

### 3.19 TRANSPORTATION

This section provides a description of the existing transportation and traffic system and airports and analyzes the impacts that would be caused by the Preferred Route, Proposed Route, and Route Alternatives to the existing infrastructure. Effects on crop dusting are discussed in Section 3.18 – Agriculture. Potential impacts that would be caused by the Proposed Route and Route Alternatives relating to geologic hazards, soils, land use, and OHV use are discussed in Sections 3.14 – Geologic Hazards, 3.15 – Soils, and 3.17 – Land Use and Recreation, respectively.

The BLM's Preferred Routes for each segment of the Project are listed below. Where applicable, the preferred route identified by another federal agency or a county or state government is also noted. The BLM's Preferred Routes only apply to federal lands. If approved, the BLM's Preferred Routes could affect private lands adjacent to or between federal areas; however, decisions on siting and construction requirements for non-federal lands are under the authority of state and local governments (see Table 1.4-1 for permits that would be required and Section 3.17.1.3 for a description of the regulatory requirements).

- **Segment 1W:** The BLM's Preferred Route is the Proposed Route (Figure A-2). This route is also the State of Wyoming's preferred route.
- **Segment 2:** The BLM's Preferred Route is the Proposed Route (Figure A-3). This route is also the State of Wyoming's preferred route.
- **Segment 3:** The BLM's Preferred Route is the Proposed Route, including 3A (Figure A-4). This route is also the State of Wyoming's preferred route.
- **Segment 4:** The BLM's Preferred Route is the Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF. The portion of this route in Wyoming is also the State of Wyoming's preferred route. The Forest Service's preferred route is the Proposed Route within the NF incorporating Alternative 4G (Figure A-6).
- **Segment 5:** The BLM's Preferred Route is the Proposed Route incorporating Alternatives 5B and 5E, assuming that WECC reliability issues associated with 5E are resolved (Figure A-7). Power County's preferred route is the Proposed Route incorporating Alternatives 5C and 5E (Figure A-7).
- **Segment 6:** The BLM's Preferred Route is the proposal to upgrade the line voltage from 345 kV to 500 kV (Figure A-8).
- **Segment 7:** The BLM's Preferred Route is the Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be microsited to avoid sage-grouse PPH. Power and Cassia Counties' preferred route is Alternative 7K (Figure A-9).
- **Segment 8:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 8B (Figure A-10). This is also IDANG's preferred route.

- **Segment 9:** The BLM's Preferred Route is the Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and the community of Murphy (Figure A-11). Owyhee County's preferred route is Alternative 9D (Figure A-11).
- **Segment 10:** The BLM's Preferred Route is the Proposed Route (Figure A-12).

### 3.19.1 Affected Environment

This section discusses those aspects of the environment that could be impacted by transportation issues associated with the Project. It starts with a discussion of the Analysis Area considered; identifies the issues that have driven the analysis; characterizes the existing conditions across the Proposed Route and Route Alternatives in Wyoming and Idaho<sup>1</sup>; and lists impacts from the Project.

#### 3.19.1.1 Analysis Area

The Analysis Area for transportation includes the existing transportation infrastructure that would be affected by construction and operations of the proposed Project or its Route Alternatives. Transportation facilities in the vicinity of the Project range from Interstate highways to two-track trails, bridges, railroads, and airports. In mountainous areas (Segments 4, 5, and 7), roads tend to be narrow and curvilinear. Roads throughout the Analysis Area are managed by federal, state, and local agencies. Motorized recreational activities occur throughout the vicinity of the Project. On federal and state lands, these activities are managed by agencies through land use plans and policies, with some enforcement, while these types of activities on private lands are legally limited by the landowner. Airports and landing strips are used for transportation of passengers and cargo and agricultural activities.

The Analysis Area for roads comprises four parts:

1. Existing state and county maintained roads within 1 mile of the Proposed Route and Route Alternatives that would be mostly unaffected except for traffic increases that could temporarily affect the level of service or could result in some road damage;
2. Off-ROW existing roads needing improvement to a standard to support construction traffic;
3. Off-ROW new roads needed to access individual structure locations or the ROW; and
4. Roads built within the ROW connecting structure locations.

The Analysis Area for airports includes portions of routes that intersect areas within 3 miles of an airport or airstrip, including the controlled airspace. The Analysis Area for railroads and pipelines is the point of intersection with the ROW. No railroads or pipelines closely parallel the Proposed Route or Route Alternatives.

#### 3.19.1.2 Issues Related to Transportation

Comments made during scoping for this Project (Tetra Tech 2009) and by agency staff, and regulatory requirements were used to determine which transportation-related issues

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<sup>1</sup> The Project no longer has a route in Nevada.

would be analyzed in the EIS. Issues associated with transportation include the following:

- Whether a full map and inventory of all new temporary and permanent access roads for the Project would be developed;
- How vehicles taking materials and personnel to and from the Project site would affect traffic patterns;
- How roads, highways, railroads, and airports would be affected;
- Whether there would be an increase in off-highway vehicle use, and what the environmental impacts of this would be (discussed in Section 3.17 – Land Use and Recreation);
- Whether construction and operations of the Project would cut off access to any previously-accessible areas (discussed in Section 3.17 – Land Use and Recreation);
- How roads would affect livestock and grazing operations (discussed in Section 3.18 – Agriculture); and
- What the environmental effects of new temporary and permanent roads constructed for this Project would be (discussed in the appropriate sections of Chapter 3, e.g., effects of roads on wildlife is discussed in Section 3.10 – General Wildlife).

### **3.19.1.3 Regulatory Framework**

The Proponents and/or the construction contractor would be required to obtain use permits or similar legal agreements from the public agencies responsible for affected roadways and other applicable ROWs. The contractor would be responsible for all oversize and overweight permits required for delivery of construction materials and subcontractor components.

#### **Federal**

##### ***Federal Aviation Administration***

Activities requiring helicopter flights would operate under the control of the FAA.

The Proponents would file a notice of construction activities (14 CFR Part 77) with the FAA. The FAA is concerned with:

- Any construction or alteration exceeding 200 feet above ground level; and
- Any construction or alteration:
  - within 20,000 feet (3.79 miles) of a public use or military airport that exceeds a 100:1 sloping surface from any point on the runway of each airport with at least one runway more than 3,200 feet;
  - within 10,000 feet (1.89 miles) of a public use or military airport that exceeds a 50:1 sloping surface from any point on the runway of each airport with its longest runway no more than 3,200 feet; and
  - within 5,000 feet of a public use heliport that exceeds a 25:1 sloping surface.

These regulations do not apply to private landing strips.

### ***BLM and Forest Service***

On BLM-managed lands, new road construction and roads improved for Project use would be required to meet or exceed the minimum standards of width, alignment, grade, surface, and other requirements found in BLM Manual Section 9113 (BLM 1985c). On NFS lands, FSH 7709.56 – Road Preconstruction Handbook (Forest Service 2010), FSH 7709.57 – Road Construction Handbook (Forest Service 1992), and 7709.58 – Transportation System Maintenance Handbook (Forest Service 2009b) would apply.

BLM RMPs and MFPs, and National Forest Plans provide direction on road management along with other resources that govern roads on federal lands. Both the Forest Service and the BLM have Travel Management Plans that designate areas for motorized use, prohibit some uses to protect resources, or limit road use to certain times of the year for resource protection.

### **State**

#### ***Encroachment and ROW***

The Wyoming Department of Transportation's *Utility Accommodation Regulation* (WYDOT 1990) and Idaho Transportation Department's *Guide for Utility Management* (ITD 2008) provide the permit, encroachment, and occupancy requirements for construction and operations activities.

#### ***Blasting***

The transport, storage, and discharge of blasting materials shall be in accordance with the General Safety and Health Standards and Wyoming, Occupational Health & Safety – Construction, Chapter 21, Subpart U.

#### **County and Other Agencies**

Counties and other public agencies typically require an encroachment permit, road use permits, or other appropriate permit for ROW occupancy for the placement of any structures on, over, or under roads.

In addition, prior to conducting work within or above a road ROW, an encroachment permit or similar authorization would be required from the applicable jurisdictional agency at locations where the construction activities would occur within or above the public road ROW. The specific requirements of the encroachment permit from the applicable transportation agencies are determined on a project-by-project basis. The encroachment permit issued by state and local jurisdictions may include the following requirements:

- Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow.
- Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
- Schedule truck trips outside of peak morning and evening commute hours.

- Limit lane closures during peak hours to the extent possible.
- Include detours for areas potentially affected by project construction.
- Install temporary traffic control devices as specified in the *Manual of Uniform Traffic Control Devices for Streets and Highways* (FHWA 2003).
- Store construction materials only in designated areas.

Encroachment permit requirements would be specified by the agency having jurisdiction. Enforcement of the terms of an encroachment permit would reduce impacts associated with short-term road closures.

The design of higher standard roads (project constructed and other agency) also would conform to the most current edition of the American Association of State Highway and Transport Officials (AASHTO) *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤400)*. A low standard road is generally a single lane, unsurfaced and constructed of native materials, and without permanent drainage structures whereas a road providing smooth traffic flow with limited access is considered a high standard road.

Any railroad/overhead utility crossing would conform to the NESC:

- The height of rail car should be assumed to be 23 feet.
- Structures supporting power must be 50 feet out from the centerline of main running tracks, Centralized Traffic Control sidings, and heavy tonnage spurs. Locations adjacent to industry tracks must provide at least 30 feet of clearance from centerline of track when measured at right angles. If located adjacent to curved track, clearance must be increased at the rate of 1.5 inches per degree of curved track.
- Regardless of the voltage, unguyed poles must be located a minimum distance from the centerline of any track equal to the height of the pole above the groundline plus 10 feet. If guying is required, the guys must be placed in such a manner as to keep the pole from leaning/falling in the direction of the tracks.
- Structures for 34.5-kV and higher lines must be located off a railroad ROW.
- Crossings would not be installed within 500 feet of the end of railroad bridges or 300 feet from the centerline of culverts or switch areas.

#### **3.19.1.4 Methods**

Data for the transportation network were collected and analyzed from highway maps, GIS coverages, route alignment maps, and other maps from various reports and websites of the affected state and local agencies. Specific GIS data used were the ESRI StreetMap Streets data layer for roads and highways; the ESRI Airports layer, derived from the FAA National Airspace System Resource Aeronautical Data Product (dated January 18, 2007); the Railroads layer from the Bureau of Transportation Statistics (dated 2007); and a bridges layer taken from the U.S. Department of Transportation, Federal Highway Administration. Traffic volume data were obtained from Wyoming Department of Transportation and Idaho Transportation Department

databases. Locations of airports and landing strips were obtained from 2007 Bureau of Transportation Statistics Airport database and aerial photography. Travel management analyses have been completed for the Medicine Bow-Routt, Sawtooth, and Caribou-Targhee NFs. These analyses provide information to the decision-maker regarding possible new road construction and use, and are located in the Administrative Record.

### **3.19.1.5 Existing Conditions**

#### **Highways, Roads, Bridges, and Railroads**

Many federal and state highways intersect the Proposed Route and Route Alternatives; however, most roads crossed by the Project are low standard roads, often little more than two tracks. Table D.19-1 in Appendix D shows the miles of federal-, state-, and county-maintained roads and bridges within 1 mile of the Proposed Route and Route Alternatives. In Wyoming, major highways near the Project are I-80 and US 30. I-80 had about 5,000 to 7,000 vehicles per day on average in the vicinity of the Project in 2008, while US 30 had about 1,000 to 2,000 vehicles per day (WYDOT 2008). Major roads near the Project in Idaho include US 30 (less than 1,000 vehicles per day) and I-84 (more than 10,000 vehicles per day; ITD 2010). Mainline rail lines operating in the region include Burlington Northern Santa Fe and UPRR.

#### **Airports**

There are nine airports, eight landing strips (plus one proposed landing strip), and two heliports within 3 miles of the BLM's Preferred Route. Of these facilities, one private airport (Ellis Ranch) and five private landing strips are within 1 mile of the BLM's Preferred Route. Table D.19-2 in Appendix D lists the airports, airstrips, and heliports within 1 and 3 miles of all routes considered in detail in this Final EIS.

### **3.19.2 Direct and Indirect Effects**

This section is organized to present effects to existing transportation facilities from construction, then operations, followed by decommissioning activities for the Proposed Route and its alternatives. Each segment is analyzed in detail below in Section 3.19.2.3.

EPMs are presented in detail within this section only if it is the first time they have been discussed in Chapter 3; all other measures are referenced or summarized. A comprehensive list of all EPMS, and the land ownership to which they apply, can be found in Table 2.7-1 of Chapter 2.

#### **Plan Amendments**

Plan amendments are proposed for areas on BLM-managed and NFS land where the Project would not be consistent with the land use plans. Proposed amendments to BLM RMPs and MFPs are summarized in Table 2.2-1 of Chapter 2, while BLM plan amendments associated with other routes are summarized in Table 2.2-2. BLM plan amendments are discussed in detail in Appendices F-1 and G-1. Proposed amendments to Forest Plans are summarized in Table 2.2-3 of Chapter 2 and discussed in detail in Appendices F-2 and G-2. Proposed plan amendments, as well as amendments associated with alternative routes, that could directly impact transportation

by leading to new road construction or road improvement in areas where these activities at not currently permitted include the following:

- Medicine Bow Forest Plan: If Segment 1W is approved, areas within MA 3.31 Backcountry Recreation where roads would be constructed or improved (reconstructed) for the Project would be allocated to RN.
- Caribou Forest Plan: Segment 4 – Designate a new corridor of Management Prescription 8.1 Concentrated Development Area. The corridor will be 9.4 miles long and between 250 and 300 feet wide (the 250-foot-wide ROW plus additional clearing to create a more natural-appearing boundary). The area within 500 feet of the transmission line and new access roads will have a Recreation Opportunity Spectrum (ROS) classification of RN.
- SRBOP RMP:
  - Segment 8 Proposed Route – permit the Project to cross Halverson Bar non-motorized area (the BLM has stated they would not approve this amendment; Alternatives 8B and 8E avoid this area);
  - Alternatives 9D and 9G – permit the Project to cross Cove non-motorized area
- Twin Falls MFP and Jarbidge RMP: permit the Project to cross the Salmon Falls Creek ACEC, which restricts motorized vehicle access.

### **3.19.2.1 No Action Alternative**

Under the No Action Alternative, the BLM would not issue a ROW grant to the Proponents of Gateway West and the Project would not be constructed across federal lands. No land management plans would be amended to allow for the construction of this Project. No Project-related impacts to transportation would occur; however, impacts would continue as a result of natural events (such as fire, drought, and severe weather) as well as from existing and planned developments within the Analysis Area and from other projects, including new or improved roads associated with wind farm development, mining, agricultural, or other competing land uses. The demand for electricity, especially for renewable energy, would continue to grow in the Proponents' service territories. If the No Action Alternative is implemented, the demand for transmission services, as described in Section 1.3, Proponents' Objectives for the Project, would not be met with this Project and the area would have to turn to other proposals to meet the transmission demand. Under the No Action Alternative, impacts similar to those described below may occur due to new transmission lines built to meet the increasing demand in place of this Project.

### **3.19.2.2 Effects Common to All Action Alternatives**

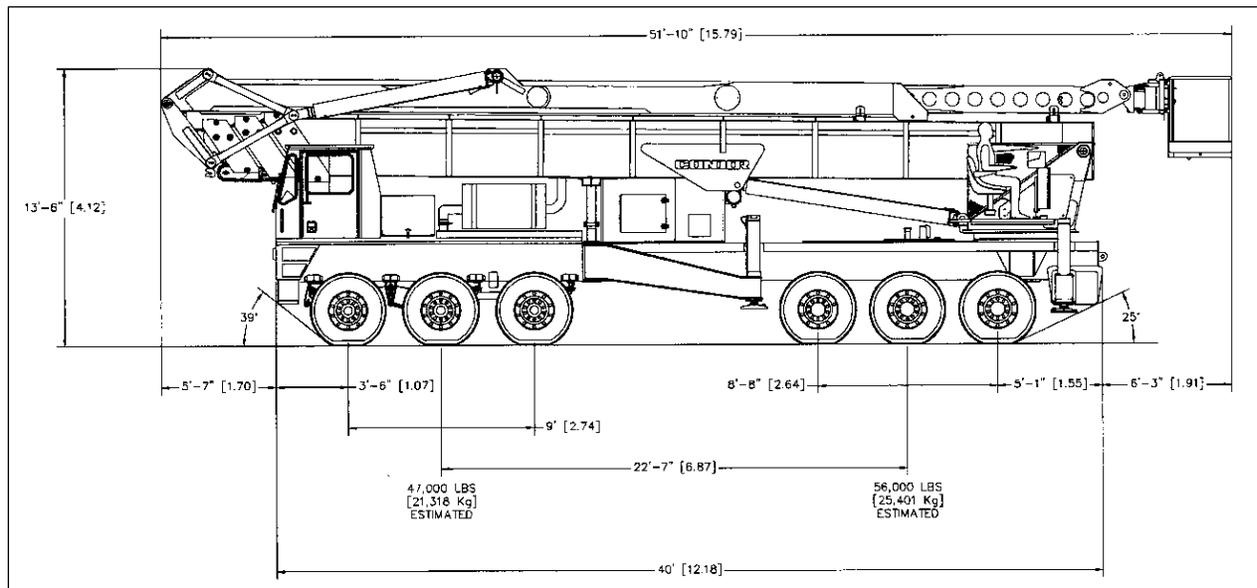
#### **Construction**

##### ***Highways, Roads, Bridges, and Railroads***

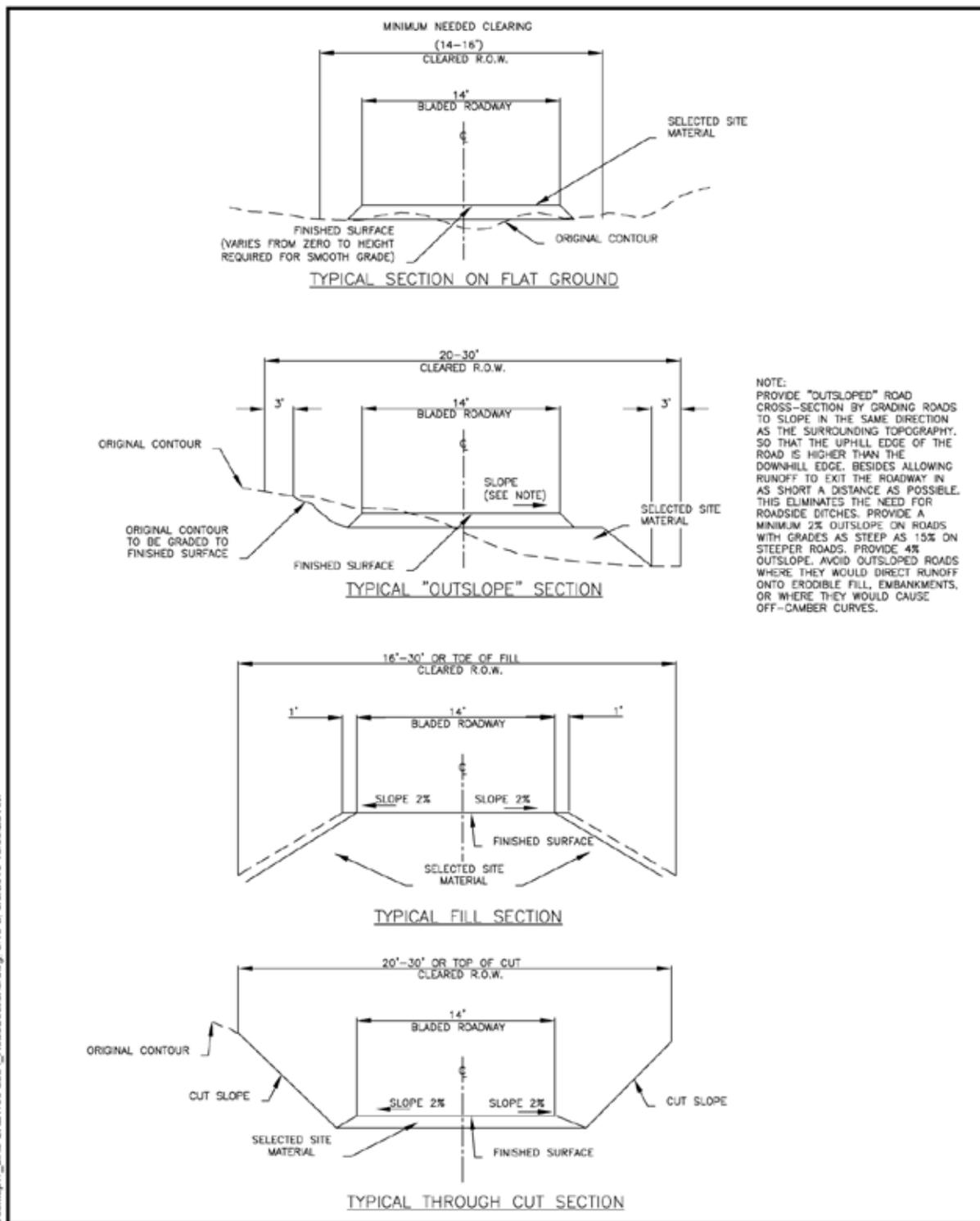
Roads other than state and federal highways and improved county roads would be used to provide access for personnel, material, and equipment to multipurpose yards. "Other roads" include those privately owned (e.g., ranch, oil and gas, power company, private

land access) as well as BLM, Forest Service, and county or other agency roads. Most construction sites and many helicopter fly yards would use these “other roads,” most of which are low standard and require improvement. Where no suitable road already exists, new roads to otherwise inaccessible sites would be required. Based on the current Project facility layout, approximately 957 miles of existing roads would be improved and 844 miles of new roads would be constructed for the Proposed Route (Table B-9 in Appendix B).

The Proponents have identified the minimum access road requirements for transmission line and substation construction, determined by the largest piece of equipment involved: a 14-foot-wide road top with a 16- to 20-foot width at corners (see Appendix B). A minor amount of additional disturbance would occur in association with cut and fill methods or the installation of temporary or permanent culverts should they be required where roads cross streams. The critical vehicle for tower construction is an aerial lift crane. A typical unit is shown in Figure 3.19-1. Typical minimum road construction requirements for improvements to existing roads and for new roads are shown in Figure 3.19-2. To the maximum extent possible, the Proponents would use existing roads, improving them as necessary to accommodate construction equipment. Construction of new access roads would be limited to reduce the overall impact of road construction. Figures 3.19-3 and 3.19-4 illustrate how existing roads, including those associated with parallel transmission lines, would be used to minimize the length of new access roads that would be required.



**Figure 3.19-1.** Condor 201S Aerial Lift Crane That Would Be Used During Construction Activities (roadable length 52 feet; width 8 feet 6 inches)



NOTE:  
PROVIDE "OUTSLOPED" ROAD CROSS-SECTION BY GRADING ROADS TO SLOPE IN THE SAME DIRECTION AS THE SURROUNDING TOPOGRAPHY, SO THAT THE UPHILL EDGE OF THE ROAD IS HIGHER THAN THE DOWNHILL EDGE, BESIDES ALLOWING RUNOFF TO EXIT THE ROADWAY IN AS SHORT A DISTANCE AS POSSIBLE. THIS ELIMINATES THE NEED FOR ROADSIDE DITCHES. PROVIDE A MINIMUM 2% OUTSLOPE ON ROADS WITH GRADES AS STEEP AS 15% ON STEEPER ROADS. PROVIDE 4% OUTSLOPE, AVOID OUTSLOPED ROADS WHERE THEY WOULD DIRECT RUNOFF ONTO ERODIBLE FILL, EMBANKMENTS, OR WHERE THEY WOULD CAUSE OFF-CAMBER CURVES.

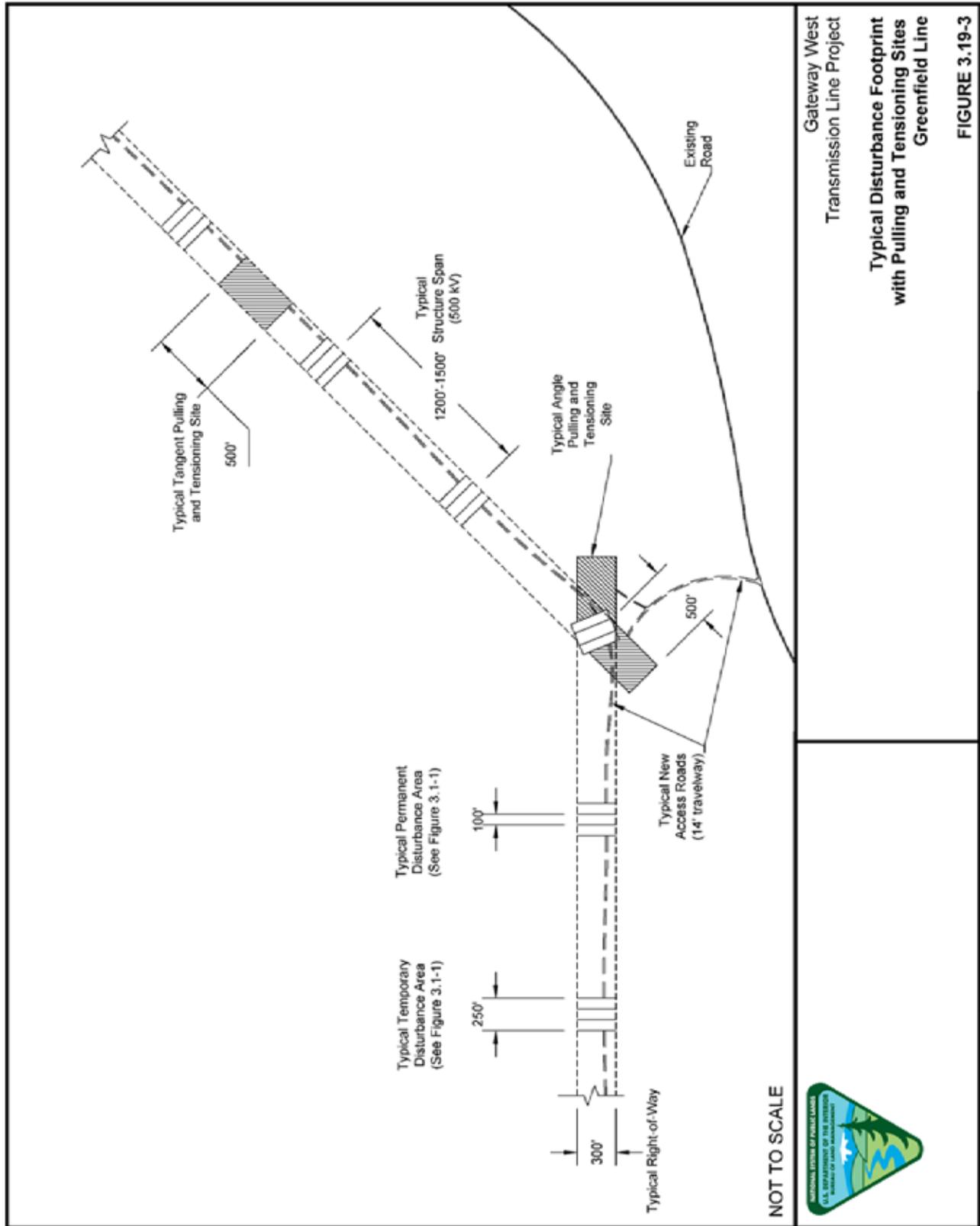
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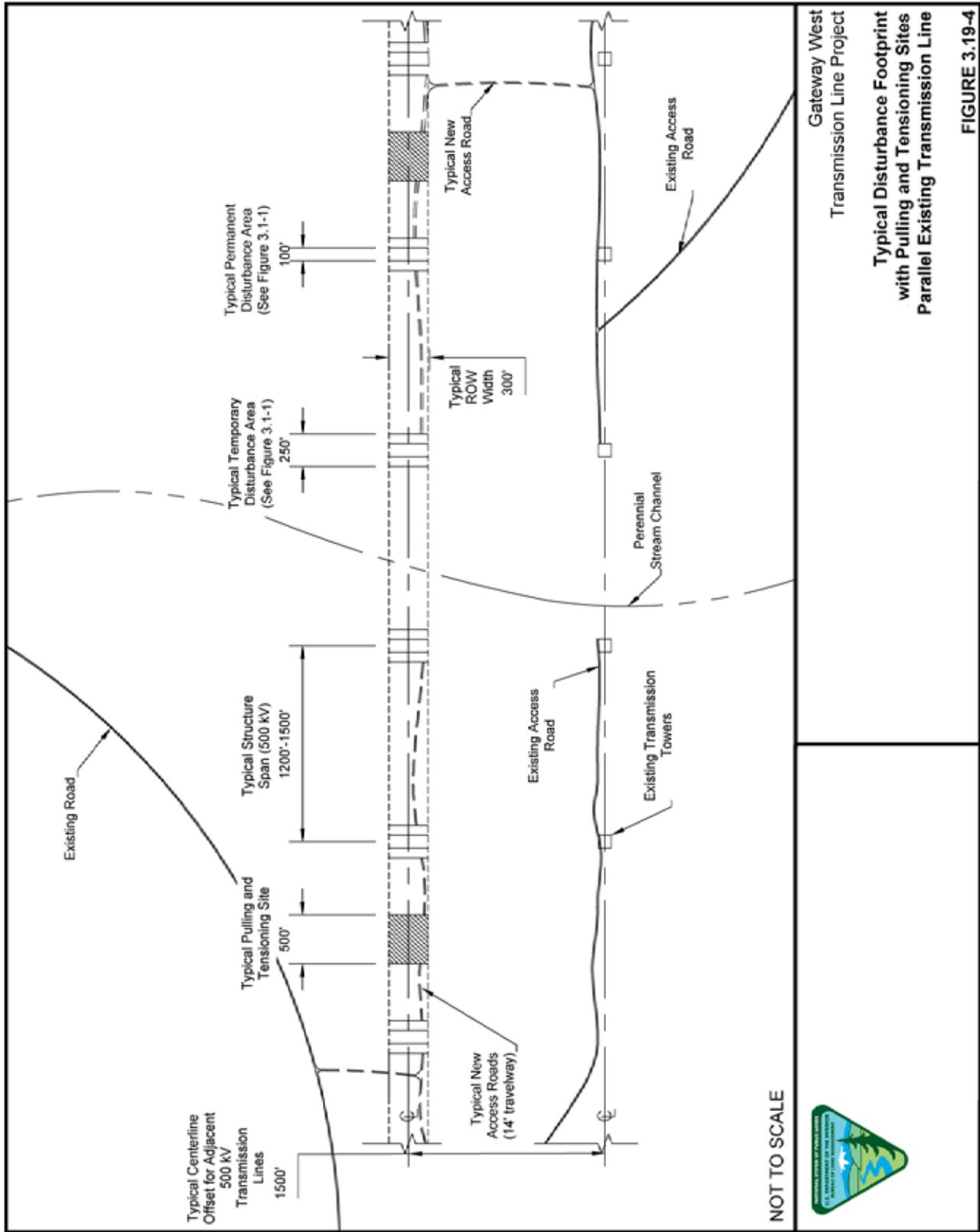
From PacifiCorp Transmission Construction Standards  
TA 501, 2008

Gateway West  
Transmission Line Project  
Idaho and Wyoming  
**Typical Road Sections for Different  
Terrains**

**FIGURE 3.19-2**



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Construction activities could conflict with improvement projects. Complying with local permits and agreements would ensure appropriate coordination between the Proponents and the affected agencies so that conflicts would be avoided or minimized. To minimize impacts to local roads used during Project activities, the following EPM will be implemented:

- TRANS-10 Roads negatively affected by construction and as identified by the agencies will be returned to pre-construction condition.

A transmission line project could affect the ground transportation system (roads and railroads) during construction, particularly during the installation of structures and the stringing of conductors. Transportation of water for dust control and concrete batching, particularly for substations, would require multiple truck trips per day. The Proponents have estimated a total of 102 million gallons of water use across the entire Project. Substations would require between 200 and 2,800 truckloads of water for dust control alone during construction. Construction could result in roadway closures where construction activities and deliveries are located within public road and highway ROWs. Vehicles and equipment (e.g., overhead line cranes, concrete trucks, construction equipment, materials delivery trucks) could damage roads and bridges, shortening the life of the pavement and eventually leading to rutting and cracking. This would especially be true for heavy equipment, which does more damage to road surfaces than lighter passenger vehicles. Road use permits or similar documents would stipulate that it is the responsibility of the construction contractors and Proponents to rehabilitate or reconstruct roadways and structures during and after use.

The Proponents have committed to preparing a detailed transportation plan (including road maps) that would be developed to consider road conditions, wear and tear on roads, bridges, stream crossings, traffic control, and post-construction repair, reclamation, and access control. This plan would be approved by the appropriate federal, state, and local agencies prior to any Notice to Proceed to construction. Road construction, improvement, use, and decommissioning on BLM-managed lands would meet RMPs (as amended) design criteria, BMPs, and mitigation requirements. Forest Plan Standards and Guidelines (as amended) would apply on NFS lands. Ground-disturbing and vegetation management activities would comply with all Agency-wide and regional BMPs. In addition, the following EPM will be implemented:

- TRANS-1 A Traffic and Transportation Management Plan will be developed and implemented to provide site-specific details showing how the Project will comply with the EPMs listed in Appendix Z of the POD (and in Table 2.7-1). This plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction.

To minimize impacts to traffic loads and access issues on roads used by Project staff, the following EPMs will be implemented:

- TRANS-3 On county- and state-maintained roads, caution signs will be posted on roads, where appropriate, to alert motorists of construction and warn them of slow traffic. Traffic control measures such as traffic control personnel, warning signs, lights, and barriers will be used during construction to ensure safety and to minimize traffic congestion.

- TRANS-4 To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.
- TRANS-5 Unauthorized vehicles will not be allowed within the construction ROW or along roadsides near the ROW.
- TRANS-7 Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.
- TRANS-9 Roads in residential areas will be restored as soon as possible, and construction areas near residences will be fenced off at the end of the construction day.
- TRANS-12 The Proponents will attempt to identify existing two-track trails as preferred temporary access roads for construction.
- TRANS-13 Roads will be designed so proper drainage is not impaired and roads will be built to minimize soil erosion. Consult with appropriate Agencies during design stage.
- TRANS-14 Access roads built for the Project on federal lands shall be closed to the public unless otherwise agreed upon with the land management agency. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage and road closure measures shall be evaluated during routine visits and maintained or replaced as necessary as part of routine maintenance. Access roads constructed solely for use by the Proponents will be maintained by the Proponents as needed for Proponents use in accordance with the ROW grant/special use permits.

Overhead construction activities could interfere with emergency response by ambulance, fire, paramedic, and police vehicles. Roadway segments that would be most impacted are two-lane roadways that provide one lane of travel per direction. Additionally, there is a possibility that emergency services would be needed at a location where access is temporarily blocked by the construction zone. The Proponents would implement a program that requires them to coordinate in advance with emergency services such as wildland fire, paramedics, and essential services such as mail delivery and school buses if a closure would exceed 1 hour. The following EPMS will be implemented to address these conditions:

- TRANS-2 If a construction method requires the closure of a state- or county-maintained road for more than 1 hour, a plan will be developed to accommodate traffic as required by a county or state permit.
- TRANS-8 Emergency vehicle access to private property will be maintained.

Construction or expansion of the substations associated with the Project could cause temporary road and lane closures that could disrupt traffic flow. Construction activities could disrupt pedestrian movement and safety on local roads, restrict access to properties, and damage local roads and bridges. If construction requires an

encroachment permit, the permit requirements would be specified by the agency having jurisdiction. Enforcement of the terms of an encroachment permit would reduce impacts of construction to the limits specified by the permit and would be the responsibility of the permitting agency and the Proponents. Construction of the regeneration sites would have minimal transportation impacts.

The proposed Project would generate a temporary increase in daily trips on the regional and local roadways. Worker-generated traffic would occur primarily in the early morning and late afternoon, while general deliveries likely would occur throughout the day. At any single location, this increase in traffic would be short-term as crews move over any individual construction spread along the transmission line. Workers may be commuting to the Project site from as far as 2 hours away, from outside the Analysis Area (see Section 3.4 – Socioeconomics). However, the effects from the comparatively small number of workers using the high standard, high-volume highways surrounding the Analysis Area is expected to be negligible. Areas in the vicinity of the Project generally have light existing traffic volumes, considerably below the theoretical traffic capacity of the primary highways and local roads. Table B-17 in Appendix B shows the average and peak daily traffic caused by the Project. Estimates range from approximately 24 average round trips a day for Segments 1W(a) and 1W(c), to 63 a day for Segments 2, 3, and 4, peaking at 93 trips a day along Segments 2, 3, and 4. This assumes that:

- 50 percent of the workers would be assigned to ground activities supporting tower construction and conduit stringing,
- Workers would be housed in commercial or temporary housing in nearby cities (see Section 3.4 – Socioeconomics),
- Workers would commute to the job site (where heavy equipment would remain overnight), and
- Workers would travel in crew cabs averaging 2.5 workers per vehicle.

The Proponents' Traffic and Transportation Monitoring Plan (see TRANS-1) and the requirements of state and county encroachment permits would provide adequate measures to ensure that traffic disruption and delay are minimized. This measure would ensure that Project trips are planned in accordance with existing road conditions. The Proponents would obtain permits that would describe circulation and detour routes, limit lane closures, and so on. Another potential impact of increased traffic on roads in the vicinity of the Project is public safety. All workers would be expected to obey local speed limits and traffic restrictions and it is assumed that local and state law enforcement would enforce traffic regulations throughout the Project area as they normally would. In addition, the following EPM will be implemented:

TRANS-6 Construction vehicles will follow a 25 mph speed limit on unposted project roads.

Vehicles and equipment entering paved roads from unpaved areas would also carry some sediment and mud onto the roadway. Impacts from roads on other resources are addressed in their respective sections, for example, Section 3.6 – Vegetation

Communities, Section 3.9 – Wetlands and Riparian Areas, Section 3.10 – General Wildlife and Fish, Section 3.15 – Soils, and Section 3.16 – Water Resources.

On January 12, 2001, the Forest Service issued the final NFS Road Management Rule. This rule revises regulations concerning the management, use, and maintenance of the National Forest Transportation System. The final rule is intended to help ensure that additions to the NFS road network are needed for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and that unneeded roads are identified and decommissioned. Impacts from Project construction on NFS roads would be similar to those described above for other roads.

Travel management planning (as required by FSH 7709.55 – Travel Planning Handbook [Forest Service 2009c]) has been completed for the Medicine Bow-Routt, Sawtooth, and Caribou-Targhee NFs. These analyses are designed to provide decision-makers with information to manage road systems that are safe and responsive to public needs and desires, are economically and efficiently managed, and have minimal negative ecological effects on the land. The travel management plan for each NF was one tool used to identify whether the proposed road construction and reconstruction would be consistent with management standards for each NF.

### ***Airports and Airstrips***

Construction of the Proposed Route or Route Alternatives would not affect airports or existing airstrips. Construction equipment is not high enough to interfere with these facilities. Section 3.17 – Land Use and Recreation includes additional information on airstrips on private land.

### **Operations**

Project operations would involve periodic inspection and maintenance of the transmission line and associated facilities. Impacts to transportation infrastructure from Project operations are described below.

### ***Highways, Roads, Bridges, and Railroads***

During Project operations, maintenance crews and vehicles would conduct inspection and maintenance activities. Aerial inspection would be conducted by helicopter annually. Detailed ground inspections of the entire transmission line system would take place on a semi-annual basis using four-wheel-drive trucks or all-terrain vehicles. The Proponents plan to conduct maintenance on the critical 500-kV and 230-kV system using live-line maintenance with equipment as large as the aerial lift crane illustrated in Figure 3.19-1. These activities would increase wear and tear on transportation infrastructure components. Personnel and equipment traveling to and from the site for operations purposes would also temporarily, though very slightly, increase traffic loads on local roads. These impacts are not expected to be substantial.

Roads built or improved to a 14-foot-wide traffic surface for construction would be reduced in width to 8 feet for operations. This 8-foot-wide area would be revegetated with low plants such as grasses and forbs but still be drivable. The remainder of the width would be restored in accordance with the Framework Reclamation Plan in Appendix B. Roads

used during construction and not needed during operations would be decommissioned and revegetated, as required by the land management agency. The following EPM will be implemented to specifically address closure of temporary construction roads.

- TRANS-11 Roads developed specifically for this project that are identified by the Proponents as no longer necessary will be reclaimed as specified in the Final Reclamation Plan. Culverts will be removed.

Additional restoration requirements may be imposed by individual land management agencies.

If major maintenance and repair work requires lane restrictions and/or roadway or railroad closures, the Proponents have committed to EPMs (TRANS-2 and TRANS-8) that require an access plan and allowances for emergency access to private property. In addition, all maintenance activities would be performed in accordance with the Proponents' Framework Operations, Maintenance, and Emergency Response Plan that is presented in full in Appendix B.

The Agencies are concerned that the improved existing and new access roads would result in increased use of the public lands because they would open up new access points. This concern relates to all vehicles but is particularly a concern for OHVs. This problem would be minimized because gates would be installed at all Project-related roads and closed to public use. This is discussed and evaluated in detail in Section 3.17 – Land Use and Recreation.

### ***Airports and Airstrips***

Air traffic patterns would not be affected by the placement of new structures or conductors, as no vertical obstruction prohibitions would be violated.

Helicopter flights associated with Project operations may affect several airports, public and private, and three heliports. These flights may occur within the controlled zones throughout the Analysis Area. All flight operations are FAA controlled. Impacts would include increased traffic load at these airports, though this is expected to be temporary and negligible due to the few flights that Project operations would require (only a few per year). Impacts to some private airports are discussed in Section 3.17 – Land Use and Recreation and implications for agricultural use are discussed in Section 3.18 – Agriculture and Appendix K.

### **Decommissioning**

Project facilities would be removed at the end of the operational life of the transmission line. Structures and foundations would be removed to below the ground surface level. They would not be removed in their entirety due to the large ground disturbance this would create. Soil and plants would be restored over the top of these underground foundation structures. Traffic generated during decommissioning would be similar to that created during facility construction. Decommissioning would involve heavy vehicles for removal and disposal of materials, as well as personal vehicles used by the construction work force to both commute to and from the work site and to move around within the work site during the day. Decommissioning of roads would be performed in accordance with agency direction and in NF areas in accordance with Forest Service publication *A Guide for Road Closure and Obliteration in the Forest Service* (Moll 1996).

The Proponents would be responsible for the reclamation of service roads following abandonment. Reclamation of service roads would not affect the transportation system. Service roads would be decommissioned and reclaimed following removal of the structures and lines and may be decommissioned and reclaimed while the lines are in-service if they are determined to no longer be necessary. The Proponents would comply with EPM TRANS-11.

While the Proponents' intent is to reclaim all roads used for construction and operations of the Project following decommissioning, this EPM (i.e., TRANS-11) does not recognize that some of these roads may have become important or convenient for other uses. Therefore, the following EPM has been adopted project-wide:

- TRANS-15 Roads to be abandoned may be left intact through mutual agreement of the land management agency, landowner, the tenant, and the Proponents, unless located in flood areas or drainage hazard areas or otherwise restricted by federal, state, or local regulations.

### **3.19.2.3 Comparison of Alternatives by Segment**

Table 3.19-1 lists the number of highways, roads, and railroads crossed by the Preferred Route, Proposed Route, and Route Alternatives. Table D.19-1 in Appendix D summarizes the roads, railroads, and bridges within 1 mile of the Proposed Route and Route Alternatives. Impacts to transportation and infrastructure are expected to decrease with a greater number of existing roads in the area due to the diffusion of Project traffic. With more roads and access points to Project structures, the finite number of Project-related vehicles can disperse and thus not be forced to use one or a few access points or roads. This dispersal would also result in less noticeable increases in traffic loads, resulting in reduced emergency access and safety issues. Impacts on traffic would decrease with increasing quality and size of existing roads. However, the impacts would increase with higher numbers of crossings of Interstate highways, other highways and roads, and railways because of potential disruptions to traffic and damage to roads and railways. The number of bridges within a 1-mile corridor from the centerlines of the Preferred/Proposed Route and Route Alternatives for each segment is also presented below, because these bridges would likely serve Project-related traffic, resulting in more wear on these structures than would occur otherwise. To assess impacts specifically by segment and alternative, the road density within the Analysis Area; the number of road, railroad, and bridge crossings; and whether these roads are small local roads or large highways are given below in Table 3.19-1 and by segment.

**Table 3.19-1.** Transportation Facilities Crossed by Route Alternatives Compared to Preferred Route and Proposed Route

Segment Number	Segment/Alternative	Segment Length (Miles) <sup>1/</sup>	Interstate Highway Crossings	Other Highway/Road Crossings	Railroad Crossings
1W(a)	Preferred/Proposed – Total Length	73.8	1	64	2
	Preferred/Proposed – Comparison Portion for Alt. 1W(a)-B	16.5	1	14	2
	Alternative 1W(a)-B	20.9	1	25	2
1W(c)	Preferred/Proposed – Total Length	73.6	1	70	1
2	Preferred/Proposed – Total Length	91.9	1	97	6
	Preferred/Proposed – Comparison Portion for Alternative 2A	36.9	1	13	3
	Alternative 2A	16.0	1	18	2
	Preferred/Proposed – Comparison Portion for Alternative 2B	12.5	1	12	3
	Alternative 2B	12.2	1	15	2
3	Segment 3 – Preferred/Proposed – Total Length	45.9	1	26	2
	Segment 3A – Preferred/Proposed – Total Length	5.1	–	3	–
4	Preferred/Proposed – Total Length	197.6	–	121	9
	Preferred/Proposed – Comparison Portion for Alternatives 4B,C,D,E,F	85.2	–	68	5
	Alternative 4B	100.2	–	101	6
	Alternative 4C	101.6	–	84	7
	Alternative 4D	100.8	–	96	6
	Alternative 4E	102.2	–	79	7
	Alternative 4F	87.5	–	62	4
	Proposed – Comparison Portion for Alternative 4G	2.3	–	1	–
Alternative 4G	2.6	–	1	–	
5	Preferred – Total Length	73.3	2	64	–
	Proposed – Total Length	55.7	2	45	–
	Proposed – Comparison Portion for Alternatives 5A,B	22.3	–	10	–
	Alternative 5A	29.7	–	16	–
	Alternative 5B	40.4	–	31	–
	Proposed – Comparison Portion for Alternative 5C	32.9	–	17	–
	Alternative 5C	26.0	–	22	–
	Proposed – Comparison Portion for Alternative 5D	19.2	1	21	–
	Alternative 5D	17.0	1	21	–
	Proposed – Comparison Portion for Alternative 5E	5.8	1	11	–
Alternative 5E	5.3	1	9	–	
6	Preferred/Proposed – Total Length	0.5	–	1	–
7	Preferred – Total Length	130.2	2	125	1
	Proposed – Total Length	118.2	2	101	1
	Proposed – Comparison Portion for Alternatives 7A,B	35.1	–	20	–
	Alternative 7A	37.7	–	25	–
	Alternative 7B	46.2	–	39	–
	Proposed – Comparison Portion for Alternative 7C	20.1	–	16	–
	Alternative 7C	20.3	–	16	–
	Proposed – Comparison Portion for Alternative 7D	6.2	1	11	–
	Alternative 7D	6.8	1	13	–
	Proposed – Comparison Portion for Alternative 7E	3.8	–	3	–
	Alternative 7E	4.5	–	4	–

**Table 3.19-1. Transportation Facilities Crossed by Route Alternatives Compared to Preferred Route and Proposed Route (continued)**

Segment Number	Segment/Alternative	Segment Length (Miles) <sup>1/</sup>	Interstate Highway Crossings	Other Highway/Road Crossings	Railroad Crossings
7 (cont.)	Proposed – Comparison Portion for Alternative 7F	10.5	–	9	–
	Alternative 7F	10.8	–	6	–
	Proposed – Comparison Portion for Alternative 7G	3.3	–	1	–
	Alternative 7G	3.4	–	4	–
	Proposed – Comparison Portion for Alternative 7K	118.2	2	101	1
	Alternative 7K	148.1	2	114	–
8	Preferred – Total Length	132.0	1	139	4
	Proposed – Total Length	131.5	1	138	3
	Proposed – Comparison Portion for Alternative 8A	51.9	–	33	1
	Alternative 8A	53.6	1	49	2
	Proposed – Comparison Portion for Alternative 8B	45.3	1	69	2
	Alternative 8B	45.8	1	70	3
	Proposed – Compare to Alternative 8C	6.5	1	5	–
	Alternative 8C	6.4	1	7	–
	Proposed – Comparison Portion for Alternative 8D	6.9	–	12	–
	Alternative 8D	8.1	–	9	–
	Proposed – Comparison Portion for Alternative 8E	7.0	–	13	–
	Alternative 8E	18.3	–	29	–
9	Preferred – Total Length	171.4	–	175	1
	Proposed – Total Length	162.2	–	212	1
	Proposed – Comparison Portion for Alternative 9A	7.8	–	12	–
	Alternative 9A	7.7	–	13	–
	Proposed – Comparison Portion for Alternative 9B	49.1	–	55	–
	Alternative 9B	52.3	–	77	–
	Proposed – Comparison Portion for Alternative 9C	14.4	–	17	–
	Alternative 9C	14.4	–	26	–
	Proposed – Comparison Portion for Alternatives 9D, F, G, and H	57.2	–	86	–
	Alternative 9D	60.1	–	90	–
	Alternative 9F	63.3	–	115	–
Alternative 9G	57.8	–	81	–	
9	Alternative 9H	61.0	–	106	–
	Proposed – Comparison Portion for Alt. 9E (revised)	61.4	–	90	–
	Alternative 9E (revised)	70.6	–	53	–
10	Preferred/Proposed – Total Length	34.4	1	65	2
<b>Total Crossings for All Proposed Routes</b>			<b>10</b>	<b>943</b>	<b>27</b>

1/ Mileages are rounded to nearest tenth.

**Segment 1W**

The preferred routes in Segment 1W are as follows:

Segment	Preferred Route	Agency
Segment 1W(a)	Proposed Route (Figure A-2)	BLM and State of Wyoming
Segment 1W(c)	Proposed Route (Figure A-2)	BLM and State of Wyoming

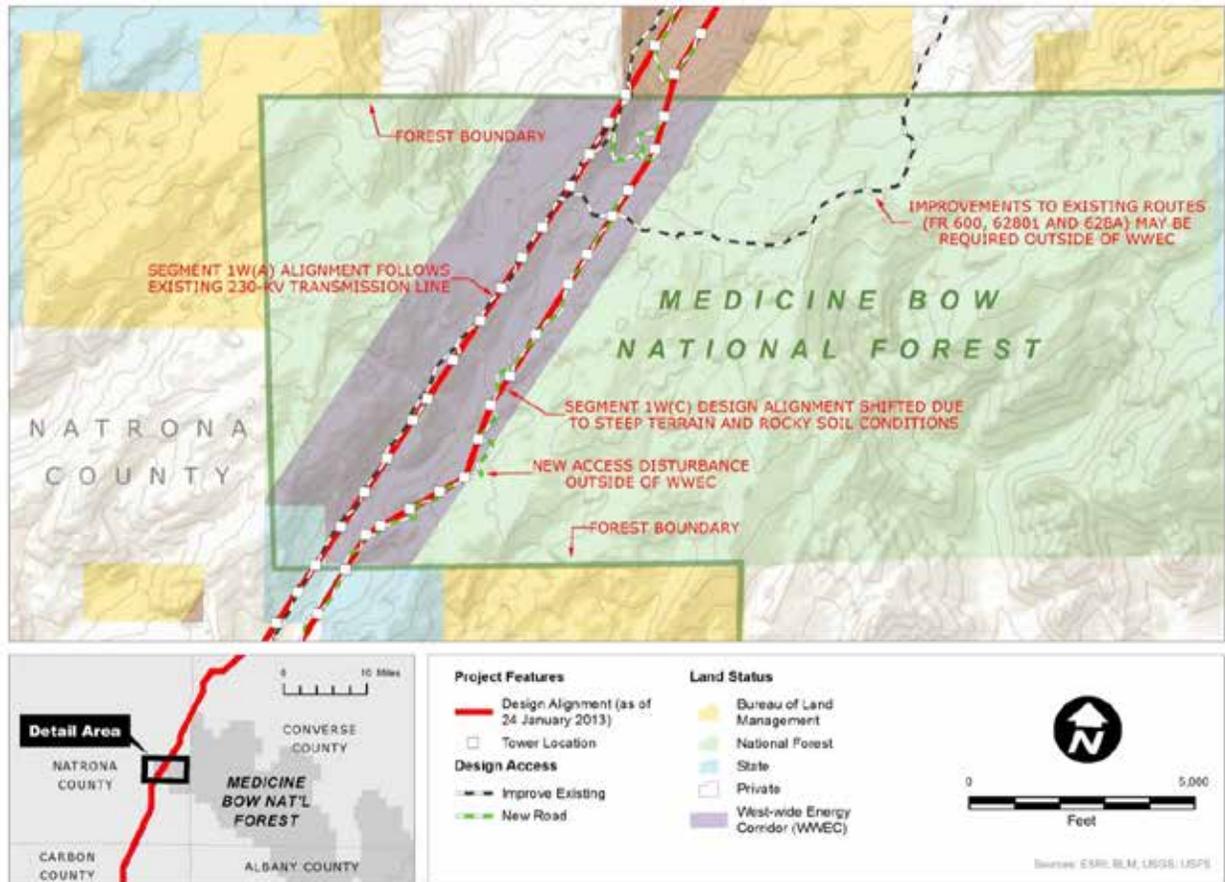
Segment 1W is composed of Segments 1W(a) and 1W(c), both of which consist of single-circuit 230-kV transmission lines. Generally, Segment 1W(a) would be a new 73.8-mile-long transmission line, and 1W(c) would involve reconstruction of a 73.6-mile-

long portion of the existing Dave Johnston – Rock Springs 230-kV transmission line. However, in the area approximately 5 miles to the north and south of Ice Cave Mountain, the lines shift east to avoid the ice cave. In this area, 1W(a) would be the reconstruction of the existing line and 1W(c) would be the new line. Segment 1W(a) has one alternative, Alternative 1W(a)-B, which is located north and west of the town of Glenrock and was the Proponents' initial proposal. However, the Proposed Route was revised following the Draft EIS public comment period in order to avoid the more populated area around Glenrock. Figure A-2 in Appendix A shows the location of the Segment 1W routes.

A good system of roads exists in the northern half of Segments 1W(a) and 1W(c) of the Preferred/Proposed Routes. There are few roads in the southern half of the routes. For Segment 1W(a), 64.8 miles of new road would be constructed and 91.6 miles of existing road would be improved. For Segment 1W(c), 26.1 miles of new road would be built, and 76.5 miles of existing roads would be improved. The construction of Segments 1W(a) and 1W(c) would result in some wear and tear on the existing road system. Alternative 1W(a)-B would cross more roads than the comparison portion of the Proposed Route. Alternative 1W(a)-B would lie within 1 mile of five fewer bridges than the comparison portion of the Preferred/Proposed Route.

### ***Medicine Bow-Routt National Forests Crossed by Segment 1W***

Segments 1W(a) and 1W(c) cross the Medicine Bow-Routt NFs within the WWE corridor; however, approximately 3.4 miles of new access roads would be required to construct the transmission line. Approximately 0.2 mile of new road construction would be outside the WWE corridor, within Management Prescription 3.31—Backcountry Recreation (managed for an ROS Class of SPM). In addition, approximately 3.1 miles of existing road within the WWE corridor would need improvement, as would 1.7 miles of Forest Service Road 62801, outside the WWE corridor, within Management Prescription 3.31 (Figure 3.19-5). New high standard roads would be inconsistent with Forest Plan direction for this management prescription. The Forest Plan reads: "Management Prescription 3.31: Allow uses and activities only if they do not degrade the primitive character of the area." Gateway West would need to improve approximately 2.3 miles of existing road for construction within this land use designation. A plan amendment has been proposed for Segment 1W to make the Project consistent with the Forest Plan (see Appendix F-2). The requested amendment is: "The Gateway West transmission line will be allowed and the land crossed by the Project managed for a Recreation Opportunity Spectrum (ROS) Class of Roded Natural." New roads would be closed to the public; therefore, there would be no additional impacts to transportation infrastructure if this amendment is approved. Design, construction, decommissioning, restoration, and maintenance of new roads would be performed under direction of the Forest Service. Road Management Objectives (RMOs) would be developed for each road on NFS land as part of the final road design. The Medicine Bow Motor Vehicle Use Map (developed as part the Medicine Bow NF Travel Management Plan) does not include any open roads in the area crossed by the Project. All existing roads in Sections 13, 14, 23, and 24, Township 30 North, Range 78 West, are closed to public access. Any additional roads needed for the Project would also be closed to the public.



**Figure 3.19-5.** New Access Roads and Existing Roads Needing Improvement on the Medicine Bow-Routt National Forests

**Segment 2**

The preferred route in Segment 2 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-3)	BLM and State of Wyoming

Segment 2 consists of one single-circuit 500-kV transmission line between the proposed Aeolus Substation and the location of the originally planned Creston Substation near Wamsutter, Wyoming (a new substation at Creston is no longer needed due to changes in anticipated demand for oil and gas field electricity). The Preferred/Proposed Route has been revised to incorporate Alternative 2C, as analyzed in the Draft EIS. Segment 2 would be approximately 91.9 miles long. Alternative 2A is being considered by the BLM because this alternative route is within the WVE corridor. Alternative 2B was initially the Proponents’ Proposed Route before they responded to local suggestions and relocated the Preferred/Proposed Route farther to the south. Figure A-3 in Appendix A shows the location of the Segment 2 routes.

The Preferred/Proposed Route would generally follow I-80 and US 30; therefore, primary access near the Proposed Route would be good. The portion of the revised

Proposed Route analyzed in the Draft EIS as Alternative 2C crosses open country with few developments and only two-track roads as transportation infrastructure. Access to this portion of the route would be limited by the lack of two-laned and paved roads. For the Preferred/Proposed Route, 75.6 miles of new road would be constructed, and 107.7 miles of existing roads would be improved. There are 25.5 miles of roads within 1 mile to either side of the 91.9-mile Preferred/Proposed Route. Alternatives 2A and 2B are closer to existing roads than the comparison portions of the Proposed Route. Alternatives 2A and 2B would cross more roads than the comparison portion of the Proposed Route. Alternatives 2A and 2B would decrease the number of railroad crossings. Selection of either alternative would result in fewer bridges within 1 mile than the comparison portion of the Proposed Route. In terms of transportation infrastructure, the Preferred/Proposed Route and Route Alternatives would have very similar impacts.

**Segment 3**

The preferred route in Segment 3 is as follows:

Preferred Route	Agency
Proposed Route, including 3A (Figure A-4)	BLM and State of Wyoming

A single-circuit 500-kV line would link the former location of the Creston Substation, approximately 2.1 miles south of Wamsutter, Wyoming, to the proposed Anticline Substation near the existing Jim Bridger Power Plant. Segment 3 would be approximately 45.9 miles long. This segment also includes a 5.1-mile segment of 345-kV line to connect to the existing Jim Bridger Power Plant Substation (Segment 3A). There are no alternatives proposed along Segment 3. Figure A-4 in Appendix A shows the location of the Segment 3 routes.

The Preferred/Proposed Route would follow the I-80 and US 30 corridors. For the Segment 3 Preferred/Proposed Route, 48.0 miles of new road would be constructed and 20.7 miles of existing roads would be improved; Segment 3A would have 5.3 miles of new roads and 0.4 mile of existing road improved. There would be 38.8 miles of roads within 1 mile to either side of the 45.9-mile Segment 3 Preferred/Proposed Route and Segment 3A would have 3.2 miles of roads within 1 mile. Many of these roads would be private roads supporting the extensive oil and gas development in the surrounding area. Segment 3 would lie within 1 mile of 10 bridges while Segment 3A would be near no bridges. Access to the ROW would be good and potential road damage and other transportation impacts would be low because of the high road density, and good condition and large traffic capacity of the Interstate and highways in the area.

**Segment 4**

The preferred route in Segment 4 is as follows:

Preferred Route	Agency
Proposed Route (Figures A-5 and A-6) except within the Caribou-Targhee NF (see below)	BLM, State of Wyoming, and Lincoln County
Proposed Route within the NF incorporating Alternative 4G (Figure A-6)	Forest Service

Segment 4 would link the proposed Anticline Substation and the existing Populus Substation near Downey, Idaho, with a single-circuit 500-kV line. Its proposed length is approximately 197.6 miles. The Segment 4 Preferred/Proposed Route was revised to follow Alternative 4A, as analyzed in the Draft EIS, based on public comments. This segment generally follows an existing transmission line corridor. Segment 4 has five Route Alternatives in the middle portion of its route; however, 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, for which alternatives are presented, is approximately 85.2 miles long, and its alternatives vary from approximately 87.5 to 102.2 miles long. Alternatives 4B through 4E were proposed by the BLM Kemmerer FO (with input from various cooperating agencies), with the intent to avoid impacts to cultural resources to the extent practical. Alternative 4F was proposed by the Proponents to avoid impacts to cultural resources while still remaining north of the existing Bridger Lines. Alternative 4G was proposed by the Forest Service in order to avoid unstable soils identified along the Proposed Route during the 2012 soil assessment (it is located within Sections 1 and 2, Township 12 South, Range 41 East). Figures A-5 and A-6 in Appendix A show the location of the Segment 4 routes in Wyoming and Idaho, respectively.

For the Preferred/Proposed Route, 192.4 miles of new road would be constructed and 210.7 miles of existing roads would be improved. The density of miles of existing road per mile of transmission line for the Preferred/Proposed Route is 0.5. There would be few existing public roads within the 1-mile corridor followed by the eastern segment of the Preferred/Proposed Route between the Anticline Substation and the Kemmerer area. However, this area is characterized by oil and gas fields as well as coal and trona mining. These uses are expected to provide dispersed construction vehicle access to the ROW through an extensive system of private roads. West of Kemmerer to the area just east of Montpelier, the existing road matrix is not well-developed and access to the ROW would be concentrated at a few points, increasing impacts at those locations.

There are five Route Alternatives for Segment 4. Except for Alternative 4F, all of the alternatives would have more road crossings than the comparison portion of the Proposed Route and fewer miles of existing roads. Alternative 4F would have the least number of road crossings, as well as fewer than the comparison portion, and therefore would likely require the fewest road closures or restrictions and similar interferences. Again, all the alternatives except Alternative 4F would have more railroads crossed and bridges within 1 mile than the comparison portion of the Proposed Route.

#### ***Caribou-Targhee National Forest Crossed by Segment 4***

A portion of Segment 4 of the Proposed Route would cross through approximately 9.1 miles of the Cache NF managed by the Caribou-Targhee NF, approximately 1 mile north of two existing transmission lines. Representatives of the Caribou-Targhee NF and the Proponents conducted a joint reconnaissance to identify a preferred set of existing roads and minimum number of new or improved roads needed for construction. In the fall of 2012, the Forest Service identified Alternative 4G for a portion of this route that avoids steep slopes. The Proposed Route, with Alternative 4G, is the Forest's Preferred Route. The Preferred Route is approximately 0.3 mile longer than the Proposed Route.

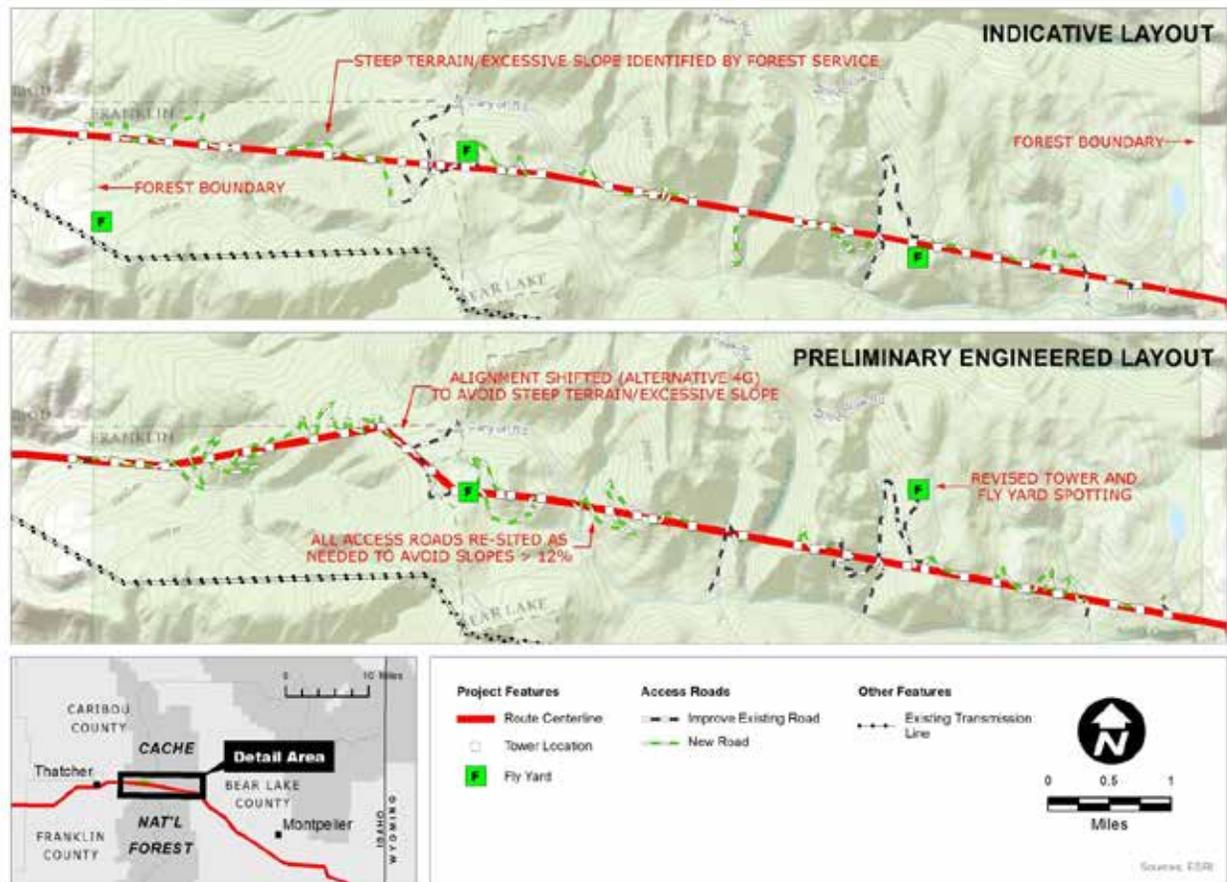
Both the Proposed Route and the Forest's Preferred Route would cross areas of the NF currently designated as 5.2 - Forest Vegetation Management, 2.7.2 (Elk and Deer Range), and 3.2 - Semi-Primitive Recreation. To be consistent with the Forest Plan, an amendment is proposed to designate a new corridor for the Preferred Route as Prescription 8.1 - Concentrated Development. The proposed corridor would be 9.1 miles long by 300 feet wide. The corridor and new access roads would have a ROS of RN. It is estimated that approximately 11.4 miles of new road would need to be built within the Caribou-Targhee NF along the Proposed Route (see the Travel Analysis prepared for the Project in the Analysis File; as well as Table 3.19-2). Design, construction, decommissioning, restoration, and maintenance of new roads on NFS lands would be performed under direction of the Forest Service. RMOs would be developed for each road on NFS land. The Montpelier Ranger District Motor Vehicle Use Map (developed as part the Caribou-Targhee NF Travel Management Plan) identifies three motorized trails (trails open to motorcycle use only) and six roads that are open to all vehicles along the Proposed Route on the Caribou-Targhee NF. Roads and trails not shown as open are closed to motor vehicle use. Most of the NFS land on the Caribou-Targhee NF that would be crossed by the Proposed Route is open for snowmobile use. However, the Proposed Route would cross an area closed to snowmobile use in Sections 2 and 3, Township 12 South Range 41 East. Any roads needed for the Project would be closed to the public and be gated or otherwise blocked. Portions of the existing road system are inadequate for supporting construction traffic and would require some rehabilitation.

The Forest Service soils assessment, which was completed in 2012, identified steep slopes and potentially unstable soils along a portion of the Proposed Route that crosses the Caribou-Targhee NF (i.e., in Sections 1 and 2, Township 12 South, Range 41 East). As a result, the Forest Service identified an alternative route that avoids these areas, as well as minimizes road grades above 12 percent (referred to as Alternative 4G). Alternative 4G is 2.6 miles long compared to 2.3 miles for the comparison portion of the Proposed Route (Figure 2.4-3 in Chapter 2). The Forest Service's Preferred Route for the portion of Segment 4 within the Caribou-Targhee NF is the Proposed Route with the inclusion of Alternative 4G. Table 3.19-2 lists the miles of new and improved roads associated with the portion of the Proposed Route that would be located on the Caribou-Targhee NF, Alternative 4G, as well as the portion of the Proposed Route that would be comparable to Alternative 4G.

**Table 3.19-2.** Miles of New and Improved Project-Related Roads on the Caribou-Targhee NF

Segment/Alternative	Existing Roads – Needs Improvement	New Roads	Total Road Miles
Proposed – on the Caribou NF	6.9	11.4	18.3
Proposed – Comparison Portion for Alternative 4G	2.0	2.8	4.8
Alternative 4G	1.3	5.7	6.9
Forest Service Preferred Route (including 4G) on the Caribou-Targhee NF	6.2	14.3	20.4

Figure 3.19-6 displays the roads associated with the Proposed Route as well as the Forest Service's Preferred Route along Segment 4 on the Caribou-Targhee NF. Some roads proposed for the Forest Service's Preferred Route (which includes Alternative 4G)



**Figure 3.19-6.** New Access Roads and Existing Roads Needing Improvement for the Proposed and Preferred Routes on the Portion of the Cache National Forest Managed by the Caribou-Targhee National Forest

contain roads with a grade that currently exceeds 12 percent. The following is a list of the roads that, as currently designed, exceed a 12 percent grade; however, these roads would be redesigned during the final Project design to maintain at least a 12 percent grade to the extent practical:

- Ahead of Structure 125 – slope of 12.4 percent (23 feet);
- North of Structure 130 – slope of 12.6 percent (100 feet);
- Access to Structure 135 – slope reaches 12.4 percent to 18.6 percent coming from existing Forest Service road. Alternative access to this structure location would require building a new road up the side of the mountain (300 feet greater than 16 percent, 100 feet at 12.4 percent);
- Ahead of Structure 145 – slope of 12.4 percent to 14.9 percent (100 feet at 12.4 percent, 200 feet at 13.6 percent, 100 feet at 14.9 percent);
- Ahead of structure 146 – slope of 12.2 percent at two locations for turning radii (100 feet each);
- Ahead of structure 147 – slope of 12.5 percent just before switch-back (100 feet);

- Ahead of Structure 148 – Slope of 12.4 percent for a turning radius (100 feet);
- Ahead of Structure 148 – Slope of 12.2 percent to 14.7 percent (200 feet less than 13 percent, 300 feet within 13 percent, 100 feet at 14.7 percent);
- Ahead of Structure 150 – Slope of 12.2 percent after first switch-back (100 feet);
- Ahead of Structure 150 – Slope of 12.9 percent after third switch-back (100 feet);
- Ahead of Structure 150A – Slope of 12.5 percent just for switch-back area (100 feet); and
- Near the North-East corner of Structure 153 work area – Slope of 12.1 percent (100 feet).

**Segment 5**

The preferred routes in Segment 5 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 5B and 5E <sup>1/</sup> (Figure A-7)	BLM
Proposed Route incorporating Alternatives 5C and 5E (Figure A-7)	Power County

1/ Assumes that Western Electricity Coordinating Council reliability issues associated with 5E are resolved.

Segment 5 would link the Populus and Borah Substations with a single-circuit 500-kV line that would be approximately 55.7 miles long. There are five Route Alternatives to portions of the Proposed Route in Segment 5. Alternatives 5A and 5B were proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternative 5C, which crosses the Fort Hall Indian Reservation, was proposed as the preferred route by Power County; however, the Fort Hall Business Council has voted not to permit the Project across the Reservation. Alternative 5D was originally the Proponents’ Proposed Route. Alternative 5E was proposed by Power County as an alternative approach to the Borah Substation. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 5B and 5E (with the assumption that reliability issues associated with Alternative 5E can be resolved). Figure A-7 in Appendix A shows the location of the Segment 5 routes.

For the Proposed Route, 51.8 miles of new road would be constructed and 63.1 miles of existing roads would be improved. In the valleys to either side of the Deep Creek Mountains, the Arbor Valley Highway to the east and SR 37 to the west would provide a backbone system to the Proposed Route and Route Alternatives. From these points, however, the approach to the ROW across the steep terrain and many drainages would mean that the ratio of existing road miles to transmission line miles would be low. Alternatives 5A, 5B, and 5C, and well as the Preferred Route, would increase the number of road crossings compared to the Proposed Route; Alternative 5D would not affect this number; and Alternative 5E would reduce the number of road crossings compared to the Proposed Route. The only alternative that would have an increase in the number of bridges impacted compared to the Proposed Route is 5D, by a single bridge. The biggest increase in roads crossed would be seen under Alternative 5B (which is part of the Preferred Route), with 21 more than the comparison portion of the Proposed Route. None of the alternatives would affect the number of railroads crossed. Based on infrastructure crossings, the Proposed Route would likely have the least impacts on transportation.

**Segment 6**

The BLM’s Preferred Route in Segment 6 is as follows:

Preferred Route	Agency
The proposal to upgrade the line voltage from 345-kV to 500-kV (Figure A-8)	BLM

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 0.25 mile from each substation to allow for moving the entry point into the substation to the new 500-kV bay. Changes at the Borah and Midpoint Substations would allow Segment 6 to be operated at 500 kV. Figure A-8 in Appendix A shows the Proposed Route for Segment 6.

The upgrading of these two substations is not expected to have substantial impacts on transportation infrastructure. No new roads would need to be constructed or existing roads improved. One road would be potentially impacted by Segment 6, and this route would not cross any railroads.

**Segment 7**

The preferred routes in Segment 7 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternatives 7B, 7C, 7D, and 7G (Figure A-9). The Proposed Route in the East Hills and Alternative 7G will be microsited to avoid Preliminary Priority Sage-grouse Habitat (PPH).	BLM
Alternative 7K (Figure A-9)	Power and Cassia Counties

Segment 7 would link the Populus Substation and the proposed Cedar Hill Substation with a single-circuit 500-kV line that would be approximately 118.2 miles long. Several alternatives to the Proposed Route are being considered. Alternatives 7A and 7B have been proposed by the BLM to avoid crossing the Deep Creek Mountains. Alternatives 7C, 7D, 7E, 7F, and 7G were proposed by local landowners to avoid private agricultural lands. Alternative 7K (also called the Goose Creek Alternative) was identified during the public comment period as a shorter alternative to the Proposed Route than either Alternatives 7I or 7J (refer to Chapter 2 of the Draft EIS for a description of these routes). The alignment for Alternative 7K was developed in cooperation with Cassia County. Alternatives 7H, 7I, and 7J, which were analyzed in the Draft EIS, are no longer under consideration. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternatives 7B, 7C, 7D, and 7G. The Segment 7 Preferred Route is 130.2 miles long, compared to 118.2 miles for the Proposed Route. Figure A-9 in Appendix A shows the location of the Segment 7 routes.

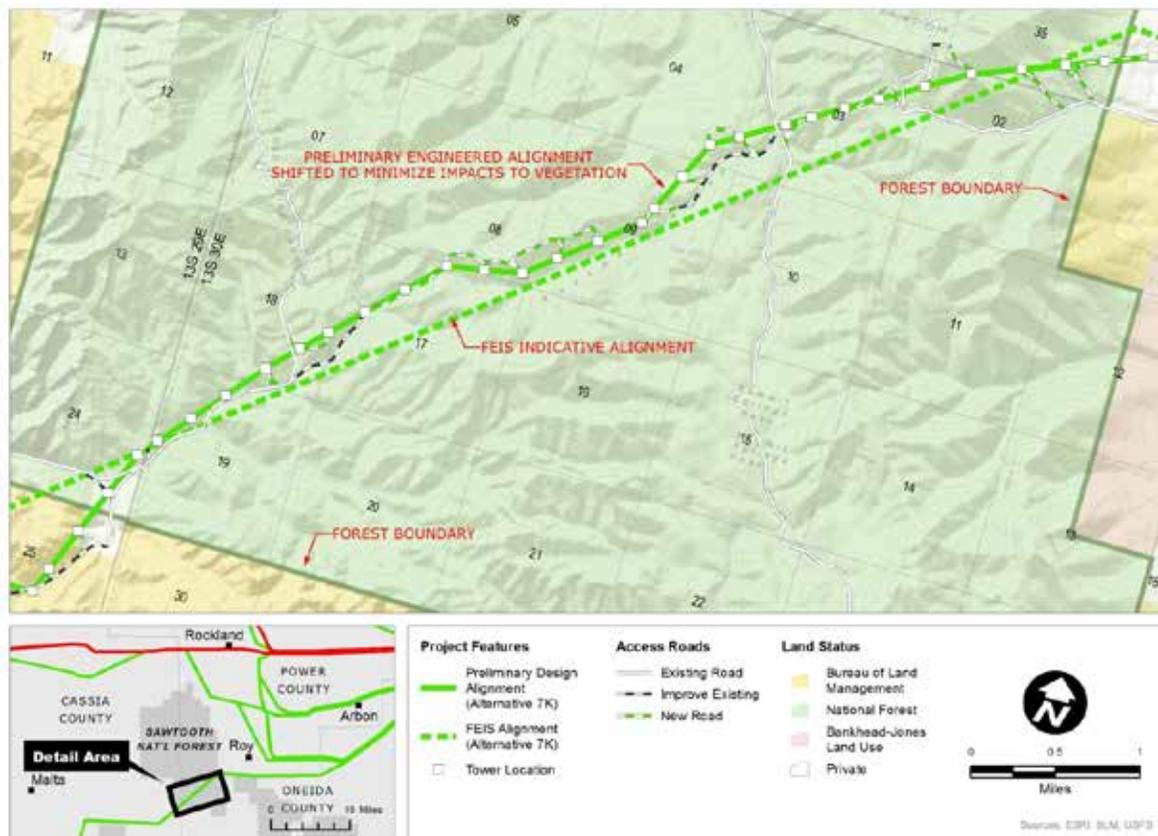
Alternatives 7A, 7B, 7C, and 7K (see Appendix A, Figure A-9) would be influenced by the access provided by the Arbor Valley Highway, SR 37, and I-84 and the steep terrain of the Deep Creek Mountains in a way similar to Segment 5. From Rockland going west, federal-, state-, and county-maintained roads would increase in frequency.

For the Proposed Route, 113.2 miles of new road would be constructed and 87.6 miles of existing roads would be improved. The Proposed Route, because it is shorter than

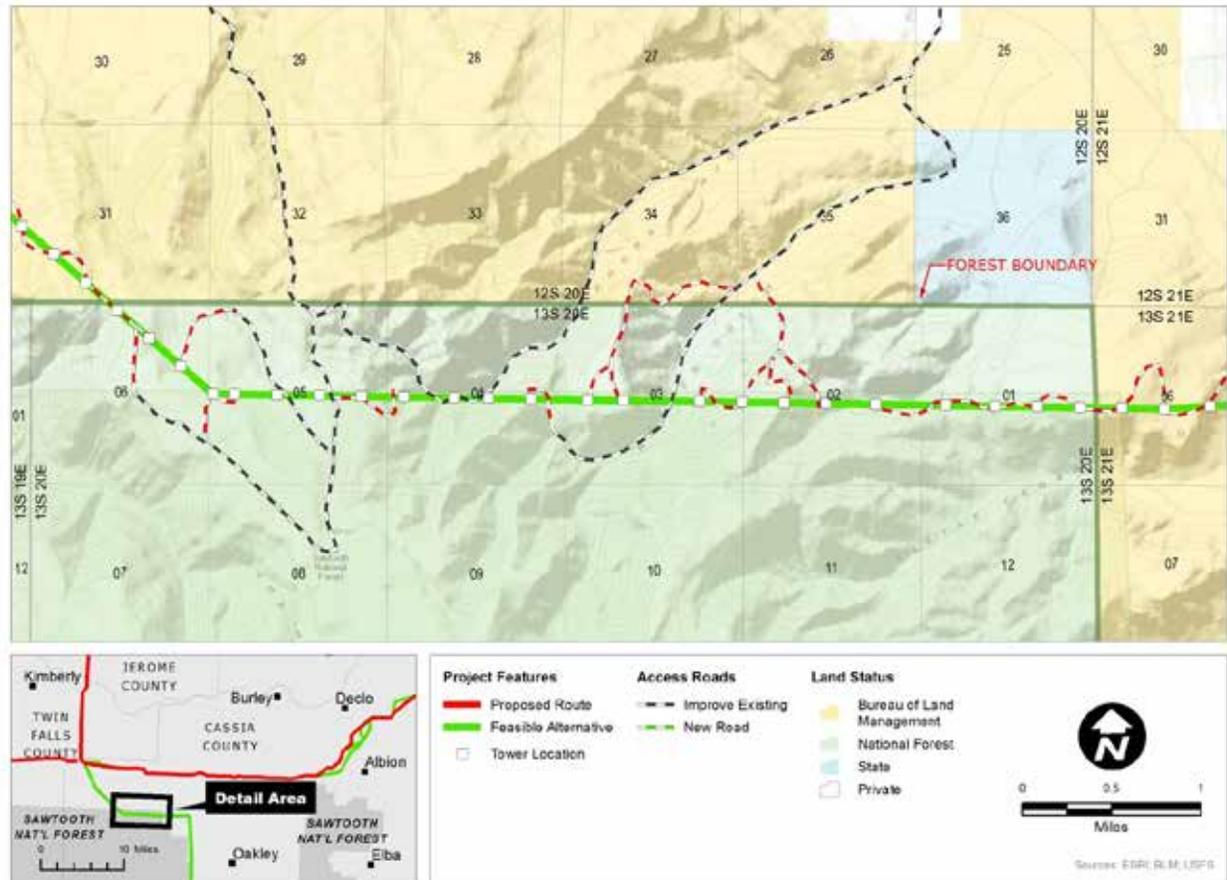
any of the alternatives, would have the least impact on the existing roads and bridges. The number of Interstate highways crossed would not vary by alternative. The number of other roads crossed would be greater under Alternatives 7A, 7B, 7D, 7E, 7G, and 7K, as well as the Preferred Route, than the comparison portion of the Proposed Route, whereas it would be less under Alternative 7F, with no change under Alternative 7C. The selection of Alternative 7K would avoid the one railroad crossing along the comparison portion of the Proposed Route. There would be fewer bridges within 1 mile with the selection of any of the alternatives than with the comparison portion of the Proposed Route, except for Alternative 7D, under which the number would not change. Alternative 7K is longer and would cross fewer existing roads than the comparison portion of the Proposed Route. Therefore, it would require more new access road construction and repair of existing roads than the other alternatives, and have a greater impact on existing infrastructure. To the extent possible, existing roads, including two-track roads, would be used to minimize the amount of disturbance.

**Sawtooth National Forest Crossed by Alternative 7K**

The Proposed Route would not cross the Sawtooth NF; however, Alternative 7K would. It is estimated that approximately 14.2 miles of new roads would need to be built on the Sawtooth NF, 7.8 miles on the Sublett Division and 6.4 on the Cassia Division, while 18.0 miles would need improvement, 10.3 miles on the Sublett Division (Figure 3.19-7) and 7.7 on the Cassia Division (Figure 3.19-8).



**Figure 3.19-7.** New Access Roads and Existing Roads Needing Improvement for Alternative 7K on the Sublett Division of the Sawtooth NF



**Figure 3.19-8.** New Access Roads and Existing Roads Needing Improvement for Alternative 7K on the Cassia Division of the Sawtooth NF

Approximately 3 miles of Alternative 7K would cross an area in the Cassia Division of the Sawtooth NF with an ROS of SPM. If Alternative 7K is approved, the ROS within 500 feet of the transmission line and new permanent roads would change to RN. If this alternative is approved, Forest Plan Guidelines [REQU08](#) and [REQU12](#) would not be met. The alternative would not have substantial effect on the ROS settings for the Cassia Division because the line would cross NFS land near the northern boundary of the Forest. This portion of the Forest has a VQO of Maximum Modification. Mitigation measures would be applied to minimize visual impacts. Project-related roads would be closed to public use; therefore, effects on public access would be short-term. Potential effects on recreation are discussed in Section 3.17 – Land Use and Recreation.

Design, construction, decommissioning, restoration, and maintenance of new roads would be performed under direction of the Forest Service. RMOs would be developed for each road on NFS land. The Minidoka Ranger District Motor Vehicle Use Map (developed as part the Sawtooth NF Travel Management Plan) identifies five roads that are open to all vehicles along Alternative 7K in the Sublette Division of the Sawtooth NF. Alternative 7K would also cross the northwestern portion of the Cassia Division. It would cross five roads open to motorized use (one of these would be crossed three times). None of these roads have seasonal restrictions. On all areas of the NF, roads

and trails not shown as open on the Motor Vehicle Use Map are closed to public motor vehicle use. All new roads needed for the Project would be closed to the public and would be gated or otherwise blocked.

**Segment 8**

The preferred routes in Segment 8 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 8B (Figure A-10)	BLM and IDANG

Segment 8 would link the Midpoint and Hemingway Substations. This 131.5-mile single-circuit 500-kV transmission line would stay north of the Snake River generally parallel to an existing 500-kV transmission line, before ending at the Hemingway Substation. There are five Route Alternatives to the Proposed Route. Alternative 8A follows the WWE corridor but crosses the Snake River and I-84 twice (while the Proposed Route would stay north of this area). Alternatives 8B and 8C were originally proposed by the Proponents as parts of the Proposed Route but were later dropped from the Proposed Route to avoid planned developments near the cities of Kuna and Mayfield, respectively. Alternative 8D would rebuild a portion of an existing 500-kV transmission line to move it away from the National Guard Maneuver Area. Alternative 8D would be constructed within the ROW currently occupied by the existing line. Alternative 8E was proposed by the BLM in order to avoid crossing the Halverson Bar non-motorized portion of a National Register Historic District (see the discussion of 8E under Segment 9). The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 8B and generally avoids the SRBOP as well as the Halverson Bar non-motorized area. The Segment 8 Preferred Route is 132.0 miles long, compared to 131.5 miles for the Proposed Route. Figure A-10 in Appendix A shows the location of the Segment 8 routes.

The Proposed Route, for most of its length along Segment 8, would follow a system of existing transmission lines that are intersected by existing roads. From MP 104.1 west, it would cross the OCTC for 8.8 miles and be adjacent to an existing transmission line.

For the Proposed Route, 112.7 miles of new road would be constructed and 98.7 miles of existing roads would be improved. Alternative 8A would cross one more Interstate highway than the comparison portion of the Proposed Route; none of the other alternatives would impact the number of Interstate highways crossed. Alternatives 8A, 8B (which is part of the Preferred Route), and 8C would slightly increase the number of other roads crossed; Alternative 8D would avoid three roads. Alternatives 8A and 8B (which is part of the Preferred Route) would each also add one railroad crossing to the number that would be crossed by the comparison portion of the Proposed Route. Alternative 8E would have more than twice the number of road crossings as the comparison portion of the Proposed Route. Alternatives 8A and 8B (which is part of the Preferred Route) would have more bridges within 1 mile than the comparison portion of the Proposed Route; the number would smaller under Alternative 8C and would not be affected by 8D. In terms of total crossings, Alternatives 8C or 8D would likely have the least impact on transportation infrastructure.

An amendment to the SRBOP RMP would be needed if the Proposed Route is selected to allow the Project to cross the Halverson Bar non-motorized area. The BLM has stated that this amendment would not be approved. As noted above, Alternative 8E and the Preferred Route with Alternative 8B would avoid crossing this area.

**Segment 9**

The preferred routes in Segment 9 are as follows:

Preferred Route	Agency
Proposed Route incorporating Alternative 9E, which was revised to avoid PPH and Murphy (Figure A-11)	BLM
Alternative 9D (Figure A-11)	Owyhee County

Segment 9 would link the Cedar Hill and Hemingway Substations with a 162.2-mile single-circuit 500-kV transmission line that 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 the Hemingway Substation. There are eight Route Alternatives proposed. Alternative 9A was the Proponents’ Proposed Route until that route was revised to avoid the Hollister area. Alternative 9B is being considered by the BLM because it follows the WWE corridor and parallels existing utility corridors. Alternative 9C was the Proponents’ Proposed Route until that route was revised to avoid the Castleford area. Alternatives 9D through 9G were proposed by the Owyhee County Task Force to reduce impacts to private land. Alternatives 9F and 9H were proposed to avoid crossing the non-motorized area south of C.J. Strike Reservoir and as an alternate route if Alternative 8E is selected. The BLM has identified a Preferred Route that includes portions of the Proposed Route with Alternative 9E. Figure A-11 in Appendix A shows the location of the Segment 9 routes. A portion of Alternative 9D/F uses the same path as Alternative 8E in Segment 8; therefore, 8E and 9D/F could not both be selected. Alternative 9E has been revised to avoid sage-grouse PPH and to incorporate a recommended route change submitted by Owyhee County that avoids a planned subdivision near Murphy. The Segment 9 Preferred Route is 171.4 miles long, compared to 162.2 miles for the Proposed Route.

Between the Cedar Hill Substation and Lilly Grade (see Figure A-11, Appendix A), portions of the Proposed Route and Route Alternatives 9A, most of 9B, and 9C would cross an area of well-developed and maintained section line roads that would provide good dispersed access to the transmission line routes. However, the Proposed Route and Route Alternatives west of this boundary to point 9n would be mostly on public land with fewer and less-developed roads. From point 9n to the Hemingway Substation, the Proposed Route would follow SR 78. From the highway there would be dispersed access from local roads to the ROW.

For the Proposed Route, 135.5 miles of new road would be constructed and 180.1 miles of existing roads would be improved. In terms of road crossings, Alternative 9A would have similar impacts as the comparison portion of the Proposed Route; Alternative 9B, on the other hand, would cross 22 more roads than the comparison portion of the Proposed Route. The number of bridges within 1 mile of the route would not be affected depending on which alternative is chosen, except for Alternatives 9D and 9E

(revised; which is part of the Preferred Route), which would add one and two bridges, respectively. Alternative 9D would rely on a good system of roads to the north and south of the Snake River and then be on public land and parallel to an existing transmission line until it would again cross the Snake River. Alternative 9E (revised; which is part of the Preferred Route) would parallel the Proposed Route, to its south and west. Primary access would still be from SR 78 but secondary access would concentrate on fewer existing roads, thereby increasing wear and tear, although only half the road crossings would be necessary. The Proposed Route would cross one railroad; this crossing would not be avoided by any of the Alternatives. Alternatives 9D and 9G would result in a similar number of road crossings as the comparison portion of the Proposed Route whereas Alternatives 9F and 9H would have 29 and 20 additional crossings, respectively. Alternative 9E (revised; which is part of the Preferred Route) would have nearly half as many road crossings as the comparison portion.

An amendment to the SRBOP RMP would be needed if either Alternative 9D or 9G is selected to allow the Project to cross the Cove non-motorized area, located south of the C.J. Strike Reservoir. The BLM has stated that this amendment would not be approved. As noted above, Alternatives 9F and 9H would avoid crossing this area. Amendments to the Jarbidge RMP and Twin Falls MFP would also be needed to allow the Proposed Route to cross the Salmon Falls ACEC, which does not allow motorized vehicles or surface disturbance. This route has been revised to cross below the Wild portion of the WSR eligible section of Salmon Falls Creek. The Proposed Route would instead cross a Scenic portion of the WSR eligible section.

**Segment 10**

The BLM’s Preferred Route in Segment 10 is as follows:

Preferred Route	Agency
Proposed Route (Figure A-12)	BLM

Segment 10 would link the Cedar Hill and Midpoint Substations with a 34.4-mile single-circuit 500-kV line. Segment 10 would follow a WWE corridor for most of the route. The Preferred/Proposed Route would also be adjacent to the existing 345-kV line most of this length and has been sited to follow the same alignment of the planned SWIP. Either the SWIP or Gateway West would be built, but not both. There are no Route Alternatives proposed along this segment. Figure A-12 in Appendix A shows the location of the Preferred/Proposed Route in Segment 10.

Table D.19-1 in Appendix D and Table 3.19-1 summarize the roads, railroads, and bridges within 1 mile of the Proposed Route of Segment 10. New roads that would be constructed would total 19.5 miles, and 23.3 miles of existing roads would be improved. Segment 10 would cross one Interstate highway, 66 other roads and highways, and 2 railroads. The ratio of miles of existing roads within 1 mile of the route and miles of transmission line route is 0.4. There are seven bridges within 1 mile of Segment 10.