dempsey Basin. The KOP is approximately 1.9 miles east of Lake Viva Naughton, 4.8 miles north of Alternative 4A, and 3.7 miles north of Alternative 4F.

Figure 3.3-85. KOP C41. View from Dempsey-Hockaday Cutoff, facing west, across the Dempsey Basin, toward Alternative 4F. Note ranch houses in middleground of photo. Photo taken 9/16/09 at 5:04 p.m.

Figure 3.3-86. KOP C41. View from Dempsey-Hockaday Cutoff, facing south toward Alternative 4F. Photo taken 9/16/09 at 5:04 p.m.

The resource at this location consists of a two-track road with shallow ruts. The condition of the trail is good, exhibiting light, modern use, as it descends downslope to the bottom of Dempsey Basin. The setting contains a few ranch houses located in the valley approximately 2 miles west from this KOP.

Alternative 4F would be located to the west of this KOP spanning across the Hams Fork Plateau and the Dempsey Basin and south where it crosses the basin south of Lake Viva Naughton. This Route Alternative would introduce new structural elements to this area of the viewshed. The distance of the Project from this location allows the elements to blend in with the landscape in some areas, decreasing their prominence within the view; therefore, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C124 (Figures 3.3-87 and 3.3-88) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff, in the Dempsey Basin, north of the South Fork of Dempsey Creek. The KOP is approximately 2 miles west-northwest of Lake Viva Naughton and 0.8 mile southwest of Pink Hill. Alternative 4F is located 0.6 mile to the west. Due to topography, only Alternative 4F would be visible from this location.

The resource at this point consists of a shallow two-track road. Segments of other two-track roads are visible 400 feet to the north and 500 feet to the south. A curvilinear fence line can be seen approximately 200 feet to 250 feet to the east, south, and west. The setting is otherwise undisturbed.

Figure 3.3-87. KOP C124. View of the Dempsey-Hockaday Cutoff, facing southwest. Photo taken 8/2/10 3:57 p.m.

Figure 3.3-88. KOP C124. View from the Dempsey-Hockaday Cutoff, facing west toward Alternative 4F. Photo taken 8/2/10 3:57 p.m.

Alternative 4F would introduce new structural elements to the area. The VCR for this KOP is assessed as strong. There would be an adverse impact to the resource at this location.

KOP 620 (Figure 3.3-89) is located on a segment of the Oregon/California NHT Dempsey-Hockaday Cutoff in the Dempsey Basin. The KOP is just over 0.1 mile north of the South Fork of Dempsey Creek, approximately 3.0 miles west-northwest of Lake Viva Noughton, and 0.5 mile west of Pink Hill. Alternative 4F is located 0.3 mile to the west and 0.2 mile to the northwest. A photographic simulation depicting indirect (visual) effects to the resource has been generated for the KOP (Appendix G-1, Figure K-5a/b).

The resource at this location consists of a shallow two-track road. The setting in this area is undisturbed in all directions. Alternative 4F would introduce new structural elements to the area. The VCR for this KOP is assessed as strong. There would be an adverse impact to the resource at this location.

Figure 3.3-89. KOP 620. View of a Segment of the California/Oregon NHT Dempsey-Hockaday Cutoff, facing east. Photo taken 9/24/08 3:33 p.m.

KOP C125 (Figure 3.3-90) is located on a segment of the California NHT – Dempsey-Hockaday Cutoff, in the Dempsey Basin. The KOP is 0.2 mile north of the South Fork of Dempsey Creek, approximately 3.3 miles west-northwest of Lake Viva Naughton, and 0.9 mile west of Pink Hill. Alternative 4F is located 0.4 mile to the west. Due to topography, only Alternative 4F would be visible from this location. A photographic simulation depicting indirect (visual) effects to the resource has been generated for the KOP (see Figures E-29 and E-30 in Appendix E).

Figure 3.3-90. KOP C125. View of the Dempsey-Hockaday Cutoff, facing east toward Alternative 4F. Photo taken 8/2/10 4:25 p.m.

The resource at this location consists of a shallow two-track road. The setting in this area is undisturbed in all directions.

Alternative 4F would introduce new structural elements to the area. The VCR for this KOP is assessed as strong. There would be an adverse impact to the resource at this location.

Historic Resources

KOP C32 (Figures 3.3-91 and 3.3-92) is located on the northeast corner of the Susanna Lewis Homestead property boundary. The site is located approximately 9.2 miles west and 0.7 mile south of Kemmerer on CR 331, on the west side of the road. The KOP is located approximately 450 feet south of Alternatives 4B and 4C, and 1.9 miles north of Alternatives 4D and 4E.

The setting contains a wooden, H-frame transmission line less than 0.25 mile to the north and views of traffic on U.S. Highway 30 approximately 0.75 mile to the northeast.

Figure 3.3-91. KOP C32. View from the Susanna Lewis Homestead, looking west towards Alternatives 4B and 4C. Photo taken 10/25/09 at 1:10 p.m.

Figure 3.3-92. KOP C32. View from the homestead facing south towards Alternatives 4B and 4C. Photo taken 10/25/09 at 1:10 p.m.

Alternatives 4B and 4C are located to the south away from existing modern impacts to the setting of this resource.

The Project would introduce new structural elements to setting. Due to this factor and the proximity of the KOP to the Route Alternatives, the VCR for this KOP is assessed as strong for Alternatives 4B and 4C, and moderate for Alternatives 4D and 4E. The Project elements would dominate the setting. There would be an adverse impact to the resource at this location.

KOP C33 (Figures 3.3-93 and 3.3-94) is located at the 1880s homestead of Frederick S. Rawlings, one of the earliest settlers of the Fossil area. KOP C33 is located on the southwest corner of the site boundary, located approximately 1,000 feet northwest of Alternatives 4B and 4C.

The setting contains modern houses, as well as U.S. Highway 30 and railroad tracks, 0.8 mile to the north. Modern signs for an underground pipeline are visible 0.3 mile to the south, and a wooden, H-frame transmission line is prominent in the view 0.5 mile to the south.

Figure 3.3-93. KOP C33. View of one of the standing structures at the Rawlings Homestead facing southwest toward Alternatives 4B and 4C. Photo taken 10/25/09 at 1:40 p.m.

Figure 3.3-94. KOP C33. View from the Rawlings Homestead looking southeast towards Alternatives 4B and 4C. Note view of existing transmission lines. Photo taken 10/25/09 at 1:40 p.m.

The Route Alternative are located south of and parallel to the existing transmission line where views are limited by topography. Due to this factor, the similarity of the Project's design with existing structures in the area, and the potential for elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C21 (Figures 3.3-95 and 3.3-96) is located at the Red Rock Pass Cemetery (also known as the Jefferson Hunt Memorial). The KOP is on the east side of U.S. Highway 91, overlooking Marsh Valley to the north, and is approximately 2.2 miles south of the Proposed Route in Segment 4.

The setting contains a lattice transmission line 0.5 mile to the north, views of traffic on U.S. Highway 91, the UPRR less than 0.25 mile to the northeast, and several houses visible in all areas of the landscape.

Due to the similarity of the Project's design with existing structures in the area and KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-95. KOP C21. View of Red Rock Pass Cemetery (Jefferson Hunt Memorial), looking northeast from top of the roadside monument. Photo taken 10/15/09 at 9:23 a.m.

Figure 3.3-96. KOP C21. View from the cemetery looking northeast toward the Proposed Route in Segment 4. Photo taken 10/15/09 at 9:23 a.m.

Segment 5

Segment 5, as proposed, would link the Populus and Borah Substations with a 54.6-mile single-circuit 500-kV line. Forty-four acres of the expansion of the Populus and Borah Substations are attributed to Segment 5. There are five Route Alternatives including two proposed by the BLM to avoid the Deep Creek Mountains (5A and 5B; 8 miles and 19 miles longer than the comparison portion of the Proposed Route), one preferred by Power County that crosses the Fort Hall Indian Reservation (5C; 6 miles shorter than the comparison portion of the Proposed Route), one originally proposed by the Proponents (5D; 2 miles shorter than the comparison portion of the Proposed Route but located within more agricultural lands), and one proposed by Power County as an alternative approach to the Borah Substation (5E) (see Appendix A, Figure A-7).

California NHT – Hudspeth Cutoff

KOP C24 (Figure 3.3-97) is located on a segment of the California NHT – Hudspeth Cutoff that corresponds to the West Sublette Road, also known as S Road. The KOP is located on the two-track road where it begins to ascend the adjacent Cedar Mountains, approximately 1.4 miles northeast of the Proposed Route in Segment 5, 1.8 miles northeast of Alternatives 5A and 5B, and 2.7 miles northeast of the Proposed Route in Segment 7 and Alternatives 7H and 7I.

Figure 3.3-97. KOP C24. View from Hudspeth Cutoff facing southwest toward the Proposed Route in Segment 5. Photo taken 10/17/09 at 12:13 p.m.

The resource at this location consists of a well-used two-track road. The setting contains agricultural structures and ranch houses that are visible in all directions.

Views of the Project to the west and south are screened by topography. Views to the southeast are intermittent. Due to the KOP's distance from the Proposed Route and Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

KOP C25 (Figure 3.3-98) is located on a segment of the California NHT – Hudspeth Cutoff that parallels Hermits Ville Road. The KOP is located on the east side of the road on the toe-slope of a hill approximately 0.2 mile northeast of the Proposed Route in Segment 7, 1.3 miles southwest of the Proposed Route in Segment 5, and 0.5 mile southeast of Alternatives 5A, 5B, and 5C. Alternatives 7A, 7B, 7H, and 7I are screened by topography. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-31 and E.3-32).

The resource at this location consists of a deep swale with no visible wheel ruts. Vegetation is very thick and the bottom of the swale is not visible for closer examination. A wooden, H-frame and lattice transmission line crosses the trail approximately 1,000 feet to the northeast.

Figure 3.3-98. KOP C25. View of Hudspeth Cutoff, looking north-northeast towards the Proposed Route in Segment 5. The trail is located in the bottom right corner of photograph, obscured by dense vegetation. Photo taken 10/17/09 at 3:19 p.m.

Views of the all Project routes near this KOP are intermittent and screened in some areas by topography. Due to the KOP's distance or proximity to the Proposed Route and Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed weak to moderate for the Proposed Route in Segment 5 and Alternative 5C, and strong for the Proposed Route in Segment 7 and Alternatives 5A and 5B. The proposed Project elements may dominate the setting or draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Oregon/California NHT

KOP C26 (Figure 3.3-99 and 3.3-100) is located on a segment of the Oregon/California NHT near an NPS trail interpretive area on the east side of I-86/U.S. Highway 30, within the rocky outcrops of Massacre Rocks State Park. This segment has been designated as a high-potential route segment by the NPS. KOP C26 is approximately 4 miles southwest of Alternative 5D and 4.3 miles southwest of Segment 5 of the Proposed Route.

The resource at this location consists of a deep swale with no visible wheel ruts. Tourist activities have created paths in and around the trail and water erosion has deepened the swale in areas with steeper slopes. I-86/U.S. Highway 30 parallels the trail through this area and is highly visible at this location. An adjacent highway rest stop and several residential properties are visible. A lattice transmission line is located 5.5 miles to the north-northeast.

Figure 3.3-99. KOP C26. View of trail at Massacre Rocks State Park. Standing near trail looking southwest at trail marker and trail ruts sign. Trail swale is located 3 feet south of trail signs. Photo taken 10/18/09.

Figure 3.3-100. KOP C26. View from trail at Massacre Rocks State Park facing northeast toward Alternative 5D and the Proposed Route in Segment 5. Highway and rest stop in middleground view. Photo taken 10/18/09 12:08 p.m.

Due to the similarity of the Project's design with existing structures in the area and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak. Views of the Project are screened in some areas by topography from this location. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Segment 6

Segment 6 is an existing transmission line linking the Borah and Midpoint Substations; it is now operated at 345 kV but would be changed to operate at 500 kV. This segment has no Route Alternatives. Existing support structures would be used and impacts would be limited to within approximately one-quarter mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Thirty-one acres of the expansion of the Borah and Midpoint Substations are attributed to Segment 6. Changes in the two substations would allow it to be operated at 500 kV (see Appendix A, Figure A-8).

Segment 7

Segment 7, as proposed, would link the Populus and Cedar Hill Substations with a 118.1-mile single-circuit 500-kV line. Forty-two acres of the expansion of the Populus and the construction of the Cedar Hill Substations and 1 acre for two regeneration sites are attributed to Segment 7. In addition to the Proposed Route, which is principally on private lands, Route Alternatives have been proposed by the BLM to avoid the Deep

Creek Mountains (7A and 7B; which are 5 miles and 11 miles longer than the comparison portion of the Proposed Route), by local landowners (7C, 7D, 7E, 7F, and 7G, which all represent minor adjustments proposed to address local issues), by the Southern Idaho Task Force to avoid private agricultural lands (7I or the State Line Route, which is 55 miles longer than the Proposed Route and would require 0.5 acre for an additional regeneration site), and by the Proponents to avoid the State Line Route (7H, which is 10 miles longer than the Proposed Route). Alternative 7J, which is a variant of the State Line Route also proposed by the Southern Idaho Task Force, wouldn't terminate at Cedar Hill Substation. This alternative, referred to as the Rogerson Alternative, would require a different substation be constructed near a 345-kV existing transmission line (approximately 24 miles southwest of Cedar Hill Substation; see Appendix A, Figure A-9). The tables and discussion in this document compare 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of 143.9 miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

California NHT – Hudspeth Cutoff

KOP C22 (Figure 3.3-101) is located on segment of the California NHT – Hudspeth Cutoff that corresponds to an unnamed road forking from Jensen Pass Road. The KOP is located on top of the ridge south of the two-track road, and is approximately 2.5 miles southeast of Alternatives 7B, 7H, and 7I/7J, and 2.9 miles south of Alternative 5B.

Figure 3.3-101. KOP C22. View from Hudspeth Cutoff facing northwest toward Alternatives 7B, 7H, 7I/7J, and 5B. Photo taken 10/5/09 at 1:36 p.m.

The resource at this location consists of a two-track road that is moderately used by hunters. The setting contains agricultural structures that are visible 2 to 3 miles to the west.

Views of the alternatives are limited by topography to a small area to the northwest. Due to the KOP's distance from the Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

KOP C23 (Figure 3.3-102) is located on a segment of the California NHT – Hudspeth Cutoff, also called Sublette Canyon Road, and is located on a slope of the west side of a saddle, as the road descends into the valley. KOP C23 is located approximately 3.1 miles southeast of 7B, 7H, and 7I/7J, and 3.4 miles south of Alternative 5B.

Figure 3.3-102. KOP C23. View of Hudspeth Cutoff facing west toward Alternatives 7B, 7H, 7I/7J, and 5B. Photo taken 12/3/09 at 11:35 a.m.

The resource at this location consists of a two-track road with evidence of minimal use by hunters in the area. The setting contains agricultural structures that are visible 2 to 3 miles to the west.

Views of the Alternatives are limited by topography to a small area to the northwest. Due to the KOP's distance from the Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

KOP C65 (Figure 3.3-103) is located on a segment of the California NHT – Hudspeth Cutoff, on a flat plain north of Meadow Creek. The KOP is approximately 1.6 miles north of Alternative 7H and 3.5 miles north of Alternative 7I/7J.

The resource at this location is a two-track road paralleling a shallow swale. The setting contains feedlot facilities approximately 1 mile to the west-northwest; a wooden, single-pole transmission line paralleling the dirt road that bisects the trail approximately 1 mile to the east; and agricultural structures that are visible on the landscape in all directions.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form. Due to the KOP's distance to the Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed weak to moderate for both alternatives. The Proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-103. KOP C65. View from Hudspeth Cutoff facing southeast toward Alternatives 7H and 7I/7J. Photo taken 11/15/09 at 3:05 p.m.

KOP C66 (Figure 3.3-104) is located on a segment of the California NHT – Hudspeth Cutoff along a flat plain just south of Meadow Creek. It is approximately 2 miles north of Alternatives 7H and 7I/7J.

The resource at this location consists of a wide, shallow swale. The setting contains a wooden, single-pole transmission line 0.25 mile to the north. Agricultural structures are visible on the landscape in all directions.

Figure 3.3-104. KOP C66. View of Hudspeth Cutoff facing southwest toward Alternative 7H. Photo taken 11/15/09 at 3:30 p.m.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, size, and material. Due to the KOP's distance to the Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as moderate for both alternatives. The proposed Project elements would draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

KOP C68 (Figure 3.3-105) is located on a segment of the California NHT – Hudspeth Cutoff, at the intersection of Twin Canyons and the South Fork of Sublette Creek. The KOP is located in the canyon for South Sublette Creek, approximately 2 miles northwest of Alternatives 7H and 7I/7J. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-33 and E.3-34).

Figure 3.3-105. KOP C68. View of Hudspeth Cutoff looking east toward Alternative 7H and 7I/7J. Trail is visible as swale to the left of the marker. Photo taken 11/16/09 at 10:21 a.m.

The trail at this location consists of a deep swale with visible wheel ruts. There are no modern intrusions to the setting at this location.

Views of the Project route near this KOP are intermittent and screened in most areas by topography. Due to the KOP's proximity to the alternatives, the VCR for this KOP is assessed as strong for Alternatives 7H and 7I/7J. The proposed Project elements may dominate the setting; therefore, there would be an adverse impact to the resource at this location.

KOP C69 (Figure 3.3-106) is located on a segment of the California NHT – Hudspeth Cutoff near South Fork Sublette Creek, between Elbow Canyon to the north and Kossman Canyon to the south approximately 0.7 mile north of Alternatives 7H and 7I/7J.

The resource at this location is a bladed road. There are no modern intrusions to the setting at this location.

Views of the Project route near this KOP are intermittent and screened in most areas by topography. Due to the KOP's proximity to the Route Alternatives, the VCR for this KOP is assessed as strong for Alternatives 7H and 7I/7J. The proposed Project elements may dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-106. KOP C69. View of Hudspeth Cutoff looking southeast toward Alternatives 7H and 7I/7J. Photo taken 11/16/09 at 10:21 a.m.

KOP C70 (Figure 3.3-107) is located on a segment of the California NHT – Hudspeth Cutoff, in the canyon for South Fork Sublette Creek, between Eyrie Canyon to the north and Park Canyon to the south. KOP C70 is located approximately 0.8 mile south of Alternatives 7H and 7I/7J.

The resource at this location is a bladed road. There are no modern intrusions to the setting at this location.

Views of the Project route near this KOP are intermittent and screened in most areas by topography. Due to the KOP's proximity to the Route Alternatives, the VCR for this KOP is assessed as strong for Alternatives 7H and 7I/7J. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-107. KOP C70. View from Hudspeth Cutoff facing northwest toward Alternatives 7H and 7I/7J. Photo taken 11/16/09 at 11:22 a.m.

Oregon/California NHT

KOP C63 (Figures 3.3-108, 3.3-109, and 3.3-110) is located at the point of separation of the Oregon NHT and the California NHT known as the Parting of the Ways, just west of the Raft River. The KOP is located on the upper terrace of the Raft River's floodplain, approximately 0.5 mile south of the Proposed Route in Segment 7 and 3.4 miles north of Alternative 7C. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-35 and E.3-36).

The Oregon NHT at this location consists of a shallow, two-track road that transition into a swale within 100 feet of the junction on both sides of the California NHT. The California NHT consists of a two-track road that is used to access the junction. Modern use has widened and deepened the ruts and added ruts from winter and spring travel. The setting contains a wooden, H-frame transmission line and ranch structures approximately 2.5 miles to the southeast.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to this factor and the KOP's distance or proximity from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as moderate to strong for the Proposed Route in Segment 7 and weak for Alternative 7C. The Project's elements would not dominate the setting for Alternative 7C. There would not be an adverse impact to the resource from Alternative 7C. The Project's elements would dominate the setting for the Proposed Route in Segment 7; therefore, there would be an adverse impact to the resource from Segment 7 at this location.

Figure 3.3-108. KOP C63. View of the Oregon NHT at Parting of the Ways facing east. Trail is visible in middle of photo, extending into the agricultural field. Photo taken 11/15/09 at 9:07 a.m.

Figure 3.3-109. KOP C63. View of the California NHT at Parting of the Ways, facing northeast toward the Proposed Route in Segment 7. Photo taken 11/15/09 at 9:07 a.m.

Figure 3.3-110. KOP C63. View of California NHT, visible at left side of photograph, from Parting of the Ways sign, facing south toward the proposed Alternative 7C. Photo taken 11/15/09 at 9:07 a.m.

Oregon NHT

KOP C64 (Figures 3.3-111, 3.3-112, and 3.3-113) is located on a segment of the Oregon NHT, 4 miles west of the Raft River. KOP C64 is located approximately 1 mile south of the Proposed Route in Segment 7 and 1.8 miles north of Alternative 7C. Photographic simulations depicting potential indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-37 and E.3-38).

The resource at this location is distinguished by a swale with shallow ruts. There are no modern intrusions to the setting at this location.

Due to the Project's proximity to this KOP and the introduction of new elements to the resource's viewshed, the VCR for this KOP is assessed as strong for both routes. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-111. KOP C64. View of the Oregon NHT looking west. Trail is visible in middle of photo and extending onto the rolling plains. Photo taken 11/15/09 at 10:37 a.m.

Figure 3.3-112. KOP C64. View from the Oregon NHT looking southwest toward Alternative 7C. Photo taken 11/15/09 at 10:37 a.m.

Figure 3.3-113. KOP C64. View from the Oregon NHT looking north toward Proposed Route in Segment 7. Photo taken 11/15/09 at 10:37 a.m.

California NHT

KOP C67 (Figure 3.3-114) is located on a segment of the California NHT along the base of a shallow mountain range, just north of Cassia Creek. KOP C67 is located less than 0.25 mile north of State Highway 77 and approximately 1.2 miles north of Alternative 7H.

The resource at this location consists of an upgraded two-track road with added gravels that is used heavily for recreation. The setting contains a wooden, single-pole transmission line that parallels the highway. Ranching facilities are visible on the landscape in all directions.

Alternative 7H would be located south of the existing transmission line. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of a different form, material, and texture. Due to the similarity of the Project's design with existing structures in the north, potential blending of elements into the backdrop in some areas, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-114. KOP C67. View of California NHT facing south toward Alternative 7H. Photo taken 11/15/09 at 4:14 p.m.

KOP C78 (Figure 3.3-115) is located on a segment of the California NHT along the eastern edge of Junction Valley and the westernmost edge of Emigrant Canyon. KOP C78 is located approximately 1.6 miles north of Alternative 7I/7J.

The resource at this location consists of a swale with visible ruts. The setting contains a wooden, single-pole transmission line located approximately 0.5 mile to the south and the Moulton Quarry site approximately 0.5 mile to the southwest.

Alternative 7I/7J would be located to the southwest crossing the open landscape of Junction Valley. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different material, form, and texture. The VCR for this KOP is assessed as moderate. The proposed Project elements would draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-115. KOP C78. View from the California NHT facing west toward Alternative 7I/7J. Photo taken 11/17/09 at 11:30 a.m.

KOP C79 (Figure 3.3-116) is located on a segment of the California NHT near Birch Creek, approximately 1 mile north of the Utah border. KOP C79 is located approximately 0.4 mile southeast of Alternative 7I/7J. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-39 and E.3-40).

The resource at this location is distinguished by a deep swale/erosion feature with no visible wheel ruts. There are no modern intrusions to the setting at this location.

The proposed Project would introduce new elements in the resource's setting. Due to this factor and the proximity of the route to the KOP, the VCR is assessed as strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-116. KOP C79. View of California NHT from KOP C79 looking down slope at the swale and facing west toward Alternative 7I/7J. Note trail marker on the left. Photo taken 11/17/09 at 3:30 p.m.

KOP C80 (Figures 3.3-117 and 3.3-118) is located on a segment of the California NHT 0.75 mile west-southwest of Birch Creek and approximately 0.5 mile north of Alternative 7I/7J.

The resource at this location consists of a shallow, unused, two-track road. There are no modern intrusions to the setting at this location.

The proposed Project would introduce new elements in the resource's setting. Some views of Alternative 7I/7J would be screened by topography, particularly to the southwest. Due to this factor and the proximity of the route to the KOP, the VCR is assessed as moderate to strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-117. KOP C80. View from California NHT facing south toward Alternative 7I/7J. Photo taken 12/3/09 at 11:35 a.m.

Figure 3.3-118. KOP C80. View from California NHT facing east toward Alternative 7I/7J. Photo taken 12/3/09 at 11:35 a.m.

California NHT – Salt Lake Alternate

KOP C72 (Figure 3.3-119) is located on a segment of the California NHT – Salt Lake Alternate, east of Onemile Creek. The KOP is 0.8 mile east southeast of Alternative 7I/7J.

The resource at this location consists of a moderately deep swale that parallels a jeep trail. The setting contains ranching structures approximately 2 miles north of this location.

The proposed Project would introduce new elements in the resource's viewshed. Due to the KOP's proximity to the alternative, the VCR for this KOP is assessed as strong for Alternative 7I/7J. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-119. KOP C72. View from Salt Lake Alternate Trail, looking west-northwest, toward Alternative 7I/7J. Trail swale is visible on the left, paralleling the jeep trail. Photo taken 11/16/09 at 3:15 p.m.

KOP C73 (Figure 3.3-120) is located on a segment of the California NHT – Salt Lake Alternative, 0.8 mile west of Alternative 7I/7J.

The resource at this location is a two-track jeep road. The setting contains a wooden, H-frame transmission line less than 0.25 mile to the north. Ranching structures are visible approximately 2 miles north of this location.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors and the KOP's proximity to the route, the VCR for this KOP is assessed as moderate. The Proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-120. KOP C73. View from Salt Lake Alternate Trail, looking south toward Alternative 7I/7J. Photo taken 11/16/09 at 3:50 p.m.

KOP C74 (Figure 3.3-121) is located on a segment of the California NHT – Salt Lake Alternative near Johnson and George Creek, 1.3 miles north of Alternative 7I/7J.

The resource at this location consists of a very shallow swale, with no visible ruts. The setting contains wooden, single-pole transmission lines less than 0.25 mile to the north and southeast.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors and the KOP's proximity to the route and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-121. KOP C74. View from Salt Lake Alternate Trail facing southeast toward Alternative 7I/7J. Photo taken 11/16/09 at 4:15 p.m.

KOP C75 (Figures 3.3-122 and 3.3-123) is located on a segment of the California NHT – Salt Lake Alternative, west of Raft River and east of City of Rocks, 1.4 miles north of Alternative 7I/7J. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-41 and E.3-42).

The resource at this location is a shallow swale with no visible ruts. To the east, approximately 3 miles, along the valley's edge, the setting contains section line fencing, farmsteads, farm facilities, buildings, and warehouses.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors and the KOP's proximity to the route and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-122. KOP C75. View of Salt Lake Alternate Trail facing west. Trail visible as swale to left of utility meter. Photo taken 11/17/09 at 9:57 a.m.

Figure 3.3-123. KOP C75. View from Salt Lake Alternate Trail facing southeast toward Alternative 7I/7J. Photo taken 11/17/09 at 9:57 a.m.

KOP C76 (Figure 3.3-124) is located on a segment of the California NHT – Salt Lake Alternate, west of the Raft River, following the creek south of Smoky Mountain, 2.6 miles north of Alternative 7I/7J.

The resource in this location is a moderately deep swale with no visible ruts. The setting contains farm facilities and section fences approximately 1 mile to the east.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors and the KOP's distance from the route and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-124. KOP C76. View from Salt Lake Alternate Trail facing south toward Alternative 7I/7J. Photo taken 11/17/09 at 10:16 a.m.

KOP C77 (Figure 3.3-125) is located on a segment of the California NHT – Salt Lake Alternate in Emigrant Canyon, City of Rocks. The KOP is located 2.1 miles north of Alternative 7I/7J.

The resource at this location consists of a two-track road and a swale with shallow ruts adjacent to the two-track road. The two-track shows signs of heavy use from visitors to the City of Rocks. During the wet seasons, additional ruts have been made by vehicle traffic. The swale is in good condition with some evidence of water and wind erosion. There are no modern intrusions to the setting at this location.

Figure 3.3-125. KOP C77. View from Salt Lake Alternate trail in Emigrant Canyon, City of Rocks facing east toward Alternative 7I/7J. Photo taken 11/17/09 at 10:50 a.m.

Views of the Project route near this KOP are intermittent and screened in most areas by topography. The visible portion of the Project is 4.3 miles to the southeast of this location. Due to the KOP's distance to the Route Alternative and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as moderate for Alternative 7I/7J. The Proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Segment 8

Segment 8, as proposed, would link the Midpoint and Hemingway Substations. This 131-mile single-circuit 500-kV transmission line would stay north of the Snake River until crossing through the SRBOP parallel to an existing 500-kV transmission line before ending at the Hemingway Substation. Thirteen acres of the expansion of the Midpoint Substation and 0.5 acre for a regeneration site are attributed to Segment 8. There are five Route Alternatives: 8A, which follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area); 8B and 8C, which represent the old routes originally proposed by the Proponents but that have now been changed to avoid the cities of Kuna and Mayfield, respectively; 8D, which represents a small revision involving a rebuild of the existing transmission line to move both away from the National Guard Maneuver Area; and 8E, which was proposed by the BLM in order to avoid crossing the Halverson Bar Nonmotorized portion of the Guffey Butte-Black Butte Archaeological District (see Appendix A, Figure A-10).

North Alternate Oregon Trail

KOP C83 (Figures 3.3-126 and 3.3-127) is located on a segment of the North Alternate Oregon Trail near the site of the Canyon Creek Stage Station where the trail intersects King Hill Road. The KOP is approximately 1.1 miles west of King Hill Creek and 2.7 miles northwest of the Snake River. The KOP is 0.5 mile south of the Proposed Route in Segment 8. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-43 and E.3-44).

The resource at this location consists of a moderately deep swale. The setting contains a wooden, H-frame transmission line less than 0.25 mile to the north and modern ranching properties are visible approximately 2 miles to the east.

Topography in the area screens the view of Alternative 8A. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors, the KOP's proximity to the route, and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as weak to moderate. The Proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-126. KOP C83. View of North Alternate Oregon NHT looking east. Photo taken 12/08/09 at 9:10 a.m.

Figure 3.3-127. KOP C83. Looking north toward the Proposed Route in Segment 8. Photo taken 12/08/09 at 9:10 a.m.

KOP C84 (Figures 3.3-128 and 3.3-129) is located on a segment of the North Alternate Oregon Trail approximately 0.8 mile east-northeast of the town of King Hill and 0.8 mile north of the Snake River. The KOP is 0.8 mile southwest of the Proposed Route in Segment 8.

The resource at this location consists of a two-track road that is used by ranchers. The trail has been widened and the ruts have been deepened by modern use. The setting contains a wooden, H-frame transmission line approximately 0.5 mile to the north and east and ranching structures that are visible less than 0.25 mile to the west.

Topography in the area screens the view of Alternative 8A. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. Due to these factors, the KOP's proximity to the route, and the potential for the elements to blend into the backdrop, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-128. KOP C84. View from North Alternate Trail facing north toward the Proposed Route in Segment 8. Photo taken 11/17/09 at 10:50 a.m.

Figure 3.3-129. KOP C84. View from North Alternate Trail facing east toward the Proposed Route in Segment 8. Wooden, H-frame transmission line in view. Photo taken 11/17/09 at 10:50 a.m.

KOP C85 (Figure 3.3-130) is located on a segment of the North Alternate Oregon Trail approximately 600 feet west of Pioneer Reservoir where the trail intersects with 100 East Road. This KOP is located 870 feet northeast of the Proposed Route in Segment 8.

The resource at this location consists of a swale with shallow ruts visible. The setting contains a wooden, H-frame transmission line less than 0.25 mile to the south; a wooden, single-pole transmission line approximately 2.5 to 3.0 miles to the northeast; and agricultural structures that are visible within 1.0 mile to the northeast.

The Proposed Route in Segment 8 would be located just to the north and parallel to the existing wooden, H-frame transmission line. The Project's design shares some similarities with existing structures in the area, but would introduce new elements that are of different form, material, and texture. Due to these factors and the KOP's proximity to the route, the VCR for this KOP is assessed as weak to moderate. The proposed Project elements would draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-130. KOP C85. View of North Alternate Trail facing south toward the Proposed Route in Segment 8. Photo taken 12/8/09 at 12:35 p.m.

KOP C87 (Figures 3.3-131, 3.3-132, and 3.3-133) is located on a segment of the North Alternate Oregon Trail within the Malad Gorge State Park near the reported location of the Malad Stage Station. The KOP is approximately 0.4 mile west of the park's eastern boundary and 800 feet north of the Malad River. The KOP is 2.2 miles south of the Proposed Route in Segment 8 and 2.5 miles north of Alternative 8A.

Figure 3.3-131. KOP C87. View of North Alternate Oregon NHT looking east. Photo taken 12/08/09 at 4:10 p.m.

Figure 3.3-132. KOP C87. View from the North Alternate Oregon NHT looking north towards the Proposed Route in Segment 8. Photo taken 12/08/09 at 4:10 p.m.

Figure 3.3-133. KOP C87. View from the North Alternate Oregon looking south towards Alternative 8A. Photo taken 12/08/09 at 4:10 p.m.

The trail segment in this area, recently identified by an OCTA volunteer, is located approximately 525 feet south of where existing SHPO and NPS spatial data depict the trail (Eichhorst 2010a). The trail segment at this location consists of a two-track road. The presence of vegetation in the ruts here suggests that the road has not been recently used. The setting contains views of traffic on I-84 approximately 0.25 mile to the southwest, which includes several related structures, signs, and billboards that are visible from this location. A ranch house with associated agricultural equipment is visible approximately 0.25 mile to the north, and additional houses are visible approximately 1.5 to 2 miles to the southeast. Wind turbines can be seen 2 to 3 miles to the west, and a lattice transmission line is visible on the southwestern skyline.

Views of the Proposed Route in Segment 8 are intermittent and screened in some areas by topography. The Project's design shares some similarities with existing structures in the area. Due to these factors and the KOP's distance from the route and alternative, the VCR for this KOP is assessed as weak. The Proposed Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C112 (Figures 3.3-134 and 3.3-135) is located on a segment of the North Alternate Oregon Trail, 9.25 miles east of the town of Mountain Home, approximately 0.6 mile north of Hot Springs Creek Reservoir. The KOP is located at a point on the North Alternate Oregon Trail approximately 0.2 mile east of where it diverges from the Oregon NHT. It is 1.9 miles north of the Proposed Route in Segment 8.

Figure 3.3-134. KOP C112. View of the North Alternate Oregon Trail, facing west, visible as a shallow depression in center of photo. Photo taken 7/27/10 at 1:23 p.m.

Figure 3.3-135. KOP C112. View from the North Alternate Oregon Trail, facing south/southeast toward the Proposed Route in Segment 8. Photo taken 7/27/10 at 1:23 p.m.

The resource at this point consists of a well-preserved swale with discernable ruts that are approximately 1 feet deep. The trail is marked, heavily overgrown with vegetation at this location, and bisected by a southeast-to-northwest-trending improved gravel road. Multiple transmission lines with wooden H-frame and metal lattice work support structures are visible to the south. A small wind farm with approximately 17 turbines can be seen approximately 0.5 mile to the southeast. A small agricultural complex containing two structures is visible approximately 0.75 mile to the southeast.

Due to the similarity of the Project's design with existing structures visible to the south, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C118 (Figures 3.3-136 and 3.3-137) is located on a segment of the North Alternate Oregon Trail, on the south side of the Blair Trail Reservoir, 1.4 miles northwest of Little Canyon Creek. It is 1.5 miles north of the Proposed Route in Segment 8 and 3.1 miles north of Alternative 8A.

The resource at this location consists of a wide, shallow swale with faintly visible ruts. The trail here is largely undisturbed, but is bisected by a two-track road at the KOP. The Blair Trail Reservoir is located immediately to the north, and the earthen berm supporting the southern side of the reservoir is visible from the KOP. Three transmission lines—two with wooden, H-frame support structures and one with metal lattice support structures—are visible approximately 0.5 to 1.5 miles southwest.

Figure 3.3-136. KOP C118. View of the North Alternate Oregon Trail, facing west/southwest. Photo taken 7/30/10 at 9:25 a.m.

Figure 3.3-137. KOP C118. View from the North Alternate Oregon Trail, facing south/southwest with transmission line structures in view. Photo taken 7/30/10 at 9:25 a.m.

The proposed Project parallels and bisects the existing transmission lines to the south. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the alternative, and the cumulative effect of adding additional structures, the VCR for this KOP is assessed as weak. The Proposed Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C119 (Figure 3.3-138) is located on a segment of the North Alternate Oregon Trail, 3 miles northwest of the Blair Trail Reservoir and 0.5 mile northwest of Cold Springs Creek, at the intersection of Walker Road and Alkali Road. The KOP is approximately 0.5 mile south-southeast of the reported location of the Cold Springs Stage Station, which has reputedly been destroyed (Eichhorst 2010b). The KOP is 2.6 miles northeast of the Proposed Route in Segment 8 and 3.2 miles north of Alternative 8A.

The resource at this location consists of a wide, undisturbed swale that possibly represents two parallel traces of the trail. The trail is bisected by Walker Road at this point and is obliterated by a cultivated agricultural field approximately 200 feet north of the KOP. Two transmission lines with wooden, H-frame support structures are visible 0.75 mile and 1.5 miles to the southwest of this location. Additional transmission lines are visible approximately 2.3 miles southwest of this location.

Figure 3.3-138. KOP C119. View of the North Alternate Oregon Trail, facing south toward the Proposed Route in Segment 8 and Alternative 8A. Trail is visible as swale that descends down the valley in the center of the photo. Photo taken 7/30/10 at 10:32 a.m.

The Proposed Project is located south of the existing transmission lines. Due to the similarity of the Project's design with the existing structures in the area, the proximity of the KOP to the alternative, and the cumulative effect of adding additional structures, the VCR for this KOP is assessed as weak. The Proposed Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Oregon NHT

KOP C61 (Figures 3.3-139, 3.3-140, and 3.3-141) is located on a segment of the Oregon NHT along the edge of an upper terrace of the Snake River, approximately 0.25 mile east of Rosevear Gulch Road and 0.75 mile east of Rosevear Gulch. KOP C61 is located approximately 2.8 miles southwest of Alternative 8A and 3.0 miles northeast of the Proposed Route in Segment 9.

The resource at this location consists of a swale with no visible ruts. The setting contains agricultural buildings and a holding tank approximately 4 miles to the west, a gravel pit that is prominent in the view approximately 0.5 mile to the west, and a blue water tank that is approximately 2 miles to the south.

Figure 3.3-139. KOP C61. View of Oregon NHT, facing west. Trail swale located to the right of the trail marker. Gravel pit is visible on left side of photo in middle ground. Photo taken 11/18/09 at 2:18 p.m.

Figure 3.3-140. KOP C61. View from Oregon NHT, facing northeast toward Alternative 8A. Photo taken 11/18/09 at 2:18 p.m.

Figure 3.3-141. KOP C61. View from Oregon NHT, facing southwest toward the Proposed Route in Segment 9. Photo taken 11/18/09 at 2:18 p.m.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form, material, and texture. The view of the Proposed Route in Segment 9 is screened by topography with the exception of a very small area to the southwest. Due to this factor and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as moderate. The Project's elements may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C95 (Figure 3.3-142) is located on a segment of the Oregon NHT approximately 1.0 mile west of Deer Gulch and 1.25 miles east of Black Mesa Road. The KOP is 0.7 mile southwest of Alternative 8A and 1.4 miles north of Alternative 9B where views of these routes are screened by topography.

The resource at this location consists of a well-used two-track road to the east of the KOP that transitions to a shallow swale with no visible ruts on the west side of the KOP. The setting contains a wooden, H-frame and lattice transmission line approximately 600 feet to the north. A fence bisects the trail approximately 100 feet to the north.

Figure 3.3-142. KOP C95. View of Oregon NHT facing northeast toward Alternative 8A. Note wooden, H-frame and lattice transmission lines in background. Photo taken 12/11/09 at 9:30 a.m.

Alternative 8A would be located north of and parallel to the existing transmission lines. Due to the similarity of the Project's design with existing structures, the KOP's distance from the alternative, and the cumulative impact of adding additional structures, the VCR

for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C96 (Figures 3.3-143 and 3.3-144) is located on a segment of the Oregon NHT, a portion of which coincides with the Kelton Road, adjacent to the Pilgrim Stage Station, 1.25 miles south-southeast of the Snake River and approximately 650 feet west of the southern end of Big Pilgrim Gulch. Alternative 8A would be located 0.7 mile southwest and Alternative 9B would be located 1.4 mile south. The Oregon NHT and Kelton Road would be crossed by Alternative 8A, approximately 0.9 mile west. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-45 and E.3-46).

Four variants of the Oregon NHT are visible at this location, which served as the ascent from Big Pilgrim Gulch for westward-bound emigrants. The first trail variant consists of a well-used two-track road. The second and third trail variants are both shallow swales with faintly visible ruts. The fourth variant is a very deep swale that has been impacted by alluvial erosion. Trail condition is assessed as good for the first and fourth variants and excellent for the second and third variants. The setting contains a wooden, H-frame transmission line approximately 1 mile to the south-southeast and a lattice transmission line is 0.5 mile to the north.

Figure 3.3-143. KOP C96. View of Oregon NHT variants looking east toward Big Pilgrim Gulch. Photo taken 12/11/09 at 11:05 a.m.

Figure 3.3-144. KOP C96. View southward toward Alternative 8A and Alternative 9B. Photo taken 12/11/09 at 11:05 a.m.

Topography in the area screens the views of Alternatives 8A and 9B to the west. Alternative 8A would be located to the north of and parallel to the existing wooden, H-frame transmission line increasing its prominence in the view. The Project's design shares some similarities with existing structures in the area but would introduce new elements to the southeast. Due to these factors, the KOP's proximity to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

KOP C97 (Figures 3.3-145 and 3.3-146) is located on a segment of the Oregon NHT approximately 6.2 miles northwest of KOP C96, approximately 1.25 miles east of Rosevear Gulch. KOP C97 is located approximately 4.2 miles northeast of the Proposed Route in Segment 9, 3.7 miles north of Alternative 9B, and 1.6 miles southwest of Alternative 8A.

The resource at this location consists of a shallow swale. The setting contains wooden, H-frame and lattice transmission lines approximately 0.5 to 1.0 mile to the north. Ranch structures are visible 1 mile to the east and a wind farm is visible on the horizon to the southeast.

Alternative 8A would be located north of and parallel to the existing transmission lines. Due to the similarity of the Project's design with existing structures, the KOP's distance from the Proposed Route in Segment 9 and Alternative 9B, and the cumulative impact

Figure 3.3-145. KOP C97. View from trail facing northeast toward Alternative 8A. Photo taken 12/11/09 at 3:15 p.m.

Figure 3.3-146. KOP C97. View from trail facing southwest toward the Proposed Route in Segment 9 and Alternative 9B. Photo taken 12/11/09 at 3:15 p.m.

of adding additional structures, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C100 (Figures 3.3-147 and 3.3-148) is located at the Canyon Creek Stage Station along a segment of the Oregon NHT that crosses Canyon Creek approximately 3.0 miles north of Lockman Butte. The KOP is 2.1 miles northeast of the Proposed Route in Segment 8. In 1970, a fire destroyed part of the roof and wooden addition; however, much of the brick foundation still remains today (Mauser 2005). The setting contains a wooden, H-frame transmission line approximately 0.25 mile to the southwest.

Views toward the Proposed Route in Segment 8 are screened in all areas with the exception of a small area to the southwest. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of a different form, material, and texture. Due to these factors, the similarity of the Project's design with existing structures, and the KOP's distance from the route, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-147. KOP C100. View of Canyon Creek Station Marker. Foundation walls of the station are visible in background of photo. Photo taken 8/5/08 at 1:51 p.m.

Figure 3.3-148. KOP C100. View from Canyon Creek Station facing southwest toward the Proposed Route in Segment 8. Photo taken 08/21/08 at 11:40 a.m.

KOP C102 (Figures 3.3-149 and 3.3-150) is located near the Oregon NHT along U.S. Highway 20, 3.8 miles north of the Proposed Route in Segment 8 at the historic Rattlesnake Station marker. Rattlesnake Station has been designated as a high-potential site by the NPS.

The resource is located on private property and a direct assessment of the resource's condition could not be obtained due to landowner restrictions. The setting near the marker contains wooden, single-pole and H-frame transmission lines less than 0.25 mile south of this location.

The Proposed Route in Segment 8 would be located south of and parallel to several existing transmission lines in the view from this location. Due to the similarity of the Project's design with existing structures, the KOP's distance from the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-149. KOP C102. View of Rattlesnake Station Marker facing southeast. Photo taken 08/21/08 at 11:40 a.m.

Figure 3.3-150. KOP C102. View toward the Proposed Route in Segment 8 from Rattlesnake Station Marker. Photo taken 08/21082008 at 11:40 a.m., looking southeast, from the historic marker.

KOP C106 (Figures 3.3-151 and 3.3-152) is located adjacent to a trail marker for the Oregon NHT near Bell Rapids Road, 4.4 miles northeast of the Proposed Route in Segment 9, approximately 1.3 miles southwest of Alternative 8A, and 0.8 mile north of Alternative 9B.

The resource at this location consists of a swale with visible ruts. The setting contains wooden, H-frame and lattice transmission lines approximately 0.25 to 0.5 mile to the north.

Alternative 8A would be located north of and parallel to several existing transmission lines in the view from this location. Due to the similarity of the Project's design with existing structures in the north, the KOP's proximity to the route, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as weak to moderate for Alternative 8A. Alternative 9B would be located to the south, away from existing impacts to the historic landscape. Due to this factor and the proximity of the KOP to the alternative, the VCR is moderate to strong for Alternative 9B. Due to the distance of the KOP from the Proposed Route in Segment 9 and the fact that most of the route is screened by topography, the VCR is assessed as weak to moderate. The Project's elements would dominate the setting for Alternative 9B and may draw the attention of the casual observer for the Proposed Route and Alternative 8B; therefore, an adverse impact to the resource is possible at this location.

Figure 3.3-151. KOP C106. View of Oregon NHT/Kelton Road facing south toward Alternative 9B and the Proposed Route in Segment 9. Photo taken 12/11/08 at 2:14 p.m.

Figure 3.3-152. KOP C106. View from Oregon NHT/Kelton Road facing northeast toward Alternative 8A. Wooden, H-frame and lattice transmission lines visible in background. Photo taken 12/11/08 at 2:14 p.m.

KOP C107 (Figure 3.3-153) is located on a segment of the trail adjacent to an Oregon NHT marker on Kelton Road. Alternative 8A would be located approximately 0.6 mile southwest of this KOP.

The resource at this location consists of a deep swale. The setting contains wooden, H-frame and lattice transmission lines less than 0.25 mile to the east.

The Project's design shares some similarities with existing structures in the area but would introduce new elements to the west away from existing impacts. Due to these factors and the KOP's proximity to the route, the potential for the elements to blend into the backdrop in some areas, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-153. KOP C107. View from trail facing west toward Alternative 8A from Kelton Road. Photo taken 12/11/08 at 3:12 p.m.

KOP C108 (Figure 3.3-154) is located on a segment of the Oregon NHT located approximately 5 miles northwest of the town of Glenns Ferry. Alternative 8A would be located 1.5 miles northeast of this point, and the Proposed Route in Segment 8 would be located approximately 2.9 miles to the north.

The resource at this location consists of a two-track road. The setting contains a wooden, H-frame transmission line less than 0.25 mile to the north.

Alternative 8A would be located north of and parallel to the existing transmission line in the view from this location. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of a different form, material, and texture. Due to the similarity of the Project's design with existing structures in the north, the KOP's distance from the Proposed Route and Route Alternatives, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed weak to moderate. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-154. KOP C108. View from Oregon NHT facing northeast toward Alternative 8A and the Proposed Route in Segment 8. Photo taken 12/12/08 at 3:50 p.m.

KOP C111 (Figures 3.3-155, 3.3-156, and 3.3-157) is near a segment of the Oregon NHT adjacent to the Bonneville Point interpretive kiosk, approximately 3.2 miles northeast of I-84, off of Blacks Creek Road. The KOP was established in the interpretive center parking area, approximately 50 feet west of the kiosk and 285 feet south of the Oregon NHT. The KOP is 7.7 miles north of Alternative 8B.

The resource at this location consists of a marked trail segment located east of the BLM kiosk. Portions of the trail have been used as a two-track road in this area, whereas others have only been subjected to foot traffic, evinced by a well-worn path between the existing, shallow ruts. A radio tower complex is visible 0.25 mile to the east and transmission lines are visible within approximately 1 mile in all directions. This includes lattice transmission line structures to the northwest and four transmission lines (including wooden single-post and H-frame structures) that are visible at a distance of 1 to 3 miles to the south and southwest. Beyond these existing transmission lines, I-84 and the UPRR are visible at distances of 1 and 1.5 miles respectively. Multiple structures are visible to the south, and the city of Boise is visible on the horizon to the west.

Due to the KOP's distance from the Proposed Route and Route Alternatives and the presence of multiple, existing modern intrusions to the setting, the VCR for this KOP is assessed as weak for Alternative 8B. The Project's elements would not draw the attention of the casual observer; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-155. KOP C111. View of Bonneville Point interpretive kiosk. Photo taken 7/27/10 at 9:25 a.m.

Figure 3.3-156. KOP C111. View of Oregon NHT looking west toward interpretive kiosk. Photo taken 7/27/10 at 9:25 a.m.

Figure 3.3-157. KOP C111. View from Bonneville Point interpretive kiosk parking area looking south toward the Proposed Route in Segment 8 and Alternatives 8B and 8C. Photo taken 7/27/10 at 9:25 a.m.

Boise City to Silver City Road

KOP C88 (Figures 3.3-158 and 3.3-159) is located on a segment near Boise City to Silver City Road, immediately south of State Highway 45 at Walter's Ferry Historic Site recreation area on the west bank of the Snake River. The KOP is approximately 3.2 miles southwest of the Proposed Route in Segment 9, 1.9 miles northeast of the Proposed Route in Segment 8, and 1.0 mile south of Alternative 8B.

The resource is located on private property and a direct assessment of the resource's condition could not be obtained due to landowner restrictions. Modern developments currently affect the setting of the resource, including a parking lot for a recreation area and a modern bridge. The Oregon NHT crossed the Snake River just south of the ferry's previous location. No trace of the trail is currently visible from this KOP.

The Project's design shares similarities with existing structures in the area and, in general, is screened by natural vegetation. Due to these factors and the KOP's distance from the route, the VCR for this KOP is assessed as weak. The Proposed Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-158. KOP C88. View from parking lot at Walter's Ferry Recreational Area looking northwest toward the Snake River and Alternative 8B. Photo taken 8/18/08 at 10:08 a.m.

Figure 3.3-159. KOP C88. View from parking lot at Walter's Ferry Recreational Area looking southwest toward the Proposed Route in Segments 8 and 9. Photo taken 8/18/08 at 10:08 a.m.

KOP C89 (Figures 3.3-160 and 3.3-161) is located on a segment of the Boise City to Silver City Road on the northern slope of Kuna Butte, approximately 3 miles from the town of Kuna. The Mora Canal is less than 0.25 mile to the north. Alternative 8B is 1 mile to the south.

The resource at this location consists of a swale. The southwest portion of the swale has been destroyed and is intersected by a modern two-track road. Although it is a short segment, the remaining swale is in good condition. Due to snow, no artifacts or wheel ruts were observed. Several residences are located within 60 meters of the KOP. More residential properties are visible less than 1 mile to the west-northwest.

Views of Alternative 8B are limited by topography in most areas but would be visible directly south of the KOP. The Project's design would introduce new structural elements to this area. Due to these factors, the KOP's proximity to the route, and the potential for the elements to be skylined along Kuna Butte, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-160. KOP C89. Boise to Silver City Road. Standing on the road looking toward the northeast. Swale is visible in the left foreground. Photo taken 12/09/2009 at 11:35 a.m.

Figure 3.3-161. KOP C89. Standing on Boise City to Silver City Road facing south toward Alternative 8B. Photo taken 12/09/2009 at 11:40 a.m.

Prehistoric/Historic Resource

KOP C103 (Figure 3.3-162) is located at Celebration Archaeological Park. The Proposed Route in Segment 8 is 2.5 miles to the south, 2 miles to the southeast, and 3.2 miles to the west. The Proposed Route in Segment 9 would be located 4.9 miles to the southwest. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-47 and E.3-48).

The setting contains a lattice transmission line 1 mile southeast of this KOP. A ranch house is visible 0.25 mile to the southwest.

Due to the similarity of the Project's design with existing structures in the area and KOP's distance from the Proposed Route and Alternatives, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-162. KOP C103. View facing southeast toward the Project from north of Guffey Bridge at Celebration Archaeological Park. Photo taken 08/18/08 at 8:40 a.m.

Segment 9

Segment 9, as proposed, would link the Cedar Hill and Hemingway Substations with a 161.7 mile single-circuit 500-kV transmission line which skirts the Jarbidge and Owyhee Military Operating Areas to the north, then follows the WWE corridor just north of the Saylor Creek Air Force Range, passing through Owyhee County before entering into the Hemingway Substation. Fifteen acres of the construction of the Cedar Hill Substation and 1 acre for two regeneration sites are attributed to Segment 9. There are eight Route Alternatives proposed, including 9A, which was the Proponents' Proposed Route until moving to avoid the Hollister area; 9B, which is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors; 9C, which was the Proponents' Proposed Route until moving to avoid the Castleford area; and 9D and 9E, proposed by the Owyhee County Task Force, that cross more public lands north and south of the Proposed Route, respectively, than the Proposed Route. Most of Alternative 9D would be within the SRBOP. Alternatives 9F and 9H were proposed to avoid crossing the nonmotorized area south of C.J. Strike Reservoir. Alternatives 9G and 9H provide an alternate route location south of Alternative 8E (see Appendix A, Figure A-11).

Toana Freight Wagon Road

KOP C92 (Figure 3.3-163) is located on a segment of the Toana Freight Wagon Road 1 mile east of the Proposed Route in Segment 9. This KOP is 1.2 miles south and 1.3 miles west of Alternative 9C and 1.3 miles west of the southern end of Alternative 9B.

Figure 3.3-163. KOP C92. View from Toana Freight Road facing east toward Alternative 9C. Photo taken 12/10/09 at 10:14 a.m.

The resource at this location consists of a well-used two-track road. The setting contains a wooden, H-frame transmission line approximately 2.5 miles to the southeast. Ranch and housing structures are visible to the southeast 1 to 3 miles to the south and southeast.

Views of the Proposed Route in Segment 9 are screened by topography. The Project's design shares some similarities with existing structures in the east and southeast, but would introduce new elements of different form, material, and texture. Due to these factors, the KOP's proximity to the route, and the potential for the elements to blend into the backdrop in some areas, the VCR for this KOP is assessed as weak. The Proposed Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

KOP C93 (Figure 3.3-164 and 3.3-165) is located on a segment of the Toana Freight Wagon Road just south of where the wagon road is intersected by a modern two-track road from the east and just north of Coyote Spring and the site of the historical Coyote Spring Stage Station. This KOP is located 1.1 miles west-northwest and 1.4 miles south-southwest of Alternative 9B (a right angle in the Route Alternative would be located approximately 1.7 miles northeast of this KOP). Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-49 and E.3-50).

Figure 3.3-164. KOP C93. View looking north toward Alternative 9B with the Toana Freight and Wagon Road in foreground. Photo taken 12/10/09 at 1:45 p.m.

Figure 3.3-165. KOP C93. View from Toana Freight Road facing east toward Alternative 9B. Existing transmission line is visible on skyline. Photo taken 12/10/09 at 1:45 p.m.

The resource at this location consists of a well-used two-track road. Ruts are visible here, but have been deepened by modern use. The setting contains a wooden, single-pole transmission line approximately 1 mile to the east.

The Project's design shares some similarities with existing structures in the east, but would introduce new elements of different form, material, and texture. Due to these factors and the KOP's proximity to the route, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Oregon NHT

KOP C60 (Figures 3.3-166 and 3.3-167) is located on a segment of the Oregon NHT at the Three Island Crossing overlook on the south side of the Snake River, east of Deadman Canyon. KOP C60 is located approximately 2.7 miles northeast of the Proposed Route in Segment 9, 4.7 miles northeast of Alternative 9B, and 3.8 miles southwest of Alternative 8A.

The overlook is surrounded by several variants of the trail that descend into the canyon. The town of Glenn's Ferry is visible approximately 2 miles to the northeast. A wooden, H-frame transmission line is located approximately 3 miles to the west. Agricultural storage tanks and warehouses are visible on the next ridge approximately 2 miles to the southwest.

Figure 3.3-166. KOP C60. View of Three Island Crossing overlook, facing northwest with interpretive signs in foreground and three islands in the background. Photo taken 11/13/09 at 12:30 p.m.

Figure 3.3-167. KOP C60. View from Three Island Crossing overlook looking southwest toward the Proposed Route in Segment 9. Photo taken 11/13/09 at 12:52 p.m.

The Project's design shares some similarities with existing structures in the area, but would introduce new elements that are of different form, material, and texture to the south. View of the Proposed Route in Segment 9 is screened by topography with the exception of a small area to the southwest. Due to this factor and the KOP's distance from the Proposed Route and Alternatives, the VCR for this KOP is assessed as moderate for the Proposed Route in Segment 9 and weak to moderate for Alternative 8A and weak for Alternative 9B. The Project's elements from the Proposed Route in Segment 9 and Alternative 8A may draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location. The Project's elements from Alternative 9B would not dominate the setting; therefore, there would not be an adverse impact at this location.

KOP C62 (Figures 3.3-168 and 3.3-169) is located on a segment of the Oregon NHT along the edge of an upper terrace west of the Snake River, overlooking the Hagerman Fossil Beds National Monument to the east. KOP C62 is located approximately 1.4 miles northeast of Alternative 9B and 4.9 miles south of Alternative 8A. The resource at this location consists of a deep swale with no visible ruts.

Alternative 9B would be located to the south of this location on the south side of an existing, wooden H-frame transmission line, which parallels the trail (within feet) at the Hagerman Fossil Beds National Monument, between the trail and the Project, which will be built 1.5 miles away.

Figure 3.3-168. KOP 62. View from Oregon NHT facing southeast toward Alternative 9B. Photo taken 11/13/09 at 4:01 p.m.

Figure 3.3-169. KOP 62. View from Oregon NHT facing north toward Alternative 8A. Photo taken 11/13/09 at 4:01 p.m.

The historic setting is impacted by modern intrusions in this direction. Due to this factor and the KOP's distance from Alternative 8A, the VCR for this KOP is assessed as weak. The Project's elements would not dominate the setting in either direction; therefore, there would not be an adverse impact to the resource at this location.

KOP C81 (Figures 3.3-170 and 3.3-171) is located at the historic Rock Creek Stage Station/Stricker Ranch property adjacent to the Oregon NHT, approximately 330 feet north of Rock Creek and 1 mile west of the High Line Canal. Segment 7 and Alternative 7H are located 4.9 miles to the southeast, Alternative 7I would be located 3.7 miles to the south of the KOP. The Proposed Route in Segment 9 would be located approximately 3.2 miles to the south of this location and the Proposed Route in Segment 10 would be located approximately 3.9 miles to the east.

Though trail markers are present at this locality, it is difficult to discern the location of the Oregon NHT. If the trail is, in fact, coincident with the road that leads to the Stricker House, it is heavily utilized by tourists accessing this attraction. The setting contains several farm houses and associated agricultural equipment visible in all directions. A wooden, single-pole transmission line is visible to the east and paralleling the road leading to the Stricker home site, just southwest of this KOP.

Figure 3.3-170. KOP C81. View to south from behind Stricker Cabin toward the Proposed Route in Segment 9. Photo taken 12/03/09 at 4:15 p.m.

Figure 3.3-171. KOP C81. View to east from behind Stricker Cabin toward the Proposed Route in Segment 10. Photo taken 12/03/09 at 4:15 p.m.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of a different form. Vegetation to the south of this KOP, on the edge of Rock Creek, provides a natural screen of views toward the Project in that direction. Due to this factor and the KOP's distance from the Proposed Route and Route Alternatives, the VCR for this KOP is assessed as weak for all routes. The Project's elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Oregon NHT – South Alternate

KOP C90 (Figures 3.3-172, 3.3-173, and 3.3-174) is located on a segment of the Oregon NHT – South Alternate route within the SRBOP. The South Alternate forks approximately 0.5 mile to the southeast. The eastern branch follows Rabbit Creek to the northeast. KOP C90 is located on the west branch 1 mile north-northeast of the town of Murphy. Murphy Gulch is 0.5 mile to the east. This portion of the trail continues north following the route of State Highway 75. The KOP is approximately 2 miles south of the Proposed Route in Segment 8, 0.5 mile south of Alternative 9D, and 1 mile east of the Proposed Route in Segment 9 and Alternative 9E. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-51 and E.3-52).

Figure 3.3-172. KOP C90. View of the Oregon NHT-South Alternate, standing on trail and facing northwest. Photo taken 12/09/09 at 1:30 p.m.

Figure 3.3-173. KOP C90. View from the Oregon NHT – South Alternate, standing on trail and facing southwest toward town of Murphy, the Proposed Route in Segment 9. and Alternative 9E. Photo taken 12/09/09 at 1:30 p.m.

Figure 3.3-174. KOP C90. View from the Oregon NHT – South Alternate facing north toward Alternative 9D. Photo taken 12/09/09 at 1:35 p.m.

The resource at this location consists of a well-marked two-track road that bisects Con Shea Road. Off-road vehicle traffic has altered the width of the trail ruts and the road has washed out in some areas to the south of the KOP. There are no modern intrusions to the setting with the exception of a limited view of the town of Murphy to the southwest.

Due to the Project's distance from this KOP and the introduction of new elements to the resource's viewshed to the north, the VCR for this KOP is assessed as strong for Alternative 9D and weak for all other routes.

The proposed Project elements from Alternative 9D may dominate the setting or may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource from Alternative 9D at this location. There would not be an adverse impact to the resource from the Proposed Routes in Segment 8 and Segment 9 or Alternative 9E.

KOP C91 (Figure 3.3-175) is located on a segment of the Oregon NHT – South Alternate in the SRBOP, approximately 1.5 miles northwest of Sinker Creek Butte. The KOP is 2.3 miles southwest of Alternative 9D and views toward the Proposed Route in Segment 9 are screened by topography. This portion of the trail has been designated as a high-potential segment by the NPS (1998).

The resource at this location consists of a deep swale with visible ruts. The setting contains a wooden, single-pole transmission line approximately 3 miles to the northeast.

Figure 3.3-175. KOP C91. View from the Oregon NHT – South Alternate facing northeast toward Alternative 9D. Photo taken 12/09/09 at 3:45 p.m.

The majority of Alternative 9D that is visible from this location parallels an existing transmission line. The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of a different form, material, and texture. Due to the similarity of the Project's design with existing structures in the north, the KOP's distance from the Proposed Route and Route Alternatives, and the cumulative impact of adding additional structures, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

KOP C113 (Figures 3.3-176 and 3.3-177) is located on a segment of the Oregon NHT – South Alternate within the SRBOP, approximately 2 miles south of the Snake River and 2.7 miles east-southeast of the C.J. Strike Reservoir. The KOP is located 200 feet north of State Highway 78, where the highway is intersected by an improved gravel road. It is located 2.8 miles north of the Proposed Route in Segment 9.

The resource at this location is bisected by the gravel road, but remains otherwise largely undisturbed. At least two discrete ruts are visible here, but the trail is obscured by dense vegetation. Some alluvial erosion is evident. What appears to be a road maintenance facility, including a chain link fence set in concrete and two large metal refuse containers, is present at the southeast corner of the intersection of the gravel road and State Highway 78. A utility line with wooden, single-pole supports parallels State Highway 78 at this location. Cultivated agricultural fields are visible approximately 0.5 mile southeast of the KOP, and fence lines associated with these fields are present

Figure 3.3-176. KOP C113. View of the Oregon NHT – South Alternate, facing west. Photo taken 7/28/10 at 11:55 a.m.

Figure 3.3-177. KOP C113. View from the Oregon NHT-South Alternate, facing southeast toward the Proposed Route in Segment 9. Photo taken 7/28/10 at 11:55 a.m.

approximately 350 feet to the south. Two gabled roofs of agricultural outbuildings are visible approximately 0.25 mile to the southwest

The Project's design shares some similarities with existing structures, but will introduce new elements that are of different form and material. Due to this factor and the KOP's distance from the Proposed Route, the VCR for this KOP is assessed as moderate. The Project's elements would draw the attention of the casual observer and would dominate the setting for the Proposed Route in Segment 9. There would be an adverse impact to the resource at this location.

KOP C115 (Figures 3.3-178, 3.3-179, and 3.3-180) is located on a segment of the Oregon NHT – South Alternate within the SRBOP, approximately 0.9 mile west of the Snake River and 0.8 mile north of State Highway 78. The KOP is located adjacent to a north-south fence line. The Proposed Route in Segment 9 is located 4 miles south of this location. Due to topographic relief, only portions of the Proposed Route in Segment 9 would be visible from this location.

The resource at this location consists of a southeast-to-northwest trending swale lacking discernable ruts. Northwest of the KOP, the trail is undisturbed. Southeast of the KOP, however, the trail becomes increasingly difficult to discern with distance, and is eventually obliterated by agricultural fields. Several agriculture-related structures are visible to the east of the KOP at a distance of approximately 1 mile. Cultivated fields

Figure 3.3-178. KOP C115. View of the Oregon NHT – South Alternate, facing northwest. Trail is visible as gradual swale in the foreground with trail markers in the background. Photo taken 7/29/10 at 11:24 a.m.

Figure 3.3-179. KOP C115. View from the Oregon NHT-South Alternate, facing southeast toward the Proposed Route in Segment 9. Photo taken 7/29/10 at 11:24 a.m.

Figure 3.3-180. KOP C115. View from the Oregon NHT – South Alternate, facing south toward the Proposed Route in Segment 9. Photo taken 7/29/10 at 11:24 a.m.

occupy most of the land immediately east of the KOP and west of the Snake River. Another north-south fence line is visible approximately 200 feet west of the KOP. Two trail markers are visible just beyond this second fence. A wooden, single-pole utility line parallels State Highway 78 0.8 mile to the south.

Due to the similarity of the Project's design with existing structures, the KOP's distance from the Proposed Route and Route Alternatives, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. There would not be an adverse impact to the resource at this location.

KOP C116 (Figures 3.3-181, 3.3-182, and 3.3-183) is located on a segment of the Oregon NHT – South Alternate within the SRBOP, off of State Highway 78, at the entrance to the Cove Recreation Site, 1 mile south of the upper body of C.J. Strike Reservoir. It is located 0.5 mile south of Alternative 9D. Due to topographic relief, only Alternative 9D would be visible from this KOP.

The trail is bisected by the BLM recreation area access road but is in otherwise excellent condition at this location. The resource consists of a shallow yet well-defined swale exhibiting 8-inch deep ruts. State Highway 78 parallels the trail in a southeast-to-northwest direction here at a distance of approximately 50 feet. Several structures are visible approximately 2.5 miles to the northwest, on the north bank of C.J. Strike Reservoir. A utility line supported by wooden, single-post support structures crosses the trail to the northwest and is visible approximately 150 feet from the KOP. A

Figure 3.3-181. KOP C116. View of the Oregon NHT – South Alternate, facing southeast. Photo taken 7/29/10 at 12:45 p.m.

Figure 3.3-182. KOP C116. View from the Oregon NHT – South Alternate, facing northwest toward Alternative 9D with view of utility line, agricultural field, and State Highway 78. Trail is visible as swale in foreground. Photo taken 7/29/10 at 12:45 p.m.

Figure 3.3-183. KOP C116. View from the Oregon NHT – South Alternate, facing north toward Alternative 9D with view of utility line and H-frame transmission line. Photo taken 7/29/10 at 12:45 p.m.

transmission line with wooden, H-frame support structures is also visible to the northwest at a distance of approximately 0.25 mile. The trail is obliterated by cultivated agricultural fields approximately 500 feet west of this KOP.

The Project's design shares some similarities with existing structures in the area but would introduce new elements that are of different form and color. Due to the similarity of the Project's design with existing structures in the south, the KOP's distance from Alternative 9D, and the cumulative effect of adding additional structures, the VCR for this KOP is assessed as moderate. The Project's elements would draw the attention of the casual observer but would not dominate the setting. There would be an adverse impact to the resource at this location.

KOP C117 (Figures 3.3-184 and 3.3-185) is located on a segment of the Oregon NHT – South Alternate within the SRBOP, 1.1 miles north of the lower body of C.J. Strike Reservoir. It is located 1 mile north of Alternative 9D. Due to topography, only portions of Alternative 9D would be visible from this location. A photographic simulation depicting indirect (visual) effects to the resource has been generated for the KOP (see Figures E-53 and E-54 in Appendix E).

The trail is bisected by an improved gravel road and a parallel fence line at this location. West of the KOP, the trail consists of an undisturbed set of parallel swales. To the east of the KOP, the trail is obliterated by a cultivated agricultural field. A transmission line with wooden, H-frame support structures is visible approximately 100 feet west of the trail at this location, and an additional transmission line with wooden, single-pole supports is visible approximately 150 feet west of the trail.

Figure 3.3-184. KOP C117. View of the Oregon NHT – South Alternate, facing west. Photo taken 7/29/10 at 1:39 p.m.

Figure 3.3-185. KOP C117. View from the Oregon NHT – South Alternate, facing south toward Alternative 9D. Photo taken 7/29/10 at 1:39 p.m.

The Project is located to the south of this KOP, away from existing impacts to the cultural landscape. Due to the proximity of the KOP and the introduction of new elements in a new area of the resource's viewshed, the VCR for this KOP is assessed as moderate to strong. The proposed Project elements would dominate the setting to the south; therefore, there would be an adverse impact to the resource at this location.

KOP C120 (Figure 3.3-186) is located on a segment of the Oregon NHT – South Alternate south of the C.J. Strike Reservoir, 0.8 mile west of the junction of State Highway 51 and State Highway 78. It is located 2.1 miles northeast of Alternative 9D.

The resource at this point consists of a largely undisturbed, well-defined swale. Individual ruts are difficult to discern at this location due to heavy vegetation. The trail is bisected by an unimproved, two-track recreation area access road. Multiple structures are visible approximately 1 mile north of the KOP, on the north bank of the C.J. Strike Reservoir. A barn and cultivated agricultural field are visible approximately 0.5 mile to the southeast. Two transmission lines—one with wooden, single-pole supports and one with wooden, H-frame supports—are visible approximately 0.25 mile southwest of this point.

The proposed Project is located south of the existing transmission lines and beyond the agricultural field. The view of the Project is largely obstructed by topography. The Project's design shares some similarities with existing structures but would introduce new elements that are of different form and color. Due to this factor and the KOP's distance from the alternative, the VCR for this KOP is assessed as weak to moderate.

Figure 3.3-186. KOP C120. View of the Oregon NHT – South Alternate, facing southwest toward Alternative 9D. Trail is visible as swale with marker partially visible in shrubs. Photo taken 7/30/10 at 12:43 p.m.

The Project's elements may draw the attention of the casual observer but would not dominate the setting; therefore, there would be an adverse impact to the resource at this location.

Historic Resources

KOP C101 (Figure 3.3-187) is located at the historic Hollister School. The point is approximately 3.3 miles south of the Proposed Route in Segment 9 and 3.7 miles south-southwest of Alternative 9A. The setting for this property contains housing structures, communication poles, and property fences within 0.5 mile of this KOP.

Views of the Proposed Route in Segment 9 and Alternative 9A are intermittent and screened by topography. Due to the KOP's distance from the Proposed Route and Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-187. KOP C101. View northward toward the Proposed Route in Segment 9 from the Hollister School. Photo taken 08/19/08 at 1:24 p.m.

KOP C104 (Figure 3.3-188) is located on Oreana Loop Road near the town of Oreana at the historic Our Lady Queen of Heaven Catholic Church. Segment 9 is located 1.0 mile to the north and Alternative 9E would be located 1.0 mile to the southwest. The setting at this resource contains housing structures, a wooden, single-pole transmission line, and other support structures within 0.25 mile to the north of this KOP.

Views from this KOP toward the Proposed Route in Segment 8 are intermittent and screened by topography. Due to the KOP's distance from the Proposed Route and Route Alternatives and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak for Alternative 9E and weak to moderate for Segment 9. The Project elements for the Proposed Route in Segment 9 would not dominate the setting but may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource from Segment 9 at this location. There would not be an adverse impact to the resource from Alternative 9E.

Figure 3.3-188. KOP C104. View toward Alternative 9E from Our Lady Queen of Heaven Catholic Church. Photo taken 08/18/08, facing northwest, 42 feet north of church.

KOP C109 (Figure 3.3-189) is located on the west side of the historic Owyhee County Courthouse. The KOP is 3.3 miles south of the Proposed Route in Segment 8, 0.4 mile northeast of the Proposed Route in Segment 9, 0.8 mile northeast of Alternative 9E, and 1.6 miles southeast of Alternative 9D. The setting contains numerous housing and support structures within the town of Murphy, a wooden, single-pole transmission line, and fences within 0.25 mile to the north and west of the property.

The proximity of the surrounding structures and natural vegetation provides screening of views toward the Proposed Route and all Route Alternatives from this KOP. Due to this factor, the similarity of the Project's design with existing structures, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Figure 3.3-189. KOP C109. View to southwest toward the Proposed Route in Segment 9 and Alternative 9E from the northwest side of the Owyhee County Courthouse. Photo taken 12/11/08 at 10:13 a.m.

Segment 10

Segment 10, as proposed, would link the Cedar Hill and Midpoint Substations with a 33.6-mile single-circuit 500-kV line, following a WWE corridor for most of its distance. Twenty-eight acres of the expansion of the Midpoint Substation and of the construction of the Cedar Hill Substation are attributed to Segment 10. There are no Route Alternatives proposed along this segment (see Appendix A, Figure A-12).

Prehistoric Resource

KOP C82 (Figure 3.3-190) is located southwest of the basaltic lava blister that signifies the exterior of Wilson Butte Cave. The KOP is located 5.5 miles northeast of the Proposed Route in Segment 10. The Proposed Route in Segment 6 would be located 1.9 miles to the north, but the route consists of an extant line on which minimal construction would occur at each end of the route near the existing substations. In addition to that existing line, another wooden, H-frame transmission line is located approximately 0.25 mile to the north and 3.5 miles to the south. The setting also contains an agricultural complex that is visible approximately 4 miles to the south and several communication towers are visible on the horizon.

Figure 3.3-190. KOP C82. View looking southwest towards the Proposed Route in Segment 10. Photo taken 12/04/09 at 9:50 a.m.

Due to the distance of the KOP to the Proposed Route, the similarity of the Project's design with existing structures, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as weak. The Project elements would not dominate the setting; therefore, there would not be an adverse impact to the resource at this location.

Historic Resource

KOP C99 (Figure 3.3-191) is located at the Minidoka National Historic Site, approximately 1 mile northeast of the Proposed Route in Segment 10. Photographic simulations depicting indirect (visual) impacts to the resource have been generated for this KOP (Appendix E, Figures E.3-55 and E.3-56). The setting contains a wooden, H-frame transmission line located approximately 3 miles to the south and an overhead electric distribution line in the foreground.

Due to the distance of the KOP to the Proposed Route, the similarity of the Project's design with existing structures, and the potential for the elements to blend in with the backdrop, the VCR for this KOP is assessed as moderate. The Project elements may draw the attention of the casual observer; therefore, there would be an adverse impact to the resource at this location.

Figure 3.3-191. KOP C99. View northwest toward the Proposed Route in Segment 10 from Minidoka National Historic Site. Photo taken 07/31/08 at 10:04 a.m.

3.3.3.4 Overall Impacts of the Proposed Route and Alternatives by Segment

One of the purposes of this EIS is to assess the relative impacts of the Proposed Route and Route Alternatives on cultural resources. Because the entirety of each alternative has not been inventoried for cultural resources, a uniform and exact method to calculate the quantity and quality of resources in each alternative, and compare that number against those in the Proposed Route, is elusive. A simple approach could be used, whereby the total number of known cultural resources in the Proposed Route and Route Alternatives are compared, and the route segment that has the fewest resources and, by extrapolation, the least impacts, is selected. Such a one-dimensional approach ignores the fact that all cultural resources are not equal in the quantity and quality of information they can provide to clarify the regional culture history.

Consequently, a pooled quantitative/qualitative approach is used, which identifies variables that are individually incapable of providing a more robust measure of impacts, but collectively provide an approximate assessment of greater or lesser impacts between alternatives. This method incorporates the following variables:

Literature Review + 15% Survey Results + Overall Visual Impact = Estimated Impact

Each of these variables embraces several other measures, as explained below.

- **Literature Review** – Tables 3.3-3 and 3.3-4 summarize the total number of known cultural resources within the Project area. The total numbers of prehistoric and historic resources in each segment are useful measures, but they are somewhat limited in scope, as noted above. Additional information can be extracted from these tabulations; the summary measures differ for prehistoric and historic sites.
  - Data Potential – defined as the capability of an individual site to provide important information about the regional cultural history. Several resource types are included in the tabulation and provide, to a greater or lesser extent, data potential. The focus for this analysis, however, is on open camps and limited activity sites, because together they comprise 96 percent of the documented cultural resources. Open camps usually contain more information about their occupation(s) by having features, structural remains, and/or a diverse and broad range of artifacts. In contrast, limited activity sites are generally varying-sized scatters of lithic materials with more limited (but not necessarily inconsequential) information potential. Thus, the ratio of open camps to limited activity sites was selected as a proxy measure of Data Potential, this value ranging from 0, where open camps are absent, to nearly 4, where many open camps are present. More prehistoric resources and greater Data Potential values per segment equate to greater impacts.
  - Historic Value – defined as an ordinal scale with values ranging from 1 to 4, possibly encompassing two or more criteria of NRHP eligibility. Sites that have standing structures and archaeological potential were assigned a value of 4. Intact historic trail ruts might have been placed in this category but direct impacts to such resources are less likely because the trail segments would be spanned by the transmission line. Indirect (visual) impacts to historic trails are much more likely but those impacts are captured by the Overall Visual Impacts variable (see below). Sites with standing structures but without archaeological potential were assigned a value of 3. Sites that have archaeological potential but no standing structures are slightly less valuable than those with standing structures and were accorded a value of 2. Finally, historic debris scatters have limited importance and were given a value of 1. For each route, these values were summed and divided by the number of resources to achieve a "score" that reflects the Historic Value of resources within that route. More historic resources and higher measures of Historic Value per segment equate to greater impacts.
- **15 percent Survey Results** – for each Route Alternative, a 15 percent sample, consisting of discrete 1-mile-long by 500-foot-wide segments, was surveyed and all cultural resources documented. In the Kemmerer FO, however, the substantial amount of existing cultural resources data provides sufficient information to represent Phase I survey results. In this analysis, these variables are represented by the Kemmerer FO data from previous cultural inventories and known sites within a 500-foot-wide zone along the Segment 4 Proposed Route

and Route Alternatives within the Kemmerer FO. Preliminary results of a 15 percent survey along 7I and 7J in Nevada, conducted July 2011, were used in evaluating these alternatives. Full survey results will be reported in the Final EIS. Overall, the 15 percent survey results are statistically less reliable for comparing routes, given the manner in which the sample was drawn (i.e., confined to Tribal and public lands , from previously unsurveyed areas, on shallower slopes, and in undisturbed areas), but they have modest interpretive value and provide valuable insights into the distribution of cultural resources in each segment. Because the magnitude of the 15 percent survey is probably influenced by the size of the investigated areas and thereby inflates the assessment of impacts, the raw frequency in each segment has been "normalized" by dividing that number by the segment's total length.

- **Overall Visual Impact (OVI)** – defined as general impacts upon historic trails and other cultural resources by the introduction of an overhead transmission line. This variable represents a combination of the VCR assigned to the KOPs for each of the historic trails and cultural resources and the condition of the trail or resource for each route. The VCR values range from 1 (weak) to 5 (strong) (see Methods in Section 3.3.3.3 for additional description of these values). Trail/Resource Condition ranged from 5 (good), with intact, relatively pristine trail segments or resources, to 1 (poor), where little or no evidence of the trail segment or resource remains. The two measures are summed and the average taken to produce a measure of Overall Visual Impact. Higher OVIs per segment equate to greater impacts.
- **Impact Value (IV)** – a combination of the number of prehistoric and historic sites, the 15 percent survey results, Data Potentials, Historic Values, and Overall Visual Impacts. This value measures the intensity of impacts for the Proposed Route and Route Alternatives within each segment and is calculated as follows:

  IV = ((Alt. # P) ÷ (Alt. # comp. P + Alt. # comp. H)) + (DP) + ((Alt. # P) ÷ (Alt. # comp. P + Alt. # comp. H)) + (HV) + (15% ÷ SL) + (OVI)

  Where.

  Alt. # = Alternative segment

  Comp. = comparison route for each segment alternative

  P = total number of prehistoric sites

  H = total number of historic sites

  DP = data potential

  HV = historic value

  15% = 15 percent sample

  SL = segment length (mi)

  OVI = overall visual impact

The raw IV does not, however, take into consideration the fact that the routes differ in length and number of previous surveys. Longer segments and segments with more surveys are likely to have more resources, which can skew the results when the segments are compared. To minimize the effects of these differences, a Survey Coverage Index (SCI) was produced by dividing the number of surveys (defined as the total number of surveys entered into the SHPO GIS database within a 1-mile buffer of the Route Alternative) by the length (in miles) of each segment. The IVs were then "normalized" by dividing the IV by the SCI to produce an Adjusted IV.

Table 3.3-7 summarizes these Adjusted IVs, which are described further below by segment. The impacts for each Route Alternative are compared to the impacts of the comparison portion of the Proposed Route. The route (proposed or alternative) with the lower Adjusted IV is considered to have fewer impacts. Figures 3.3-192 through 3.3-207 graphically compare the Route Alternatives in each segment against the portion of the Proposed Route that corresponds to that Route Alternative. The places where the Proposed Route and Route Alternatives coincide are shown in yellow and labeled "common corridor," within which the impacts are expected to be similar. For each comparison, the route depicted in red has more impacts than the route against which it is compared; routes depicted in green have fewer impacts.

Table 3.3-7. Analysis of Impacts by Segment

Segments		Literature Review				15% Survey Results (total number of sites)	Overall Visual Impact	Survey Coverage			Impact Value	Adjusted Impact Value
		Prehistoric		Historic				Segment Length (mi)	Number of Surveys	Survey Coverage Index (surveys/mile)		
		No.	Data Potential	No.	Historic Value							
1E	Proposed – Total Length	36		38		10		100.6	62	0.62		
	Alternative 1E-A	18	0.21	19	1.0	–	5.0	16.1	34	2.11	7.49	3.54
	Proposed – Comparison Portion for Alternative 1E-A	7	0.50	22	2.5	–	5.2	17.6	34	1.93	8.98	4.65
	Alternative 1E-B	21	1.33	7	2.0	4	7.0	37.8	15	0.40	12.19	30.71
	Proposed – Comparison Portion for Alternative 1E-B	12	1.75	4	1.00	–	–	59.2	30	0.51	3.72	6.55
	Alternative 1E-C	17	1.12	6	2.0	2	4.0	48.7	46	0.94	7.90	8.37
	Proposed – Comparison Portion for Alternative 1E-C	20	1.4	11	1.50	10	–	75.3	29	0.39	4.38	11.37
1W(a)	Proposed – Total Length	33		36		–		76.5	77	1.01		
	Alternative 1W-A	8	0.30	28	2.62	6	5.0	70.5	73	1.04	9.06	8.75
	Proposed – Comparison Portion for Alternative 1W-A	6	0.50	28	3.25	–	5.2	16.2	32	1.98	9.89	5.01
1W(c)	Proposed – Total Length	44		25		3		16.2	35	2.16		
2	Proposed – Total Length	357		109		4		96.7	612	6.33		
	Alternative 2A	82	2.11	41	1.27	–	7.3	28.4	109	3.84	11.79	3.07
	Proposed – Comparison Portion for Alternative 2A	66	1.83	45	1.0	–	7.8	28.7	104	3.62	11.53	3.18
	Alternative 2B	20	0.81	14	1.2	–	8.0	6.2	38	6.13	11.11	1.81
	Proposed – Comparison Portion for Alternative 2B	19	1.00	12	1.0	–	7.0	7.0	34	4.86	9.91	2.04
	Alternative 2C	67	3.57	15	1.0	–	6.0	24.4	47	1.93	11.61	6.03
	Proposed – Comparison Portion for Alternative 2C	40	3.18	39	1.0	–	8.0	28.4	49	1.73	13.14	7.62
3	Proposed – Total Length	293		49		1		46.7	462	9.89		
4	Proposed – Total Length	574		82		21		203.0	603	2.97		
	Alternative 4A	215	1.15	85	1.11	31	6.5	85.4	468	5.48	9.79	1.79
	Proposed – Comparison Portion for Alternative 4A	407	3.82	44	1.25	–	6.9	90.4	456	5.04	13.47	2.67
	Alternative 4B	380	3.15	90	1.04	29	7.8	100.5	440	4.38	13.32	3.04
	Proposed – Comparison Portion for Alternative 4B	407	3.82	44	1.25	–	6.9	90.4	465	5.14	12.93	2.51
	Alternative 4C	228	3.38	34	1.21	28	7.2	101.9	433	4.25	12.65	2.98
	Proposed – Comparison Portion for Alternative 4C	407	3.82	44	1.25	–	6.9	90.4	456	5.04	13.69	2.71
	Alternative 4D	217	3.52	27	1.65	28	7.8	101.1	439	4.34	13.79	3.18

Table 3.3-7. Analysis of Impacts by Segment (continued)

Segments		Literature Review				15% Survey Results (total number of sites)	Overall Visual Impact	Survey Coverage			Impact Value	Adjusted Impact Value
		Prehistoric		Historic				Segment Length (mi)	Number of Surveys	Survey Coverage Index (surveys/mile)		
		No.	Data Potential	No.	Historic Value							
4	Proposed – Comparison Portion for Alternative 4D	407	3.82	44	1.25	–	6.9	90.4	456	5.04	13.82	2.74
	Alternative 4E	216	3.80	26	1.11	27	7.0	102.5	431	4.20	12.71	3.02
	Proposed – Comparison Portion for Alternative 4E	407	3.82	44	1.25	–	6.9	90.4	456	5.04	13.83	2.74
	Alternative 4F	215	3.77	23	1.16	26	6.8	87.8	464	5.28	12.55	2.38
	Proposed – Comparison Portion for Alternative 4F	407	3.82	44	1.25	–	6.9	90.4	456	5.04	13.86	2.75
5	Proposed – Total Length	21		8		5		54.6	52	0.95		
	Alternative 5A	7	–	2	–	–	7.5	34.6	13	0.38	12.00	31.94
	Proposed – Comparison Portion for Alternative 5A	1	–	1	–	–	6.5	27.1	7	0.26	6.72	26.02
	Alternative 5B	3	–	1	–	–	6.8	45.3	18	0.40	8.80	22.15
	Proposed – Comparison Portion for Alternative 5B	1	–	1	–	–	6.5	27.1	7	0.26	7.00	27.10
	Alternative 5C	–	–	–	–	1	7.0	26.1	6	0.23	7.04	30.62
	Proposed – Comparison Portion for Alternative 5C	1	–	–	–	–	8.0	33.2	15	0.45	8.00	17.71
	Alternative 5D	17	–	6	2.50	–	6.0	17.5	26	1.49	9.50	6.39
	Proposed – Comparison Portion for Alternative 5D	16	–	7	2.0	–	6.0	19.4	30	1.55	9.00	5.82
	Alternative 5E	11	–	6	1.50	–	6.0	5.3	21	3.96	8.27	2.09
	Proposed – Comparison Portion for Alternative 5E	15	–	7	2.0	–	6.0	5.7	22	3.86	9.29	2.41
6	Proposed – Total Length	–		–		–		85.3	56	.66		

Table 3.3-7. Analysis of Impacts by Segment (continued)

Segments		Literature Review				15% Survey Results (total number of sites)	Overall Visual Impact	Survey Coverage			Impact Value	Adjusted Impact Value
		Prehistoric		Historic								
		No.	Data Potential	No.	Historic Value			Segment Length (mi)	Number of Surveys	Survey Coverage Index (surveys/mile)		
7	Proposed – Total Length	17		14		8		118.1	101	.86		
	Alternative 7A	5	–	4	1.0	–	4.0	41.5	18	0.43	6.80	15.68
	Proposed – Comparison Portion for Alternative 7A	2	–	3	2.50	4	8	38.8	19	0.49	11.16	22.79
	Alternative 7B	2	–	4	1.00	–	5.3	50.1	23	0.46	7.50	16.34
	Proposed – Comparison Portion for Alternative 7B	2	–	3	2.50	4	8	38.8	19	0.49	11.44	23.35
	Alternative 7C	1	–	2	–	–	8	20.3	28	1.38	8.75	6.34
	Proposed – Comparison Portion for Alternative 7C	2	–	2	–	–	9.5	20.1	33	1.64	10.83	6.60
	Alternative 7D	–	–	2	–	–	–	6.8	21	3.09	0.33	0.11
	Proposed – Comparison Portion for Alternative 7D	2	–	4	1.5	–	–	6.2	20	3.23	4.50	1.40
	Alternative 7E	–	–	2	–	–	–	4.5	9	2.00	1.00	0.50
	Proposed – Comparison Portion for Alternative 7E	–	–	2	–	–	–	3.8	8	2.11	1.00	0.48
	Alternative 7F	1	–	2	1.00	–	–	10.8	12	1.11	2.50	2.25
	Proposed – Comparison Portion for Alternative 7F	–	–	2	–	–	–	10.5	10	0.95	0.67	0.70
	Alternative 7G	2	–	1	–	–	–	3.2	9	2.81	1.00	0.36
	Proposed – Comparison Portion for Alternative 7G	2	–	1	–	1	–	3.1	9	2.90	1.32	0.46
	Alternative 7H	38	0.02	22	1.0	26	6.5	127.4	161	1.26	9.66	7.64
	Proposed – Comparison Portion for Alternative 7H	17	–	14	2.0	8	7.0	117.9	101	0.86	9.58	11.19
	Alternative 7I	101	0.03	18	1.38	40	7.3	173.0	202	1.17	12.78	10.95
	Proposed – Comparison Portion for Alternative 7I	17	–	14	2.00	8	7.0	117.9	101	0.86	9.33	10.89
	Alternative 7J[2/]	101	0.04	22	3.00	40	7.4	183	189	1.03	13.22	12.80
	Proposed – Comparison Portion for Alternative 7J[1/]	27	0.04	21	2.20	–	7.6	144	168	1.17	10.23	8.77

Table 3.3-7. Analysis of Impacts by Segment (continued)

Segments		Literature Review				15% Survey Results (total number of sites)	Overall Visual Impact	Survey Coverage			Impact Value	Adjusted Impact Value
		Prehistoric		Historic				Segment Length (mi)	Number of Surveys	Survey Coverage Index (surveys/mile)		
		No.	Data Potential	No.	Historic Value							
8	Proposed – Total Length	48		68		13		131.0	160	1.22		
	Alternative 8A	52	0.02	50	1.14	2	6.9	53.6	83	1.55	10.47	6.76
	Proposed – Comparison Portion for Alternative 8A	21	–	22	1.23	11	6.1	51.4	63	1.23	7.97	6.50
	Alternative 8B	9	0.60	25	1.53	3	6.0	44.0	67	1.52	8.73	5.73
	Proposed – Comparison Portion for Alternative 8B	25	1.00	39	2.14	2	4.8	45.2	76	1.68	9.87	5.87
	Alternative 8C	–	–	2	2.00	–	–	6.5	11	1.69	3.00	1.77
	Proposed – Comparison Portion for Alternative 8C	–	–	2	–	1	–	6.5	19	2.92	1.15	0.39
	Alternative 8D	2	1.00	5	1.00	–	–	8.1	8	40.99	2.88	2.91
	Proposed – Comparison Portion for Alternative 8D	2	2.00	6	1.00	–	–	6.9	9	1.30	4.14	3.18
	Alternative 8E	11	–	9	1.00	3	7.6	19	41	2.16	9.31	4.32
	Proposed – Comparison Portion for Alternative 8E	17	0.70	19	3.09	–	6	7	20	2.86	11.59	4.06
9	Proposed – Total Length	75		41		8		161.8	198	1.22		
	Alternative 9A	2	–	–	–	–	6.0	8.1	24	2.96	6.40	2.16
	Proposed – Comparison Portion for Alternative 9A	1	–	4	2.50	–	6.0	8.3	38	4.58	11.00	2.40
	Alternative 9B	30	–	10	1.00	5	7.0	53.2	50	0.94	8.70	9.26
	Proposed – Comparison Portion for Alternative 9B	54	0.09	12	1.37	–	7.3	49.0	38	0.78	10.41	13.42
	Alternative 9C	31	–	6	1.00	5	4.0	14.2	25	1.76	6.21	3.53
	Proposed – Comparison Portion for Alternative 9C	40	0.10	3	2.50	–	–	14.3	20	1.40	3.76	2.69
	Alternative 9D	49	0.20	47	1.43	–	7.8	58.2	71	1.22	12.68	10.39
	Proposed – Comparison Portion for Alternative 9D	10	–	18	2.07	8	5.5	57.2	64	1.12	8.00	7.15
	Alternative 9E	25	0.04	7	1.42	6	5.3	68.7	67	0.98	7.99	8.19
	Proposed – Comparison Portion for Alternative 9E	10	–	18	2.07	8	5.5	57.2	64	1.12	8.58	7.67
	Alternative 9F	16	0.11	30	1.46	4	7.6	63	76	1.21	10.88	9.02
	Proposed – Comparison Portion for Alternative 9F	10	–	18	2.07	–	5.6	57	64	1.12	8.28	7.37
	Alternative 9G	59	0.02	44	1.46	3	6	56	70	1.25	11.21	8.97
	Proposed – Comparison Portion for Alternative 9G	10	–	18	2.07	–	5.6	57	64	1.12	7.94	7.07

Table 3.3-7. Analysis of Impacts by Segment (continued)

	Segments	Literature Review				15% Survey Results (total number of sites)	Overall Visual Impact	Survey Coverage			Impact Value	Adjusted Impact Value
		Prehistoric		Historic				Segment Length (mi)	Number of Surveys	Survey Coverage Index (surveys/mile)		
		No.	Data Potential	No.	Historic Value							
	Alternative 9H	26	0.06	27	1.5	3	5	34	75	2.21	8.54	3.87
	Proposed – Comparison Portion for Alternative 9H	10	–	18	2.07	–	5.6	57	64	1.12	8.20	7.30
10	Proposed – Total Length	0		7		1		33.6	49	1.46		

1/ Alternative 7J connects with Segment 9 approximately 25.8 miles west of the proposed Cedar Hill Substation, which is the western terminus of Segment 7 and the beginning point for Segment 9. The table above compares 7J (202 miles) with the corresponding portion of Segment 7/9 (118.1 miles of Segment 7 and 25.8 miles of Segment 9, for a total of 143.9 miles). All other Segment 7 alternatives are compared to Segment 7 of the Proposed Route (118.1 miles) only.

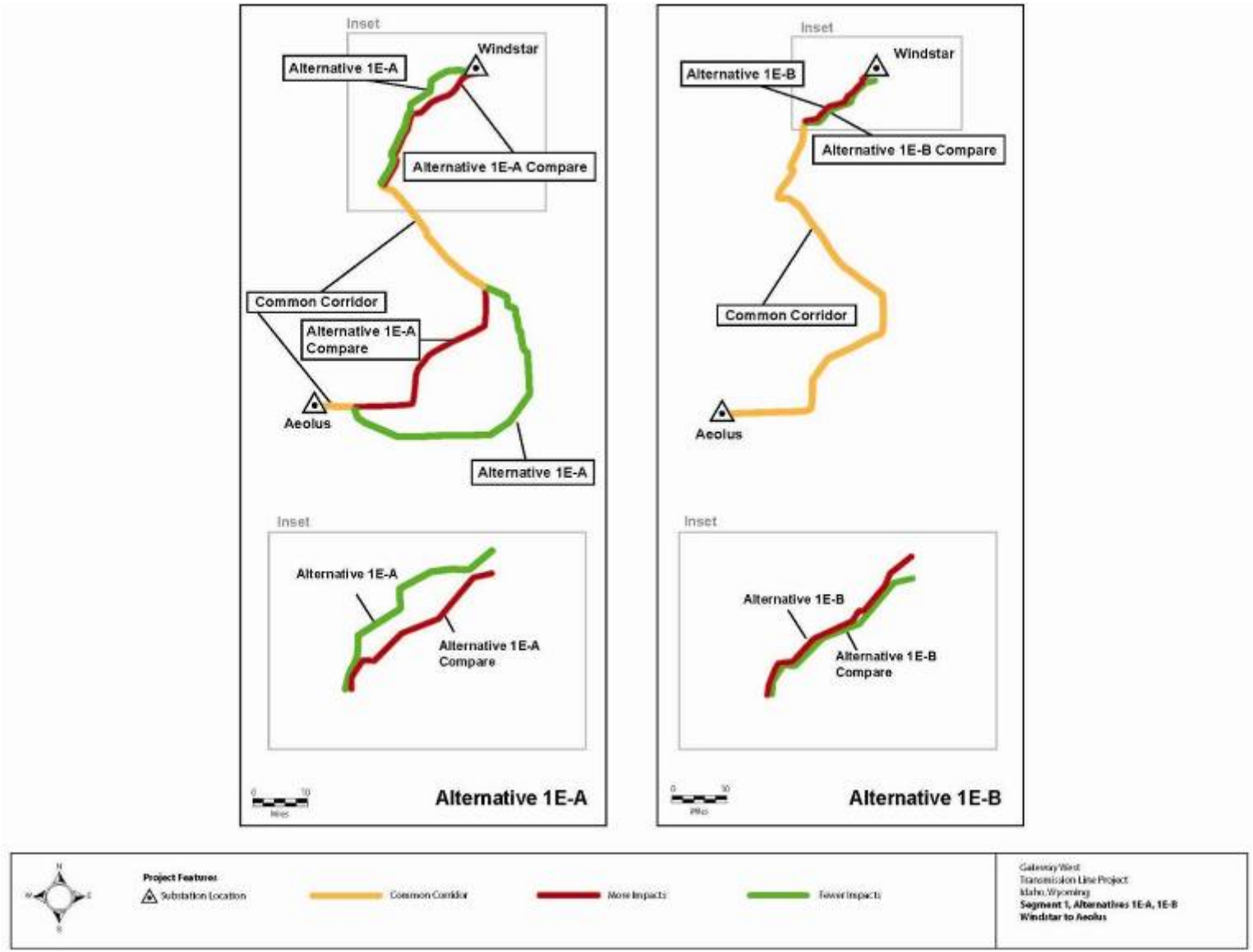

Figure 3.3-192. Segment 1, Alternatives 1E-A, 1E-B, Windstar to Aeolus

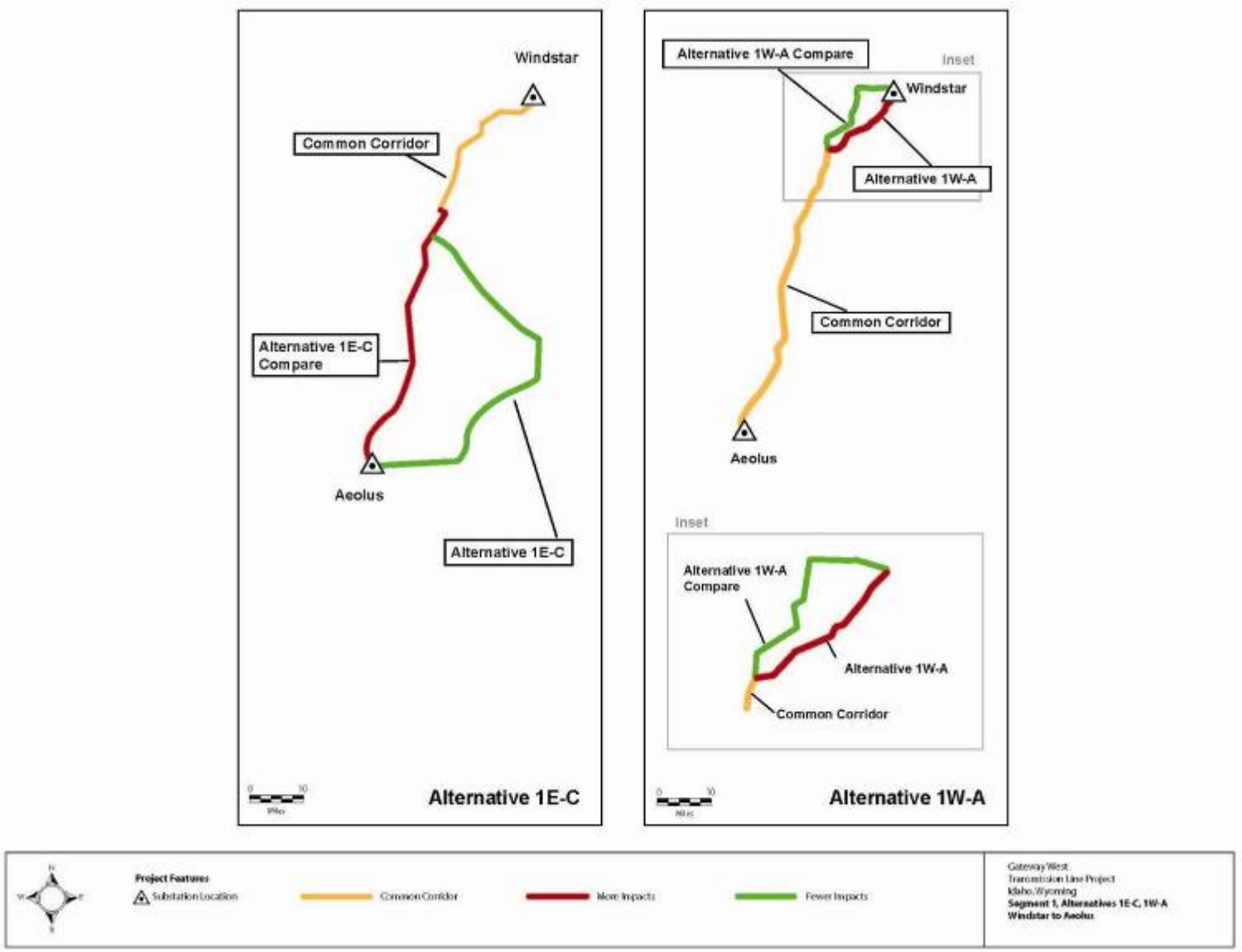

Figure 3.3-193. Segment 1, Alternatives 1E-C, 1W-A, Windstar to Aeolus

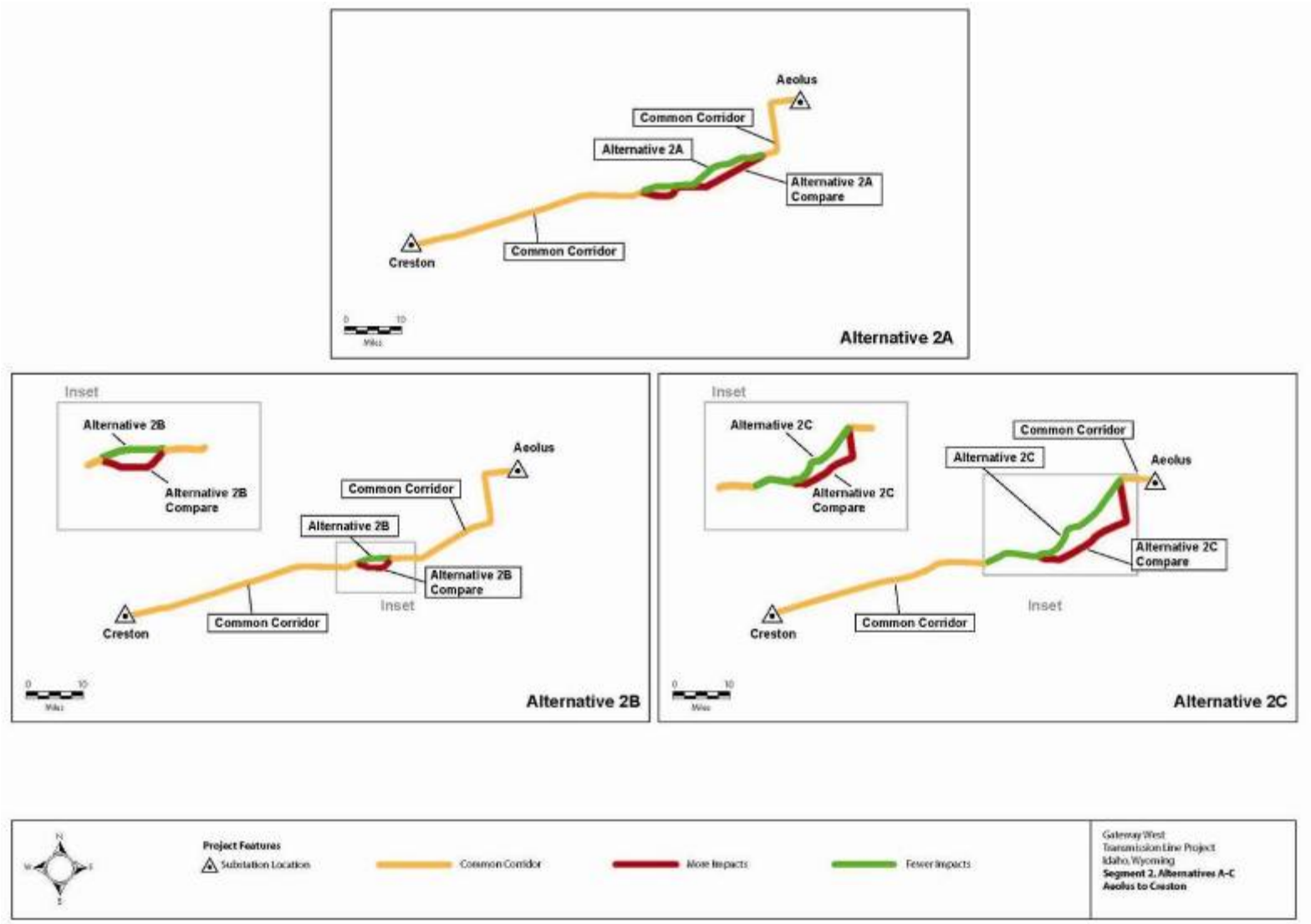

Figure 3.3-194. Segment 2, Alternatives A-C, Aeolus to Creston

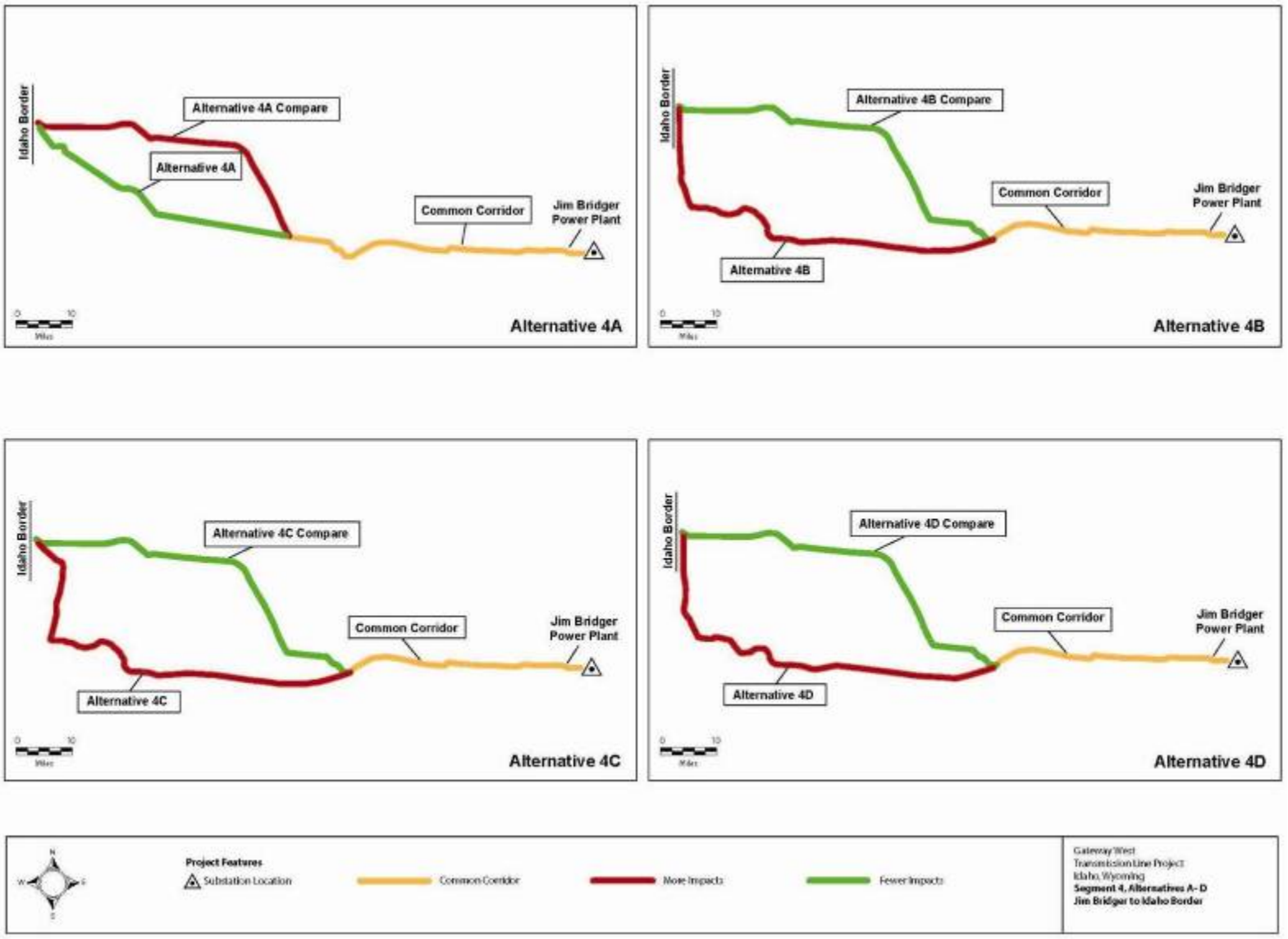

Figure 3.3-195. Segment 4, Alternatives A-D, Jim Bridger to Idaho Border

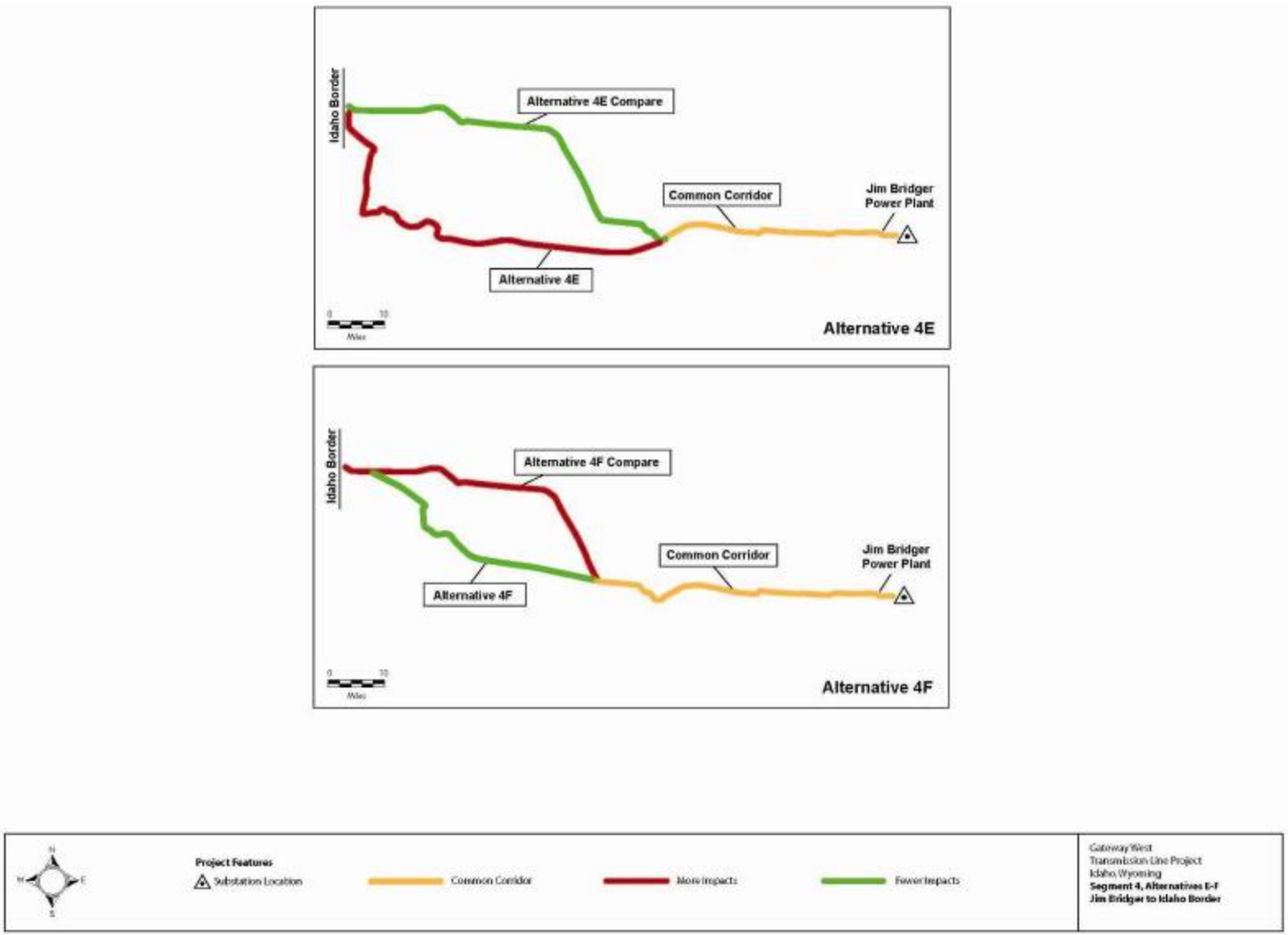

Figure 3.3-196. Segment 4, Alternatives E-F, Jim Bridger to Idaho Border

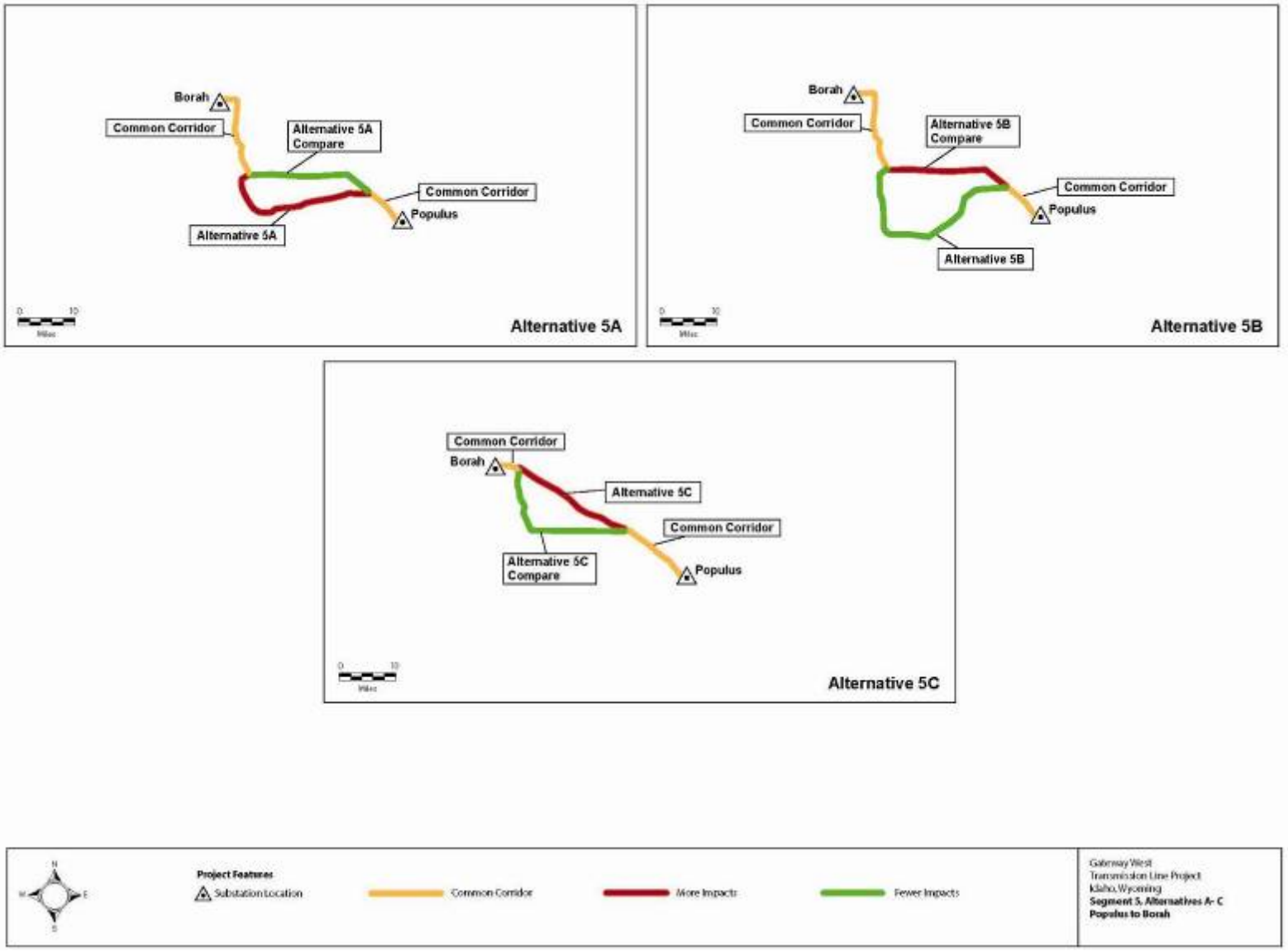

Figure 3.3-197. Segment 5, Alternatives A-C, Populus to Borah

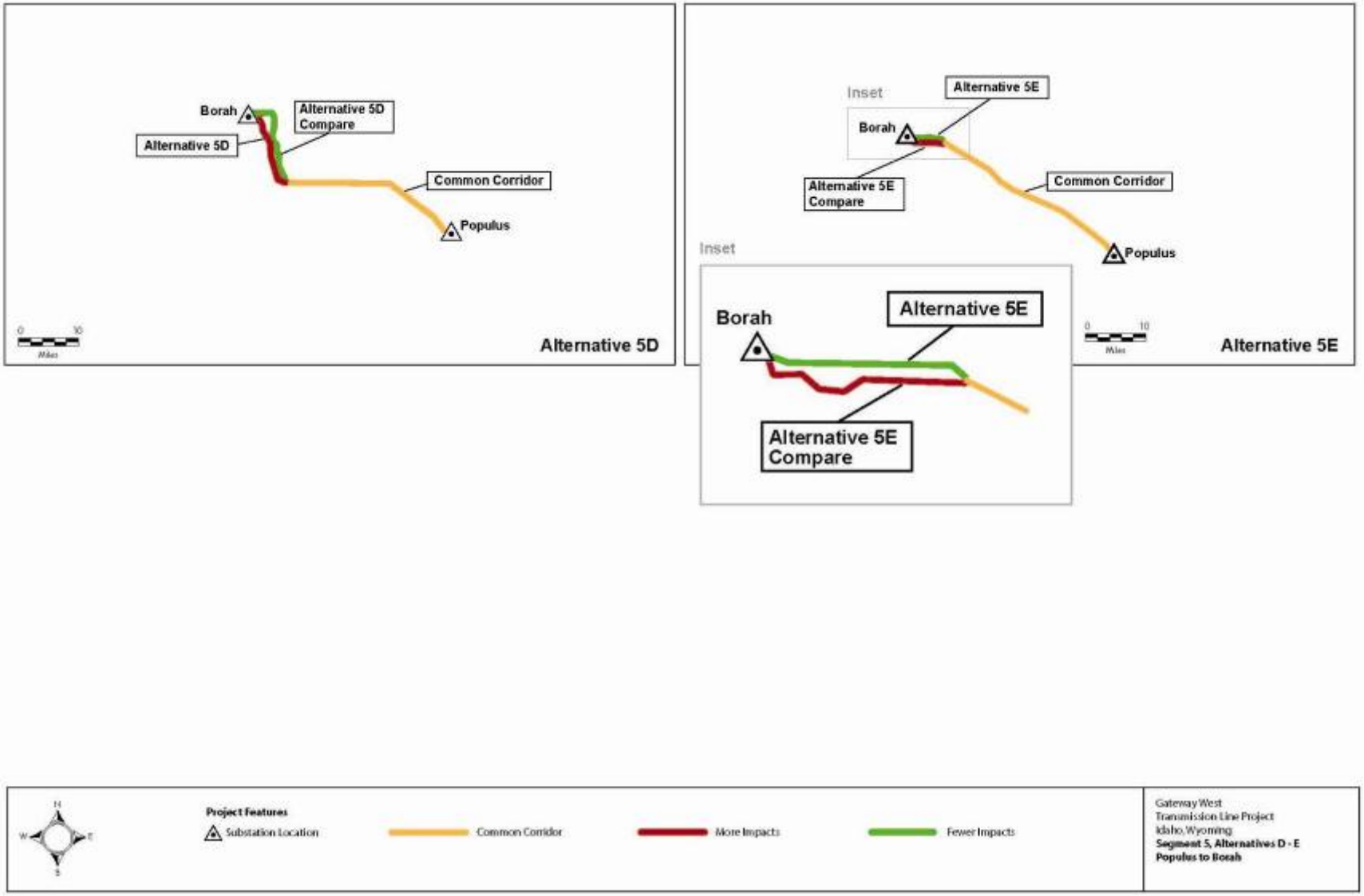

Figure 3.3-198. Segment 5, Alternatives D-E, Populus to Borah

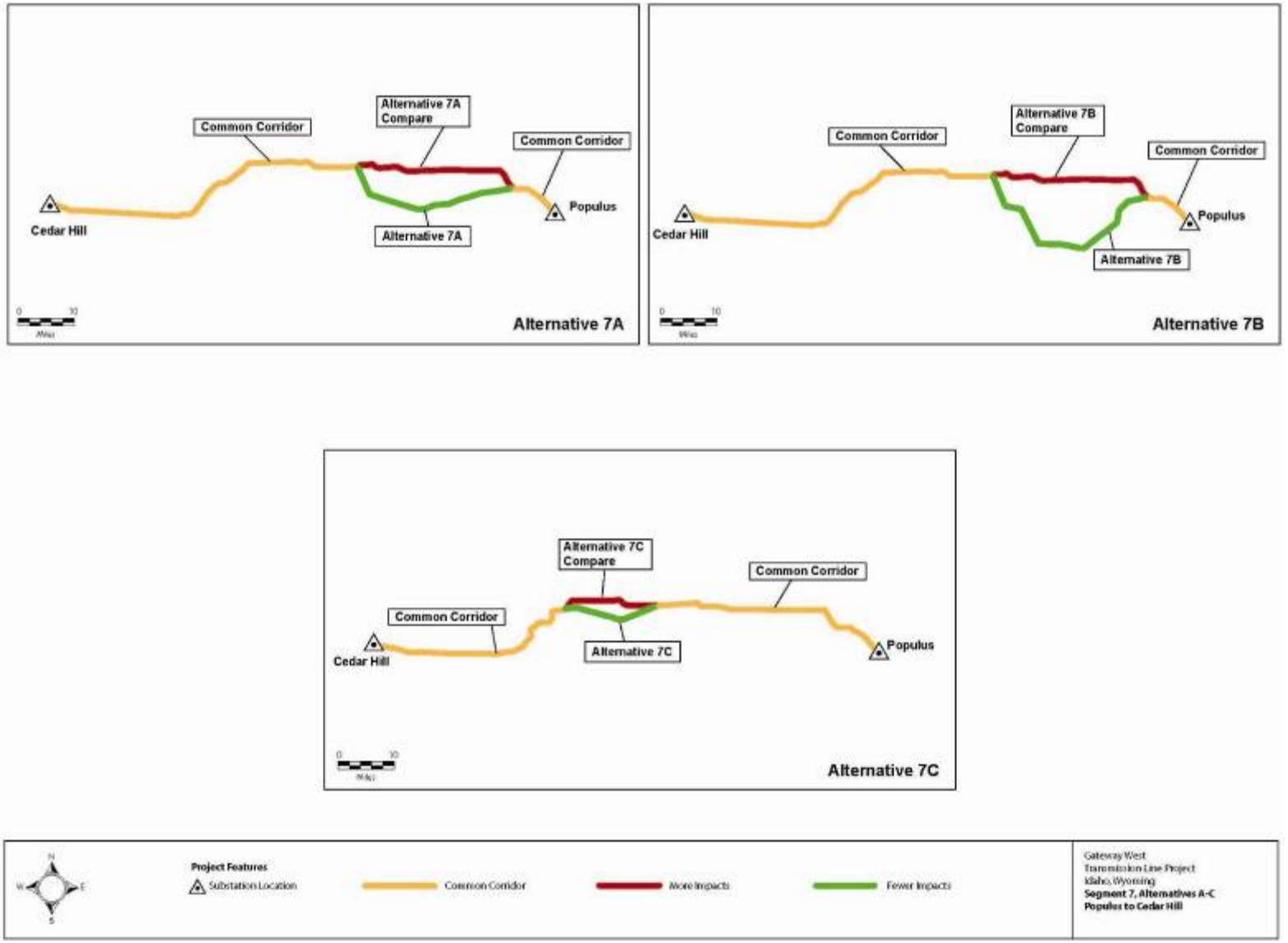

Figure 3.3-199. Segment 7, Alternatives A-C, Populus to Cedar Hill

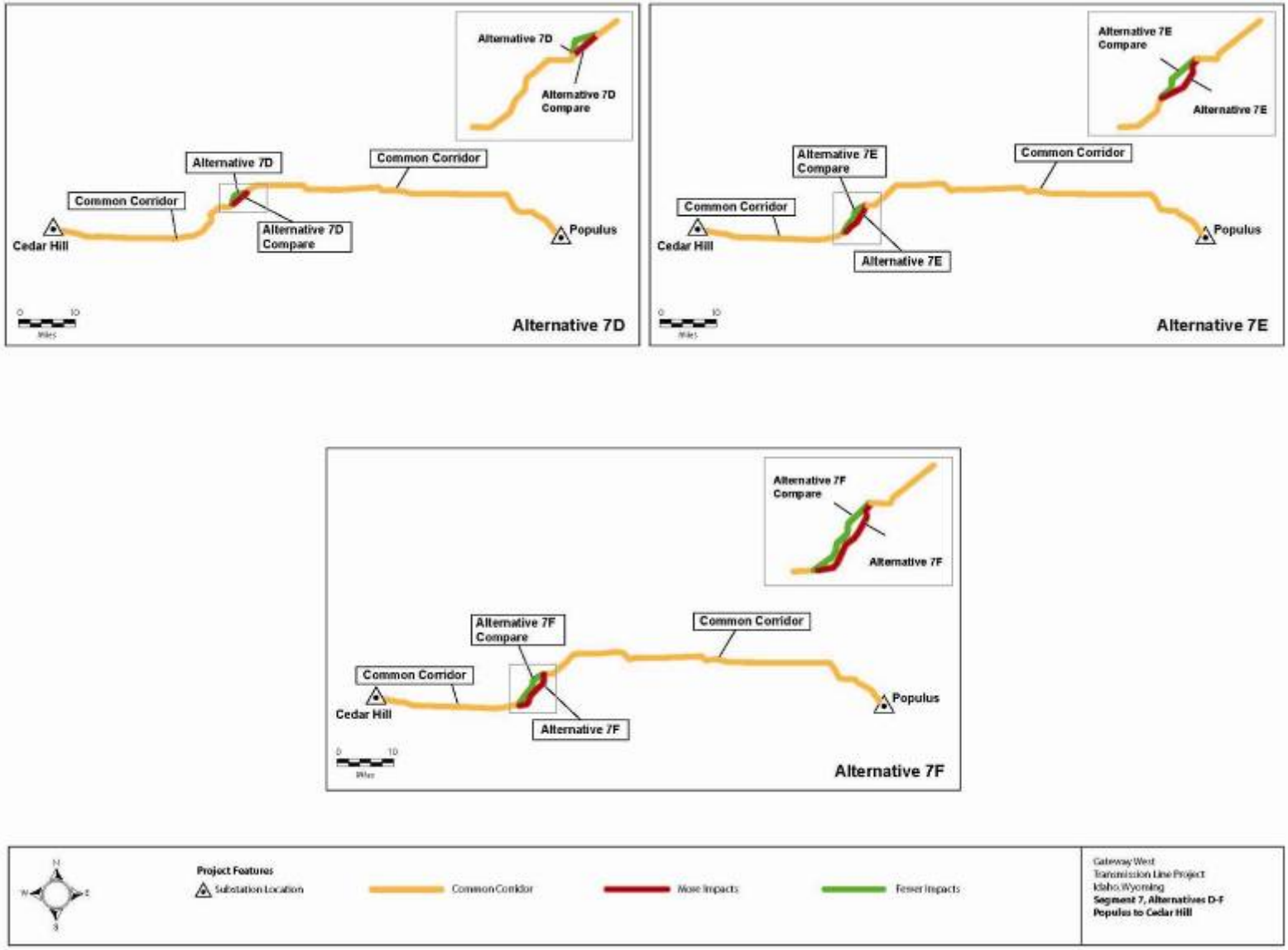

Figure 3.3-200. Segment 7, Alternatives D-F, Populus to Cedar Hill

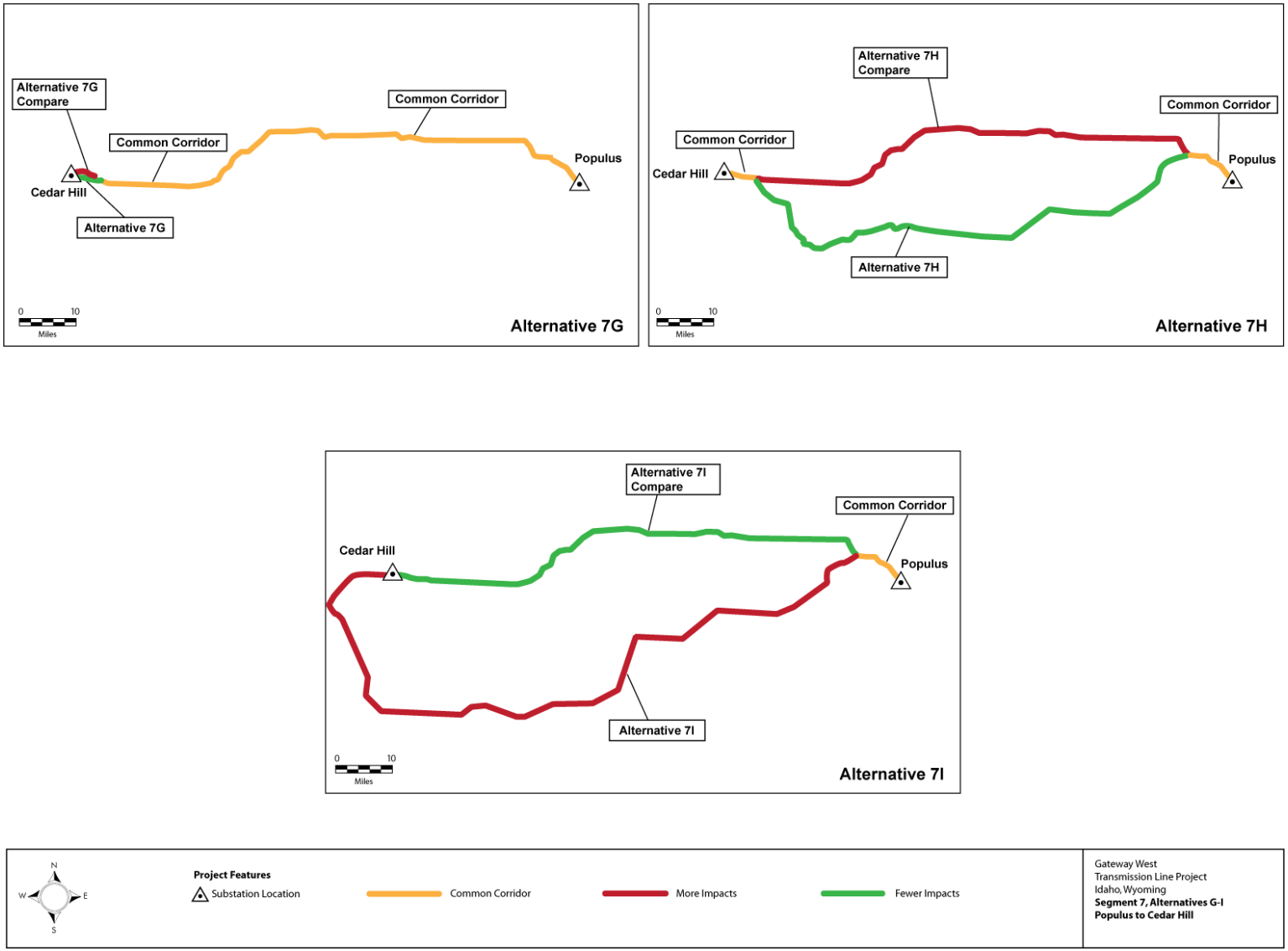

Figure 3.3-201. Segment 7, Alternatives G-I, Populus to Cedar Hill

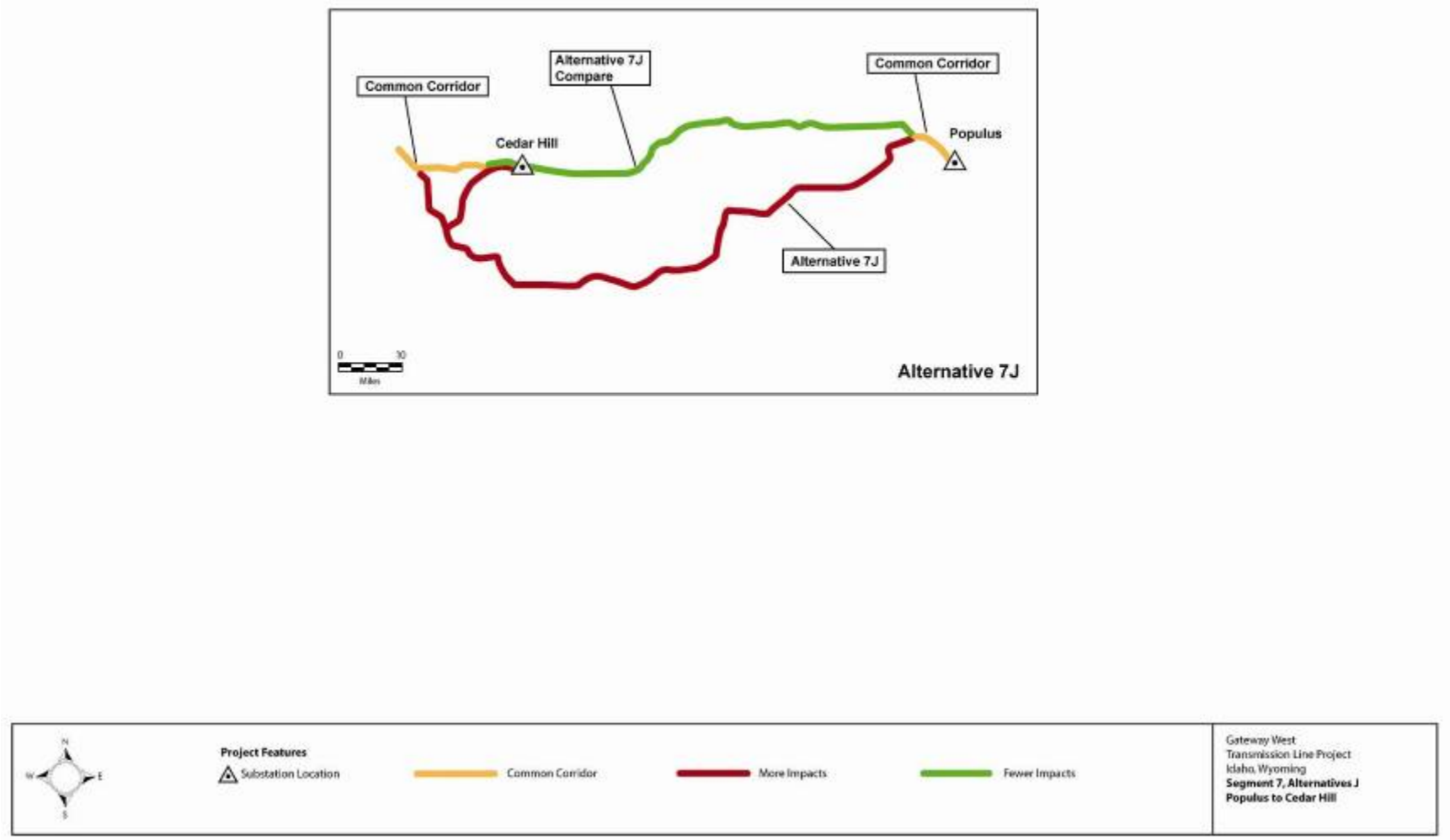

Figure 3.3–202. Segment 7, Alternative J, Populus to Cedar Hill

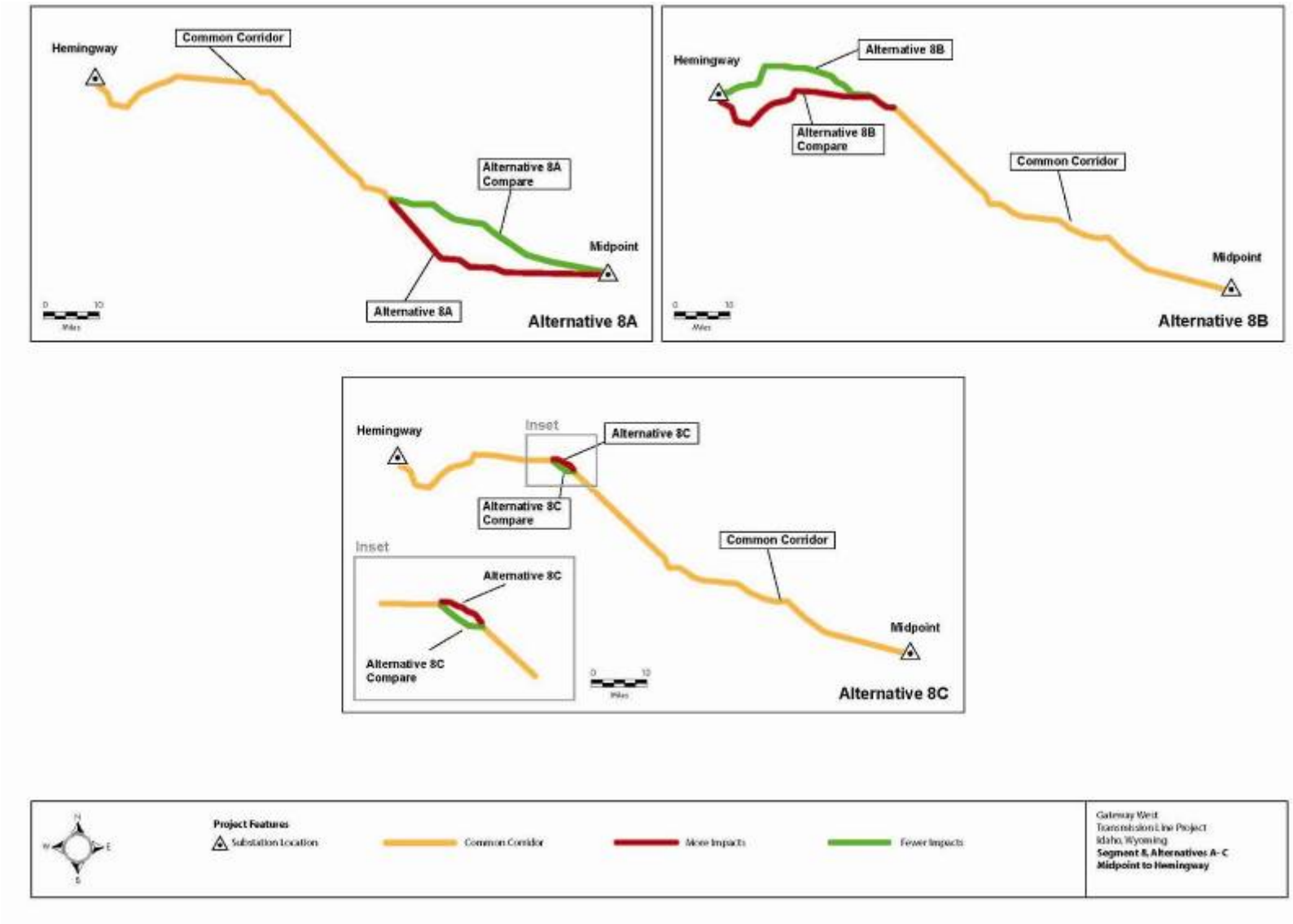

Figure 3.3-203. Segment 8, Alternatives A-C, Midpoint to Hemingway

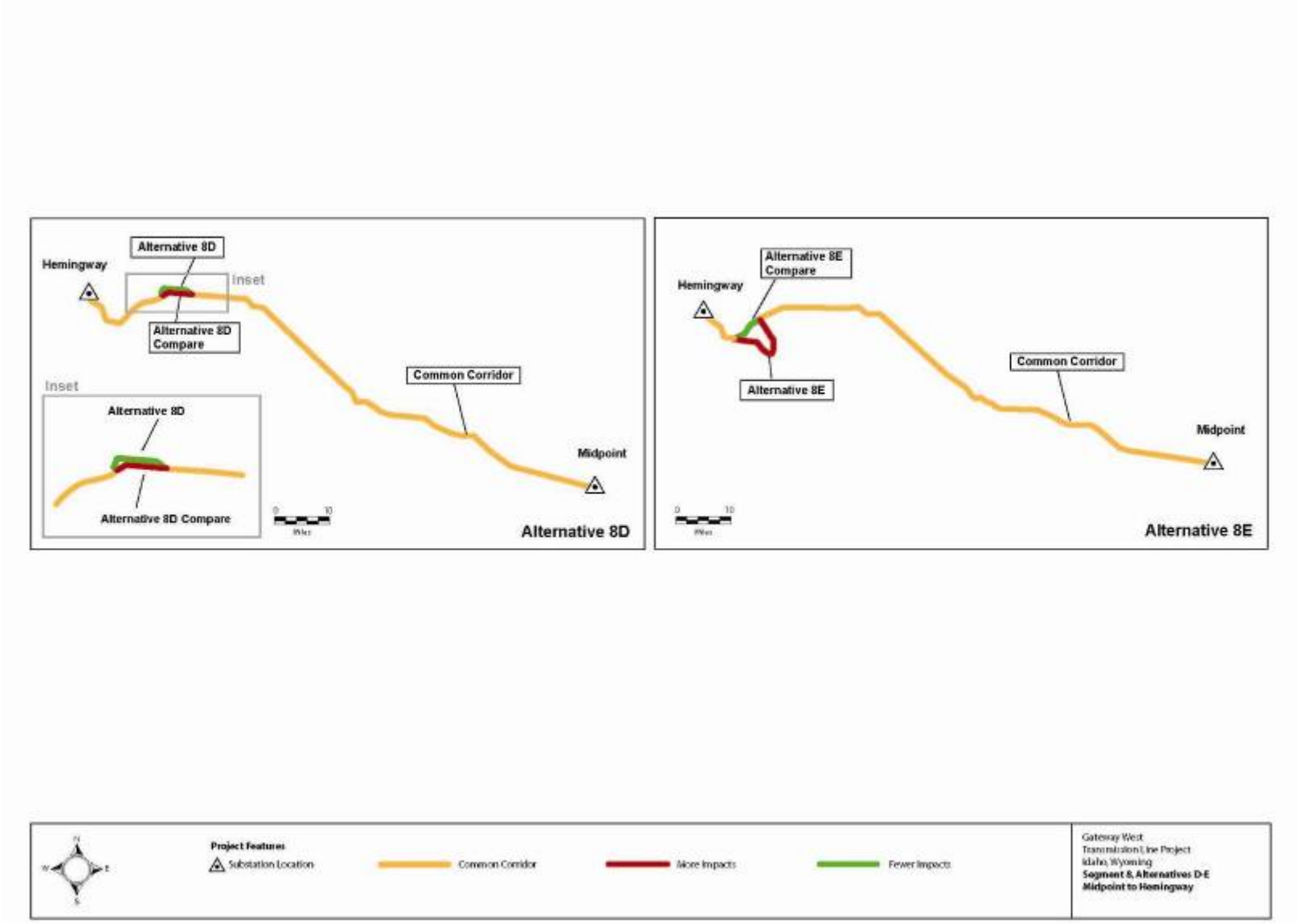

Figure 3.3-204. Segment 8, Alternatives D-E, Midpoint to Hemingway

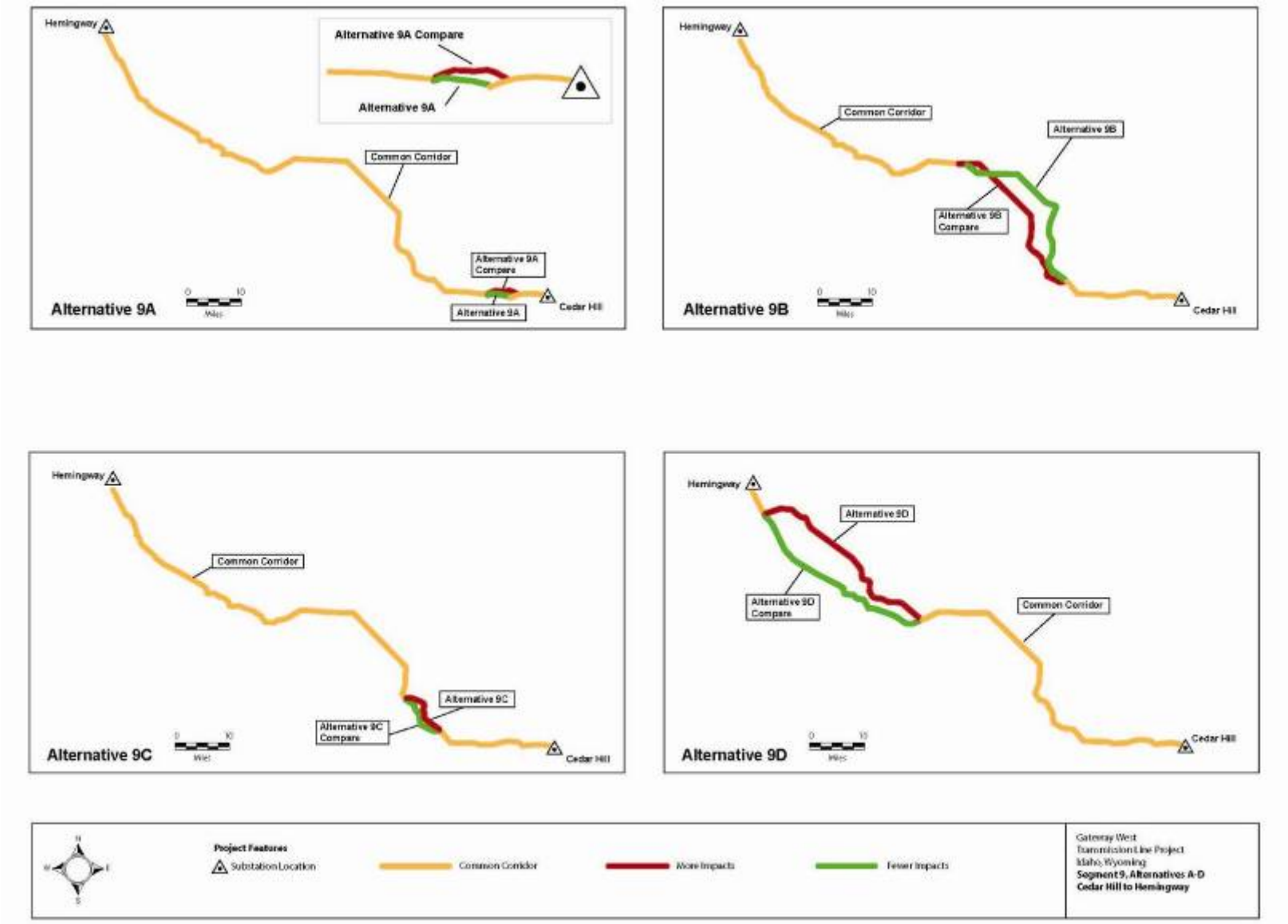

Figure 3.3-205. Segment 9, Alternatives A-D, Cedar Hill to Hemingway

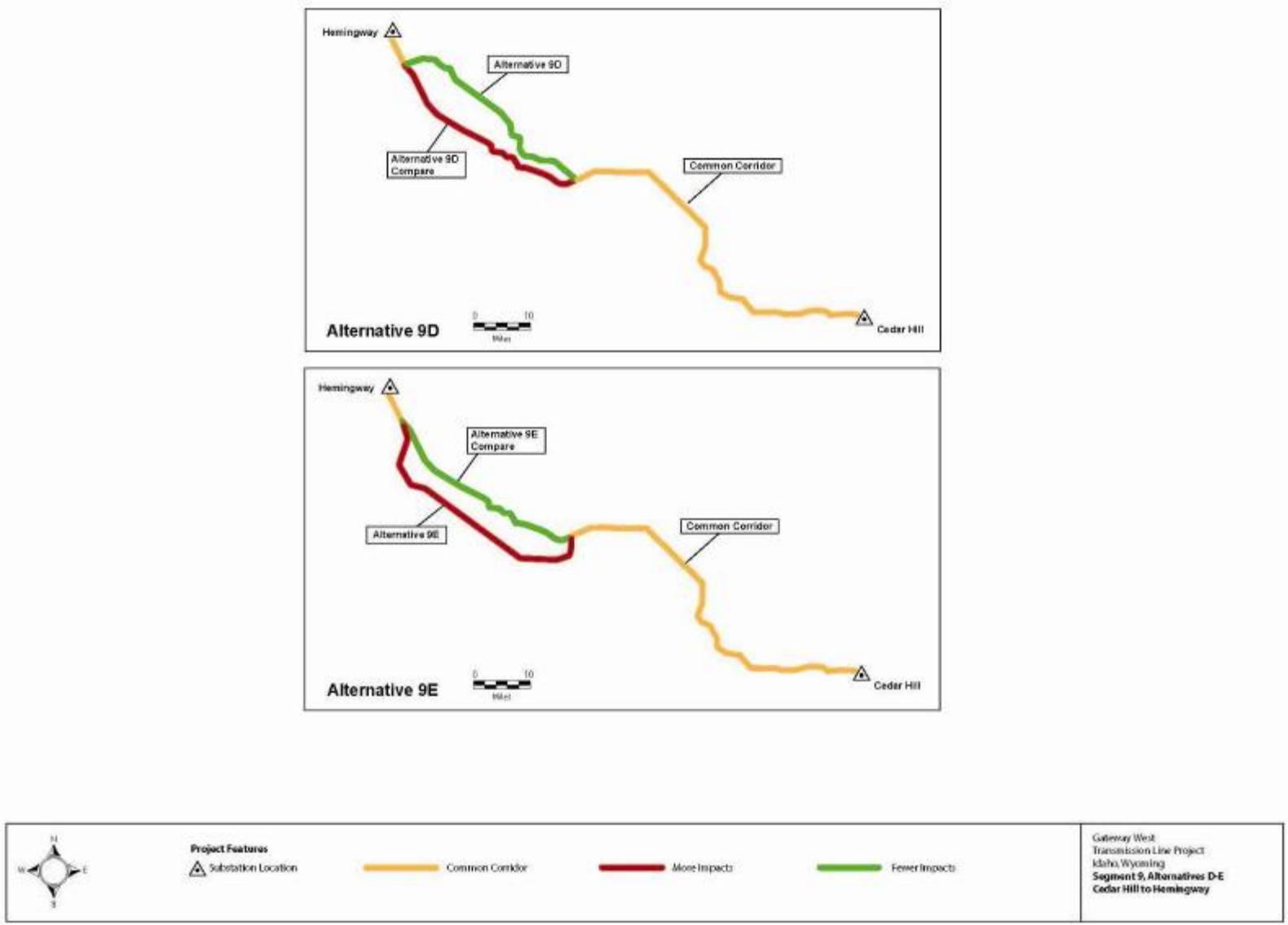

Figure 3.3-206. Segment 9, Alternatives D-E, Cedar Hill to Hemingway

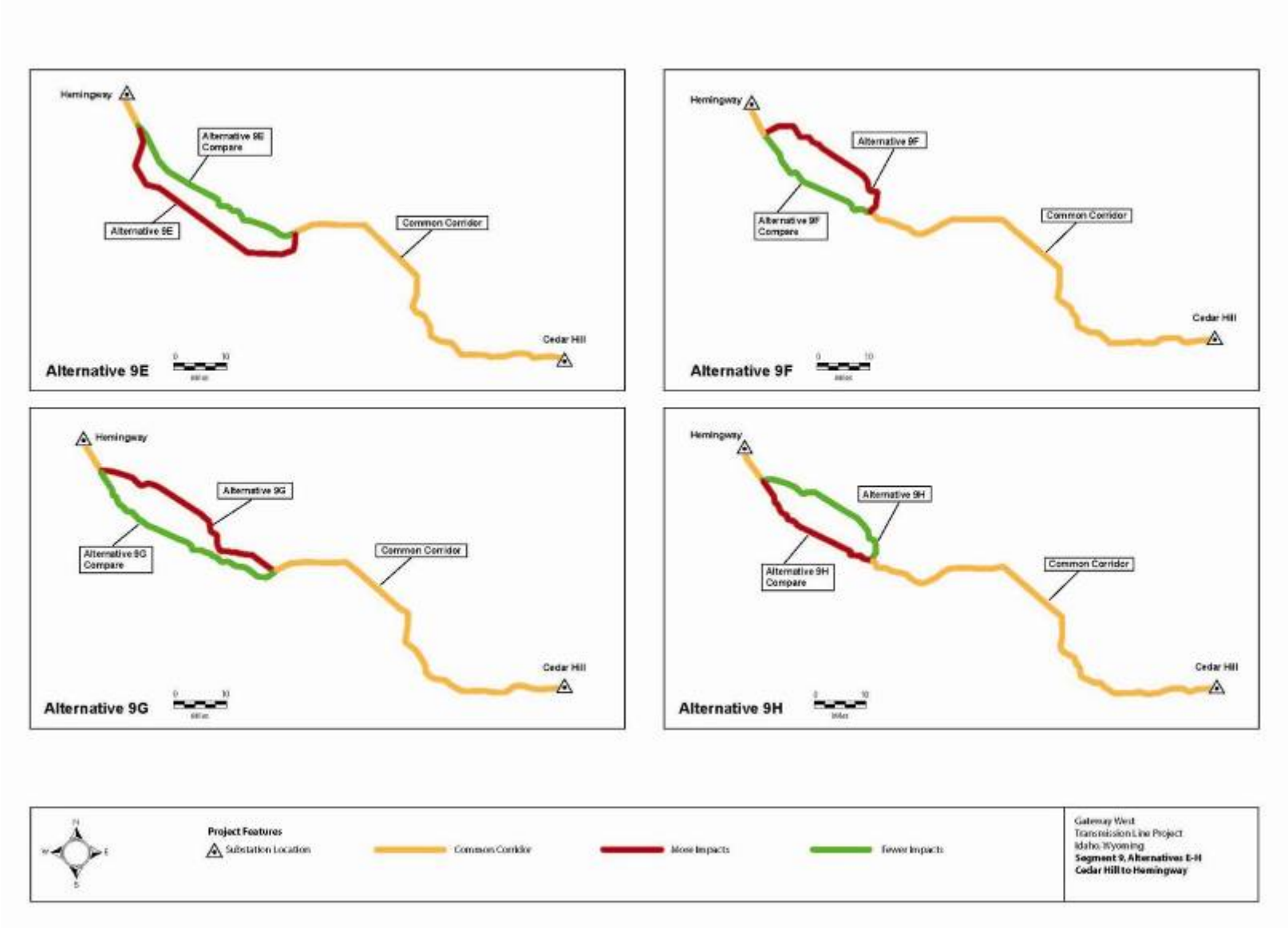

Figure 3.3-207. Segment 9, Alternatives E-H, Cedar Hill to Hemingway

3.3.3.5 Descriptions of Impacts by Route Segments

Segment 1E

The Proposed Route in Segment 1E is 100.6 miles long and has a low number of prehistoric (n=36) and historic (n=38) sites, for a ratio of approximately 0.7 sites per mile. Previous surveys in this area have been limited, which may partially account for the low site density. The comparison portion of the Proposed Route would have substantially fewer impacts than Alternative1E-B and slightly more impacts than Alternative 1E-A. The comparison portion of the Proposed Route would have more impacts than Alternative 1E-C.

Table 3.3-8 summarizes historic trail crossings in Segment 1E. This summary indicates that impacts to significant trail segments are equivalent on the Proposed Route, Alternative 1E-A, and Alternative 1E-B, even though 1E-B would cross only non-NHT segments. The Project would cross no historic trails on Alternative 1E-C.

Table 3.3-8. Historic Trail Crossings in Segment 1E

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 1E	2	–	2
Alternative 1E-A	2	–	2
Alternative 1E-B	–	2	2
Alternative 1E-C	–	–	–

The Proposed Route in Segment 1E and Alternatives 1E-A, 1E-B, and 1E-C would affect lands managed by the Casper FO, Rawlins FO, and Medicine Bow-Routt NFs.

The Casper RMP Decision 5019 emphasizes that the foreground/middleground of NHTs will be managed as VRM Class II until inventories are completed. The Proposed Route 1E and Alternative 1E-C cross areas classified as VRM Class II and would require a plan amendment to the Casper RMP if selected. The proposed amendment recommends that a single 630-acre VRM Class II parcel be reclassified to VRM Class III and that a one-time allowance be made to permit the Project to cross scattered smaller VRM Class II parcels within the Casper FO boundaries. Some of the effects described for KOP C89 may only apply if the proposed amendment were approved. KOP C89 may include views of land currently managed as VRM Class II and thus an amendment would be needed to build the transmission line. Effects on this KOP due to the routes crossing this land could only occur if the amendment were approved. The effects on NHTs and other cultural resources described for the remaining KOPs are not on BLM-managed lands and therefore would not be a result of the proposed amendments. Proposed amendment language can be found in Appendix F-1. Appendix G-1 further discusses impacts to visual resources.

In the Rawlins FO, the Proposed Route and Alternatives 1E-B would cross areas mapped as VRM Class II and Class III on Map 2-50 of the Rawlins RMP and are not in conformance with the plan. If the Proposed Route and Alternative 1E-B are selected, the land use plan must be amended. The proposed amendment recommends that the project be permitted a one-time allowance for the Proposed Route, and that for Alternative 1E-B, three VRM Class II parcels that would have higher visibility be

reclassified to VRM Class III and the Project be permitted a one-time allowance to cross the remaining AOI parcels. Some of the effects described for KOP 43 may only apply if the amendment is approved because some of the Project visibility from this KOP may occur on VRM Class II lands managed by the BLM that would require an amendment for the Project to be allowed. The proposed amendment language can be found in Appendix F-1. Appendix G-1 further discusses the impacts to visual resources for Segment 1-E and Alternative 1E-B.

The Proposed Route would cross lands managed by the Medicine Bow-Routt NFs. Standards 1, 2, and 3 and six guidelines in the Medicine Bow Forest Plan address the protection of heritage resources. The Project is consistent with these Medicine Bow Forest Plan standards and guidelines that apply to cultural resources and anticipated impacts would be addressed through mitigation measures (see Section 3.3.4).

Segment 1W (1W[a] and 1W[c])

The Proposed Route in Segment 1W(a) is 76.5 miles long and has a low number of prehistoric (n=33) and historic (n=36) sites, for a ratio of approximately 0.9 sites/mile. Previous surveys in this area have been limited, which may partially account for the low site density. Relative to the single alternative, the impacts of the Proposed Route are considered to be moderate.

Alternative 1W-A would have fewer impacts than the Proposed Route 1W(a).. The Proposed Route in Segment 1W(c) is 16.2 miles long and has a moderate number of prehistoric (n=44) and historic (n=25) sites, for a ratio of approximately 4.3 sites/mile. Despite the relatively high site density, previous surveys in this area have been limited.

Table 3.3-9 summarizes historic trail crossings in Segment 1W. As summarized in this table, impacts to significant trail segments would be greatest for the Proposed Route 1W(a), and less so with Alternative 1W-A and Proposed Route 1W(c).

Table 3.3-9. Historic Trail Crossings in Segment 1W

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 1W(a)	2	1	3
Alternative 1W-A	2	–	2
Proposed Route 1W(c)	1	–	1

The Proposed Routes in Segments 1W(a) and 1W(c) and Alternative 1W-A would affect lands managed by the Casper FO and Medicine Bow-Routt NFs.

The Casper RMP Decision 5019 emphasizes that the foreground/middleground of NHTs will be managed as VRM Class II until inventories are completed. The Proposed Routes 1W(a) and 1W(c) would cross areas classified as VRM Class II and would require a plan amendment to the Casper RMP if selected. The proposed amendment recommends changing a 630-acre VRM Class II parcel, just north of the Medicine Bow-Routt NFs, to VRM Class III and permitting a one-time allowance for the scattered smaller VRM Class II parcels that would be crossed by the Project. See Appendix F-1

for proposed amendment language and impacts. See Appendix G-1 for further discussion of visual impacts in this area.

The Proposed Routes would cross lands managed by the Medicine Bow-Routt NFs. Standards 1, 2, and 3 and six guidelines in the Medicine Bow Forest Plan address the protection of heritage resources. The Project is consistent with these Medicine Bow Forest Plan standards and guidelines and anticipated impacts would be addressed through mitigation measures (see Section 3.3.4).

Segment 2

The Proposed Route in Segment 2 is 96.7 miles long and has a high number of prehistoric (n=357) and historic (n=109) sites, for a ratio of approximately 4.8 sites/mile. Previous surveys in this area indicate that the high site density is due to the abundance of potable water, edible plants and animals, shelter, and lithic raw materials. All three Alternatives – 2A, 2B, and 2C - would have fewer impacts than the respective comparison portions of the Proposed Route.

Table 3.3-10 summarizes historic trail crossings in Segment 2. This summary indicates that impacts to significant trail segments would be greatest for the Proposed Route, followed by Alternatives 2A and 2B. Historic trails would not be impacted by Alternative 2C.

Table 3.3-10. Historic Trail Crossings in Segment 2

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 2	–	9	9
Alternative 2A	–	6	6
Alternative 2B	–	3	3
Alternative 2C	–	–	–

The Proposed Route 2 would affect lands managed by the Rawlins FO.

The Proposed Route would cross areas mapped as VRM Class III on Map 2-50 of the Rawlins RMP where it would not be in conformance with the land use plan. If the Proposed Route is selected, the land use plan must be amended. The proposed amendment recommends permitting a one-time allowance for the Project to cross a parcel of VRM Class III land within the North Platte SRMA. No cultural KOPs were assessed for this area and thus the amendment would not affect the KOP effects analysis. See Appendix F-1 for the proposed amendment language and Appendix G-2 for further discussion of visual impacts in this area. The alternative routes would conform to the plan.

Segment 3

The Proposed Route in Segment 3 is 46.7 miles long and has a high number of prehistoric (n=293) and historic (n=49) sites, for a ratio of approximately 7.3 sites/mile. Previous surveys in this area indicate that the high site density is due to the abundance of potable water, edible plants and animals, shelter, and lithic raw materials. The impacts of the Proposed Route are considered to be high.

Table 3.3-11 summarizes historic trail crossings in Segment 3. The Proposed Route would cross seven non-NHT segments.

The Proposed Route would affect lands managed by the Green River FO. The Proposed Route would be located near sage-grouse leks and would require a plan amendment to the Green River RMP. The Proposed Route would be consistent with BLM VRM Class IV objectives. KOP 53 is located approximately 3 miles away from a sage-grouse lek and describes effects for parts of the route that are near the lek. Effects of the route on this KOP would likely be dependent upon approval of an amendment to allow the route through this area.

Table 3.3-11. Historic Trail Crossings in Segment 3

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 3	–	7	7

Segment 4

The Proposed Route in Segment 4 is 203 miles long and has a large number of prehistoric (n=574) and historic (n=82) sites, for a ratio of approximately 3.2 sites/mile. Similar to Segment 3, previous surveys indicate that the moderate site density in this area is due to the abundance of potable water, edible plants and animals, shelter, and lithic raw materials. Alternatives 4A and 4F would have fewer impacts than the comparison portions of the Proposed Route. In contrast, Alternatives 4B, 4C, 4D, and 4E would have more impacts than the comparison portions of the Proposed Route..

Table 3.3-12 summarizes historic trail crossings in Segment 4. Impacts to significant historic trail segments would be greatest for the Proposed Route, followed by Alternatives 4A and 4F. Alternatives 4B, 4C, 4D, and 4E would cross fewer historic trail segments.

Table 3.3-12. Historic Trail Crossings in Segment 4

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 4	11	5	16
Alternative 4A	9	2	11
Alternative 4B	6	–	6
Alternative 4C	7	–	7
Alternative 4D	6	–	6
Alternative 4E	7	–	7
Alternative 4F	8	2	10

The Proposed Route and Alternatives 4B, 4C, 4D, and 4E would affect lands managed by the Rock Springs FO and the Kemmerer FO in Wyoming, the Pocatello FO in Idaho, and the Caribou-Targhee NF in Idaho. Alternatives 4A and 4F would affect lands in the Kemmerer FO.

The Green River RMP guides actions that occur on lands managed by the Rock Springs FO. The RMP restricts impacts to visual resources, including historic trails, in the vicinity of the proposed Project. Management actions on lands with a Class II VRM

classification must be designed to blend into and retain the existing character of the natural landscape. The Proposed Route would not be in conformance with the Green River RMP visual requirements and would require a land use plan amendment to permit a one-time allowance for the Project to cross a parcel of VRM Class II land near the Green River without changing the VRM classification (see Appendix G-2 for further discussion on visual impacts in this area). No cultural KOPs occur near this VRM Class II area. The Proposed Route and Alternatives 4B, 4C, 4D, and 4E would also require a land use plan amendment of the Green River RMP for construction activities occurring near sage-grouse leks and raptor nests. Effects described for KOP C37 may only occur if an amendment were approved because the route analyzed comes near the 0.25 mile buffer requirement for sage-grouse leks. Effects described for KOPs C53, C15 and C12 would likely only occur if an amendment allowing disturbance within 0.5 mile were approved. Effects described for KOPs C40, C17, C16, and C18 would apply to a portion of the route that would require an amendment to the raptor buffer requirement because at either end of this section, there would be disturbance within the nesting buffer area. See Appendix F-1 for proposed amendment language and discussion of effects.

The Kemmerer RMP guides actions that occur on lands managed by the Kemmerer FO. The Project, as currently designed, is inconsistent with the current direction in the Kemmerer RMP, as it applies to NHTs and other cultural resources. In particular, surface-disturbing activities are prohibited within 0.25 mile on either side of Class 1 NHT trail segments and within 0.25-mile radius of gravesites and landmarks; within 500 feet of Class 2 NHT trail segments and 500-foot radius of gravesites and landmarks; and within 100 feet of Class 3 NHT trail segments and 100-foot radius of gravesites and landmarks. Indicative maps show that new access roads would occur within 0.25-mile of four Class 1 locations on Alternative 4A and one location on Alternative 4F. The viewsheds of NHT segments must be managed to retain the existing character of the landscape so developments do not dominate the visible area and detract from the feeling or sense of the historic time period of the trail setting. Table 3.3-13 depicts the distribution of NHT trail crossings by trail class for the Kemmerer FO. Alternative 4A, followed by Alternative 4F and the Proposed Route, would affect mostly higher quality (Class 1 and 2) trail segments. Alternatives 4B, 4C, 4D, and 4E would affect, however, only those trail segments for which the historic setting has been compromised (Classes 3 and 4). The Proposed Route and six alternatives are inconsistent with the Kemmerer RMP and would require a land use plan amendment.

Table 3.3-13. Crossing by NHT Trail Classes in the Kemmerer FO

	NHT Class			
Segment/Alternative	**Class 1**	**Class 2**	**Class 3**	**Class 4**
Proposed Route 4	1	2	–	1
Alternative 4A	2	3	–	1
Alternative 4B	–	–	3	1
Alternative 4C	–	–	2	1
Alternative 4D	–	–	3	1
Alternative 4E	–	–	2	1
Alternative 4F	1	3	–	1

Proposed amendments to the Kemmerer RMP include amending RMP Decision 5010 to permit a one-time allowance for the Gateway West transmission line to cross the Dempsey Hockaday NHT (Proposed Route), or Sublette NHT (Alternatives 4A and 4F), while requiring mitigation to include crossing trails at, or close to, right angles, placing towers as far from trails as feasible or micrositing to reduce visibility, and not permitting disturbance to trail traces. Effects described for KOPs 56 and 57 would only occur if an amendment permitting the Proposed Route to cross the Dempsy-Hockaday NHT were approved. Effects described for KOPs C125, C124 and possibly C10 would only occur if an amendment permitting Alternative 4F to cross the Sublett-Cuttoff NHT was approved. Effects described for KOPs C29, C31, and C126 would only occur if an amendment permitting Alternative 4A to cross the Sublett-Cuttoff NHT was approved. Effects described for KOPs C9, C8, C7, C28, C30, and C110 are described for routes that would require the amendments permitting the trail crossings described.

Utility corridors are prohibited across NHTs, according to RMP Decision 6008, so an amendment is required for any of the routes to be approved. Additionally an amendment would be needed to Decision 6051 regarding VRM designations and consideration of views connected with NHTs. The Decision would be amended to permit a one-time allowance for the Proposed Route and Alternatives 4A and 4F and portions of 4C and 4E, while reclassifying VRM Class II areas crossed by Alternatives 4B, 4C, and portions of 4D and 4E. Effects described for KOPs C121, C56, C57, C11, C41, C24, C125, C10, C30, C31, C29, C126, C9, C8, C7, C28, and C110 would only occur if amendments permitting a one-time allowance as well as to reclassify VRM Class II areas were approved. Additionally, effects described in KOPs C33 and C32 are for land that is not BLM-managed or NFS land; however, this portion of the route would not be permitted unless an amendment for the adjacent segments that cross VRM Class II land is approved. Mitigation measures are discussed in detail in Appendix F-1, Section 3.4.3. An amendment would also be needed to Decision 6053 if the Proposed Route is selected, permitting the route within 3 miles of designated NRHP sites with mitigation as determined by the Section 106 process. Effects described in KOP 121 would only occur if the amendment were approved. An amendment to Decision 6054 permitting a one-time allowance for the Project to cross within 3 miles of Class 1 and Class 2 NHT segments with micrositing and mitigation measures would be needed if Alternative 4A or 4F is selected. Effects described in KOPs C56, C57, C124, C125, C126, C29 C31, and C10 would only occur if the amendment were approved. Decision 7014 would need to be amended if Alternative 4A 4C, or 4E is selected, permitting a one-time allowance for the route to cross the Rock Creek/Tunp SMA and requiring micrositing and mitigation measures to minimize visual impacts. Effects described for KOP C31 would only occur if the amendment were approved.

If either Alternative 4B or 4D is approved, the Kemmerer FO recommends designating a corridor for future utility placement regarding crossing of the NHTs. A utility corridor, 1 mile in width centered on the transmission line should be designated for future utility placement if either Alternative 4B or 4D is approved. Effects described for KOPs C33 and C32 would apply for this amendment.

The Proposed Route would also cross lands managed by the Caribou-Targhee NF. The Project is consistent with the Caribou Forest Plan standards and guidelines for heritage resources and anticipated impacts would be addressed through mitigation measures (see Section 3.3.4).

Segment 5

The Proposed Route in Segment 5 is 54.6 miles long and has a low number of prehistoric (n=21) and historic (n=8) sites, for a ratio of approximately 0.5 site/mile. Previous surveys in this area have been limited, which may partially account for the low site density. Intensive agricultural activity in this area may also have destroyed many sites. Relative to the five Route Alternatives, the impacts of the Proposed Route are considered to be low. The comparison portions of the Proposed Route would have fewer impacts than alternative routes 5A, 5B, 5C, and 5D, but Alternative 5E would have more impacts than the comparison portion of the Proposed Route.

Table 3.3-14 summarizes historic trail crossings in Segment 5. Impacts to significant trail segments would be greatest for the Proposed Route, followed by Alternatives 5D and 5E and then by Alternatives 5A and 5B. No historic trails would cross Alternative 5C.

Table 3.3-14. Historic Trail Crossings in Segment 5

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 5	2	1	3
Alternative 5A	1	–	1
Alternative 5B	1	–	1
Alternative 5C	–	–	–
Alternative 5D	1	1	2
Alternative 5E	1	1	2

The Proposed Route and Alternatives 5A, 5B, 5C, 5D, and 5E would affect lands managed by the Pocatello FO. Actions that occur on these lands are guided by the Malad MFP. Alternative 5C would also cross the southern end of the Fort Hall Indian Reservation in southeastern Idaho.

The Malad MFP provides guidance direction for managing land according to existing VRM Class restrictions, maintaining a degree of management that minimizes changes in the visual dominance elements. The Proposed Route would cross VRM Class II and III lands where it would not be consistent with the land use plan, thus requiring an amendment. Where the Proposed Route would cross the Deep Creek Mountains, an amendment permitting one-time allowance without changing the VRM Classifications would be needed. No cultural KOPs were analyzed for this area. An additional amendment was considered for a crossing of a parcel of VRM Class II area near the Snake River. The crossing would be across open water where the VRM Class II area occurs; therefore, the Pocatello FO determined an amendment would not be needed. See Appendix F-1 and Appendix G-1 for proposed amendment language and visual analyses.

The Malad MFP emphasizes that a protective corridor 330 feet wide should be established along visible segments of the Hudspeth Cutoff Trail. Given this restriction, the Proposed Route and Route Alternatives are inconsistent with the Malad MFP and would require an amendment to the land use plan. Effects described for KOPs C24 and C25 would only occur if the amendment were approved. The Project would also require an amendment to the Malad RMP to allow utilities located outside of existing corridors for the Proposed Route and Alternatives 5A and 5B. The Pocatello FO is currently working on a new RMP that would also include the area currently managed under the Malad MFP. This new RMP does not carry the ROW restriction forward. Effects described for all KOPs within the area would be dependent upon the amendment being approved or approval of the new Pocatello RMP, which does not have the ROW restriction. See Appendix F-1 for proposed amendment language.

The Shoshone-Bannock Tribes IRMP encourages examination of resource issues in an interdisciplinary manner before project implementation. If Alternative 5C were chosen, the IRMP would be followed within Reservation boundaries.

Segment 6

Segment 6 is an existing transmission line, 85.3 miles long, linking the Borah and Midpoint Substations. It is now operated at 345 kV but would be changed to operate at 500 kV. This segment has no Route Alternatives. Existing support structures would be used and impacts would be limited to within approximately one-quarter mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. No prehistoric or historic sites have been documented along this segment. New impacts are minimal and potential adverse impacts are unlikely.

Segment 6 crosses no historic trails and does not contain any Areas of Inconsistency. As such, amendments to local land use plans are not required.

Segment 7

The Proposed Route in Segment 7 is 118.1 miles long and has a very low number of prehistoric (n=17) and historic (n=14) sites, for a ratio of approximately 0.3 site/mile. Surveys in this area are generally limited, which explains the relatively low site density for most of the alternatives. Intensive agricultural activity in this area may also have destroyed many sites. Alternatives 7A, 7B, 7C, 7D, 7G, and 7H would have fewer impacts than their comparison portions of the Proposed Route. The comparison portions of the Proposed Route would have fewer impacts in Alternatives 7E, 7F, 7I, and 7J. The alignment for Alternatives 7I and 7J would pass along the southern edge of the proposed Tunnel Hill Archaeological District, in the southwestern corner of the Cassia Division of the Minidoka Ranger District in the Sawtooth NF, which accounts for the relatively higher site density in those routes. The archaeological district includes 54 sites, nearly all of which are lithic scatters that include flakes and chipped stone tools. Based on projectile point styles, these sites range in age from Paleoindian, through Archaic, to Late Prehistoric. Several historic sites, many of them rock cairns, are included in the district. The Proposed Route for Segment 7 avoids the Tunnel Hill Archaeological District.

Table 3.3-15 summarizes historic trail crossings in Segment 7. Impacts to significant trail segments would be greatest for Alternative 7I, followed by Alternative 7H, Alternative 7C, and the Proposed Route. The Project would cross only one historic trail in Alternatives 7A, 7B, and 7D, and cross no trails in Alternatives 7E, 7F, and 7G.

Table 3.3-15. Historic Trail Crossings in Segment 7.

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 7	2	1	3
Alternative 7A	1	–	1
Alternative 7B	1	–	1
Alternative 7C	3	–	3
Alternative 7D	1	–	1
Alternative 7E	–	–	–
Alternative 7F	–	–	–
Alternative 7G	–	–	–
Alternative 7H	3	3	6
Alternative 7I	9	–	9
Alternative 7J	9	–	9

The Proposed Route and Route Alternatives would affect lands managed by the Pocatello FO (Pocatello RMP and Malad MFP); the Burley FO (Cassia RMP and Twin Falls MFP), Shoshone FO (Bennett Hills/Timmerman Hills MFP), Fort Hall Indian Reservation, and Sawtooth NF (Sawtooth Forest Plan) in Idaho; and the Wells FO in Nevada.

The Proposed Route and Alternatives 7A, 7B, 7C, 7H, and 7I would cross areas covered by the Malad MFP. The Malad MFP emphasizes that a protective corridor 330 feet wide should be established along visible segments of the Hudspeth Cutoff Trail. The Proposed Route and Alternative 7A are located within the 300-foot zone of the Hudspeth Cutoff Trail. Effects described for KOPs C24 and C25 would only occur if an amendment permitting the route were approved. VRM restrictions in the Malad MFP would impact Proposed Route and Alternative 7A. No cultural KOP analyses were conducted for these portions of the routes. The Malad MFP also restricts major utilities to new corridors, which would affect the Proposed Route and Alternatives 7A and 7B. Effects described for KOPs C22, C23,C24, and C25 would only apply if an amendment permitting the project were approved Given these restrictions, the Proposed Route and two Route Alternatives are inconsistent with the Malad MFP and would require amendments to the land use plan, permitting the Project one-time allowances to these management directions. See Appendix F-1 for amendment language and Appendix G-1 for the visual analyses.

The Proposed Route and Alternatives 7C, 7D, 7E, 7F, 7G, 7H, 7I, and 7J would cross multiple management areas covered by the Cassia RMP. The Proposed Route would cross parcels managed as VRM Class II and III, which will require an amendment to reclassify these areas to VRM Class III if any of these routes are selected and permit the crossing of the VRM Class III parcels without changing their classification. Effects described for KOPs C67 and C80 would only apply if these amendments were approved. The Cassia RMP also limits new ROWs to existing facilities and localities

within MA 11, which would impact the Proposed Route and require an amendment to the Cassia RMP, permitting a one-time allowance for the Gateway West transmission line if the Proposed Route is selected. Effects described for KOPs C63 and C64 would only apply if an amendment were approved. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analyses.

The Proposed Route and Alternatives 7I and 7J would cross areas covered by the Twin Falls MFP. The Twin Falls MFP restricts major power transmission lines to existing corridors. The Proposed Route and Alternatives 7I and 7J are inconsistent with the Twin Falls MFP and would require a land use plan amendment, permitting a one-time allowance for the Project to cross this area outside of these corridors, if selected. Some of the effects described for KOP C101 would only apply if an amendment allowing the Project outside of the established corridors were approved. In addition, Alternative 7I/7J would cross a small parcel of VRM Class II near Rock Creek. An amendment to reclassify the area adjacent to the powerline would be needed if this route is selected. Some of the effects described for KOP C81 would only apply if the amendment were approved. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analyses.

Alternatives 7I and 7J would cross areas covered by the Wells RMP. The alternative would not be consistent with the Wells RMP, which restricts new transmission lines to existing corridors and an amendment to permit a one-time allowance for the Project would be needed. In addition, the route crosses a VRM Class II parcel, which would be inconsistent with the visual management guidelines of the Wells RMP. An amendment to permit a one-time allowance without changing the VRM Classification would be needed if Alternative 7I or 7J is selected. No cultural KOPs were analyzed for this area. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analyses.

Alternatives 7H, 7I, and 7J would cross the Sawtooth NF. The Project is consistent with the Sawtooth NF Forest Plan standards and guidelines for heritage resources, with the exception of the Tunnel Hill Archaeological District in the southwestern corner of the Cassia Division of the Minidoka Ranger District. Most of the anticipated impacts will be addressed through mitigation measures (see Section 3.3.4). No cultural KOPs were analyzed for this area. The archaeological district should be avoided.

Segment 8

The Proposed Route in Segment 8 is 131 miles long and has a modest number of prehistoric (n=48) and historic (n=68) sites, for a ratio of approximately 0.9 site/mile. The known site density in this segment is relatively low, even though superior fisheries, milder climate, fine natural grasses, and meadows with root crops are present. Relative to the five Route Alternatives, the impacts of the Proposed Route are considered to be moderate. Alternatives 8B and 8D would have fewer impacts than their comparison portions of the Proposed Route. The comparison portions of the Proposed Route would have fewer impacts than Alternatives 8A, 8C, and 8E. Proposed Route of Segment 8 passes through the extreme northern end of the Guffey Butte-Black Butte Archaeological District, which was listed in the NRHP in 1978. The district is located along a 35-mile-long section of the Snake River Canyon in Ada, Canyon, Elmore, and

Owyhee Counties and follows the boundaries of the SRBOP. It encompasses 14,000 acres and includes 113 sites, all but four of which are open and sheltered prehistoric sites, as well as elaborate and spectacular prehistoric rock art. The four historic sites include the Swan Falls Dam, Guffey Railroad Bridge, the town site of Guffey, and an unknown historic settlement. Sites in the district offer the potential to address several regionally important research questions. This area should be avoided by using the comparision portion of the Proposed Route along Alternative 8E.

Table 3.3-16 summarizes historic trail crossings in Segment 8. Impacts to significant trail segments are greatest for the Proposed Route, followed by Alternatives 8A and 8B. The Project crosses no trails in Alternatives 8C,8D, and 8E.

Table 3.3-16. Historic Trail Crossings in Segment 8

Segment/Alternatives	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 8	3	8	11
Alternative 8A	6	3	9
Alternative 8B	1	1	2
Alternative 8C	–	–	–
Alternative 8D	–	–	–
Alternative 8E	–	–	–

The Proposed Route and Alternatives 8A, 8B, 8C, 8D, and 8E would affect lands managed by the Jarbidge FO, Four Rivers FO, and Shoshone FO.

The Proposed Route and Alternative 8A would cross areas covered by the Jarbidge RMP. The Jarbidge RMP specifies a utility avoidance/restricted area (overhead, surface, and underground) at the Oregon NHT, which would be impacted by Alternative 8A. The Proposed Route would also cross areas designated as VRM Class I around the Oregon NHT, which is inconsistent with the visual management guidelines of the land use plan. Alternative 8A would impact paleontological areas restricted by the Jarbidge RMP as well as cross the Kelton Road railroad. The Proposed Route and Alternative 8A are inconsistent with the Jarbidge RMP and would require amendments to the land use plan. Selection of the Proposed Route would require the RMP be amended to reclassify VRM Class II areas associated with the proposed transmission line to VRM Class III. Effects described for KOPs C118 and C83 would apply if the amendment were approved. If Alternative 8A were selected, amendments to the Jarbidge RMP would be needed to change the restricted area near the Project to “avoidance”, change VRM Class II areas to VRM Class III, and allow surface disturbance to within 330 feet of historical and paleontological sites. Effects described for KOPs C96, C106, C95, C61, C107, and C108 would apply if the amendments were approved. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analyses.

The Proposed Route and Alternatives 8B and 8C would cross areas covered by the Kuna MFP for the Four Rivers FO. The Proposed Project is inconsistent with the Kuna MFP and a land use plan amendment would be required to allow major utility construction outside of existing utility ROWs. Effects described for KOPs 89, 111, 100, 102 and 112 could only occur if the amendment were approved. The Kuna MFP

restricts activities within a ¼ mile corridor on either side of the UPRR, which would be impacted by Proposed Route and Alternatives 8B and 8C. An amendment to the Kuna MFP would be necessary that would allow micrositing of the transmission line such that its crossing would not affect the historic status of the railroad. No cultural KOPs were analyzed for this area. See Appendix F-1 for proposed amendment language.

The Proposed Route and Alternative 8E would cross areas covered by the SRBOP RMP within the Four Rivers FO. The SRBOP RMP emphasizes managing areas along the Oregon NHT and Snake River Canyon as VRM Class II, to provide reasonable protection for the NHT and scenic resources. The Project is not consistent with the SRBOP RMP and would require an amendment to the land use plan to reclassify specified VRM Class II areas affected by the Proposed Route and Alternative 8E to VRM Class III. Effects described for KOP 103 would apply if the amendment were approved.

The Proposed Route would cross areas covered by the Bennett Hills/ Timmerman Hills MFP within the Shoshone FO. The MFP has a goal of managing visual resources in conformance with the BLM guidelines. The Proposed Route would cross VRM Class II areas and would not be consistent with the MFP. An amendment to the land use plan to change the VRM Class II area to the north of the existing transmission line, including the existing ROW, to VRM Class III would be needed if this route were selected. Effects described for KOPs C86, C84, C83 would apply if the amendment was approved. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analysis.

Segment 9

The Proposed Route in Segment 9 is 161.8 miles long and has a modest number of prehistoric (n=75) and historic (n=41) sites, for a ratio of approximately 0.7 site/mile. Previous surveys in this area have been limited, which accounts for the low known site density, but they have demonstrated that the area was a center for cultural interactions, suggesting that actual site density may be moderate to high. Relative to the eight alternatives, the impacts of the Proposed Route are considered to be moderate to high. Alternatives 9A, 9B, and 9H would have fewer impacts than the comparison portions of the Proposed Route, whereas Alternatives 9C, 9D, 9E, 9F, and 9G would have greater impacts than the comparison portions of the Proposed Route. Alternative 9D also passes through the middle of the NRHP-listed Guffey Butte-Black Butte Archaeological District (see Segment 8 above for a description of the district). This area should be avoided by using the comparison portion of the Proposed Route in Alternative 9D. Alternative 9F would follow the Proposed Route until west of C.J. Strike Reservoir, thus avoiding the Cove Non-motorized Area, at which point it would turn north and join with Alternative 9D. Alternative 9G would follow the same alignment as 9D until 4 miles south of the Snake River crossing for 9D near Sinker Butte, at which point the alternative would cross the Guffey Butte-Black Butte Archeological District and parallel NHTs through the SRBOP. Alternative 9H would share an alignment with 9F until 4 miles south of the Snake River crossing, at which point 9H would follow the same alignment as 9G; paralleling NHTs through the SRBOP.

Table 3.3-17 summarizes historic trail crossings in Segment 9. Impacts to significant trail segments are greatest for Alternative 9D, followed by Alternatives 9B and 9C and the Proposed Route. The Project would cross no historic trails in Alternatives 9A and 9E.

Table 3.3-17. Historic Trail Crossings in Segment 9

Segment/Alternative	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 9	–	1	1
Alternative 9A	–	–	–
Alternative 9B	–	2	2
Alternative 9C	–	1	1
Alternative 9D	5	–	5
Alternative 9E	–	–	–
Alternative 9F	3	–	3
Alternative 9G	4	–	4
Alternative 9H	5	–	5

The Proposed Route and Alternatives 9A through 9H would affect lands managed by the Burley FO, Four Rivers FO, Jarbidge FO, Bruneau FO, and Owyhee FO.

The Proposed Route and Alternatives 9B, 9C, and 9E would cross areas covered by the Jarbidge RMP. The Jarbidge RMP specifies a utility avoidance/restricted area (overhead, surface, and underground) in the Salmon Falls Canyon. The Proposed Route is inconsistent with the Jarbidge RMP objectives of managing this area as an ACEC and under VRM Class II objectives. This route also would cross an area of Salmon Falls Creek that is eligible for WSR designation. An amendment would not be possible unless the segment were determined unsuitable for WSR designation. Additional VRM Class II areas would require plan amendments for the Proposed Route and Alternative 9D. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analysis.

The Proposed Route and Alternatives 9D, 9E, 9F, 9G, and 9H would cross areas covered by the SRBOP RMP within the Four Rivers FO. The SRBOP RMP emphasizes managing areas along the Oregon NHT as VRM Class II, to provide reasonable protection for the NHT. The Proposed Route and Alternatives 9D, 9F, 9G, and 9H are not consistent with these VRM requirements in the SRBOP RMP and thus would require an amendment to the land use plan reclassifying specified areas affected by the transmission line to VRM Class III (see Appendix G-1, Section 5.9 for a discussion of specific areas for reclassification). Effects described for KOPs C115, C90 and C109 would only apply if the amendments were approved. For the Proposed Route and Alternatives 9D, 9E, 9F, 9G, and 9H, the SRBOP RMP would also require amendments for impacts to additional visual resources, and sensitive plants. An amendment would be needed for the Proposed Route or Alternative 9D and Alternatives 9F through 9H for a one-time allowance permitting major utility construction outside of existing corridors. Effects described for KOPs C115, C116, C91, C90, and C109 would apply if these amendments were approved. These alternatives would also cross the Guffey Butte-Black Butte Archaeological District in a utility avoidance area. This area should be avoided if possible and if allowed would require significant mitigation to protect historic

resources. Requirements restricting land disturbance near slickspot peppergrass would be amended to permit disturbance to within 50 feet in order to allow the Project. Mitigation measures would be followed. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analyses.

The Proposed Route and Alternative 9A would cross areas covered by the Twin Falls MFP. The Twin Falls MFP designates the Oregon NHT as an SRMA, stipulating that the trail be fenced and restricting vehicular traffic. An amendment to the Twin Falls MFP would be required for utility construction outside of existing corridors. Effects for KOP C101 would apply if this amendment were approved. The Proposed Route would also cross a VRM Class I area adjacent to a section of Salmon Falls Creek that is Wild and Scenic River–eligible as well as within an ACEC. Selection of the Proposed Route or Alternative 9A would be inconsistent with the Twin Falls MFP and would require land use plan amendments; however, the section of Salmon Falls Creek that would be crossed by the Proposed Route is Wild and Scenic River –eligible and thus an amendment permitting this crossing could not be approved unless this section is determined to be unsuitable for Wild and Scenic River designation.

The Proposed Route would cross areas covered by the Bruneau MFP within the Bruneau FO. The Bruneau MFP has an objective to manage land in a manner that will protect and maintain the existing visual qualities, as well as enhance and rehabilitate land for visual resources as management allows. The Proposed Route would cross a parcel designated as VRM Class II and thus would not be consistent with the MFP and an amendment would be needed to reclassify this parcel to VRM Class III. No cultural KOPs were analyzed for this area. See Appendix F-1 for proposed amendment language and Appendix G-1 for visual analysis.

Segment 10

The proposed Segment 10 is 33.6 miles long and has a very low number of prehistoric (n=1) and historic (n=22) sites, for a ratio of approximately 0.7 site/mile. Previous surveys in this area have been limited and much of the area is private property, which may account for the very low site density. The impacts of the Proposed Route are considered to be low.

Table 3.3-18 summarizes historic trail crossings in Segment 10. The Proposed Route would cross three historic trails.

Table 3.3-18. Historic Trail Crossings in Segment 10

Segment	NHT Segments Crossed by Project	Non-NHT Segments Crossed by Project	Totals
Proposed Route 10	1	2	3

The Proposed Route would affect lands managed by the Burley FO and Shoshone FO. Segment 10 does not contain any Areas of Inconsistency. As such, no amendments to any local land use plans would be necessary.

3.3.3.6 Design Variation

A Design Variation is being considered that would consist of constructing two single-circuit lines in Segments 2 through 4 instead of a single double-circuit line (which is the design assessed above). The disturbance footprint of the two single-circuit towers is greater than that of the double-circuit tower, in part because the requested ROW would be wider, but also because helicopter-assisted construction could be implemented in these areas due to the lighter weight of the towers, which would require additional fly yards. The additional ROW space and the fly yards would cause additional temporary disturbance during construction. Across Segments 2, 3, and 4, the additional disturbance of the single-circuit tower alternative ranges from 25 to 30 percent greater than the comparable portions of the double-circuit tower disturbance under the proposed design. The two single circuits require more ground disturbance, but would be designed and constructed to the same standards as the Proposed Action. The Design Variation offers no noticeable impact on cultural resources other than visual impacts on historic resources.

3.3.3.7 Structure Variation

The proposed guyed Structure Variation would add four guy wires approximately 140 feet long from a point approximately 100 feet up in each tower to four guy anchors spaced in a square around the tower (Appendix B, Figure B-6). This would not change the amount of disturbance during construction or operation appreciably. There is no appreciable difference in impact on cultural resources from the use of this Structure Variation when compared to the use of self-supporting lattice towers, as the guyed towers would be approximately the same height and breadth at the top of the structure as the proposed self-supporting lattice towers and have no appreciable change in adverse impact if visible.

3.3.3.8 Schedule Variation

The Schedule Variation uses the two single-circuit design variation described above but extends construction over a longer timeframe. Initially, only one of the eventual two single-circuit lines would be constructed, with the second to be constructed at a later date. The Schedule Variation proposes that the first single-circuit transmission line in Segments 2, 3, and 4 would be built as soon as the ROW grant is issued, but that the second line would not begin construction until late 2018. This would mean nearly 2 years between the end of construction for the first line and beginning of construction for the second line. Any staging areas and fly yards that had been used for the first stage would have been revegetated after construction was complete and would have to be cleared again. There would be two sets of construction disturbances adding movement, noise, and dust to the area of construction in two instances in any given area. No appreciable difference in impacts on cultural resources exists between the Schedule Variation and the proposed schedule.

3.3.4 Mitigation Measures

Cultural resources previously identified within the Analysis Area have been reviewed to determine if any would be impacted by the Proposed Action and if such action would affect the qualities contributing to their NRHP eligibility. Project impacts include not only

the surface disturbance of the activity but also the visual and auditory elements that may alter the character of a historic property. The Proposed Action includes EPMs designed to avoid or minimize adverse effects on cultural resources. If a property has been determined to be adversely impacted, and efforts to avoid or minimize these impacts are not sufficient, then the following mitigation measures identified by the Agencies would be implemented.

CR-1 (for historic properties in all segments)

- Avoid direct impacts by designing the route so that no Project facilities, including access roads, are placed within the boundaries of historic properties.
- Should avoidance of historic properties not be feasible, assess adverse effects and develop one or more mitigation measures to address all unavoidable adverse impacts.

CR-2 (for historic trails and other linear routes in all segments)

- Design the transmission line to cross where existing development occurs.
- Cross the resource as close to a 90-degree angle as possible using a dog-leg or S curve.
- Adjust tower placement to use the maximum span distance to achieve maximum tower distance from the linear resource.
- Avoid paralleling the linear resource as much as possible and obtain maximum tower distance by shifting alignment and maximize topographic screening with lower structures, such as the two single-circuit steel-lattice design alternative.

The following compensatory mitigation was developed from a review of the Overland Pass Pipeline Project ROD MOA (BLM 2007b), the Oregon/Mormon Pioneer Historic Trails Management Plan (BLM 1986a), and suggestions from the NPS. Compensatory mitigation would be applied where potentially adverse impacts would occur after EPMs and other site-specific mitigation have been implemented, based on consultation with the Idaho, Nevada, and Wyoming SHPOs; the NPS; the CEQ; and other consulting parties, such as the OCTA and the Alliance for Historic Wyoming, to determine which compensatory mitigation measures are appropriate. This may be required in the Proposed Route in Segment 4 for the Dempsey-Hockaday Trail (KOP C10) and portions of the Sublette Cutoff Trail; the Proposed Route in Segment 7 and Alternatives 7C and 7D; Alternatives 8A and 9B for the Hagerman Fossil Beds; and the Proposed Route in Segment 10 for the Minidoka National Historic Site.

CR-3 Compensatory Mitigation Measures – The BLM, in consultation with the Wyoming, Nevada, and Idaho SHPOs, and consulting parties is developing a PA and a Historic Properties Treatment Plan. Compensatory mitigation measures may be developed as appropriate for specific historic resources. The following example measures may be considered for adversely affected properties, or other measures required:

- Fund or provide interpretive, educational exhibits placed in museums or nearby interpretive centers.
- Develop an illustrated guide to the regional archaeology and history, which would present the results of the Project's archaeology/history in layperson's terms for the general public.
- Provide new markers for the BLM and other public groups to position along historic trails, highways, and other linear resources.
- Fund or provide outdoor, interpretive wayside exhibits along access points to trails, highways, and other linear resources
- Fund or provide educational films or curriculum for area school districts about the history and significance of the linear resources.
- Acquire or trade land with willing seller(s).
- Preserve landscapes from a cultural landscape perspective.
- Bury elsewhere other (non-Project) lower kilovolt transmission or distribution lines.
- Commission studies of associated historic sites along the corridor to support a regional context.
- Re-vegetate disturbed areas to protect or restore viewsheds.
- Provide monetary support to historic trail-related state parks.

In addition to the above measures, the following measures would be required as part of Section 106 compliance. The manner in which they will be implemented would be included in the PA executed among the consulting parties:

CR-4 Conservation Easements – Where feasible and appropriate, conservation easements will be considered to preserve important archaeological and historic sites, and high integrity linear resource segments, or to preserve viewsheds. A conservation easement (sometimes called a conservation covenant) creates a legally enforceable land preservation agreement between a landowner and a government agency (federal, state, county, or municipality) or a qualified land protection organization ("land trust") for the purposes of conservation. It restricts real estate development, commercial and industrial uses, and certain other activities on a property to a mutually agreed upon level. The property remains the private property of the landowner.

In addition, the Forest Service requires the following mitigation measure:

CR-5 On NFS lands, a management plan should be developed for each historic property nominated to the NRHP. The plan should be drafted during the nomination process. The National Heritage Strategy should be used to guide decisions on issues related to the Heritage Program.