

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 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.

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, Idaho, and Nevada; 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 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 use of private lands for these types of activities is legally limited by the landowner. Airports and landing strips are used for transportation of passengers and cargo and agricultural use.

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 to be Analyzed

Comments made during scoping for this Project (Tetra Tech 2009a) and by agency staff, and regulatory requirements were used to determine which transportation-related issues 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;
- How pipelines would be affected;
- Whether there would be an increase in off-highway vehicle use, and what the environmental impacts of this would be;
- Whether construction and operations of the Project would cut off access to any previously-accessible areas;
- How roads would affect livestock and grazing operations; and
- What the environmental effects of new temporary and permanent roads constructed for this Project would be.

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 accompanied by helicopter flight operations 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 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. If the alternative that crosses into Nevada is selected, the Nevada Department of Transportation's regulations would apply.

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. If the alternative that crosses into Nevada is selected, the Nevada Occupational Safety and Health (NRS 618.890 and 898) would apply.

County and Other Agencies

Counties and other public agencies typically require an encroachment permit, road use permits, or other appropriate "license" 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 coverage, 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 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 U.S. Highway 30. I-80 had about 5,000 to 7,000 vehicles per day on average in the vicinity of the Project in 2008, while Highway 30 had about 1,000 to 2,000 vehicles per day (WYDOT 2008). Major roads near the Project in Idaho include U.S. Highway 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 public airports and heliports (for hospitals) within 3 miles, and private airstrips within 1 mile, of the Proposed Route and Route Alternatives that could be affected by the construction and operation of the Project. Table 3.19-1 lists these.

Table 3.19-1. Public Airports, Landing Strips, and Heliports Within the Analysis Area

Segment	Facility Type	Facility Name	Facility Use
1E	Airport	Robbins	Private
	Airport	Ellis Ranch	Private
1W(a)	Airport	Ellis Ranch	Private
1W(c)	Airport	Ellis Ranch	Private
2	Airport	Ellis Ranch	Private
	Heliport	Memorial Hospital	Private
3	None	None	None
4	Airport	Downey/Hyde Memorial	Public
	Airport	Bear Lake County	Public
	Heliport	Bear Lake Memorial Hospital Helipad	Private
5	Airport	Downey/Hyde Memorial	Public
6	None	None	None
7	Airport	Downey/Hyde Memorial	Public

Table 3.19-1. Public Airports, Landing Strips, and Heliports Within the Analysis Area (continued)

Segment	Facility Type	Facility Name	Facility Use
8	Airport	Gooding Municipal	Public
	Ultralight	Oasis Strip	Private
9	Airport	Ez Lope Ranch	Private
	Airport	Murphy	Public
10	None	None	None

The Proposed Route for Segment 7 would be located 0.8 mile north of an airstrip proposed by Tugaw Ranches (see Figure 3.17-9 in Section 3.17 – Land Use and Recreation).

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. There is a Design Variation involving use of two single-circuit structures proposed by the Proponents for Segments 2, 3, and 4 (see Section 2.2 for details), which is analyzed below in Section 3.19.2.4, and a Structure Variation that is analyzed in Section 3.19.2.5. The Proponents have also proposed a Schedule Variation, analyzed in Section 3.19.2.6, in which one of the two single circuits in Segments 2, 3, 4; Segment 1W(c); and modifications of some substations would be built at a later time than the rest of the Project, between approximately 2017 and 2020.

Mitigation measures or 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 Proponent-proposed EPMs and Agency-required mitigation measures 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 are summarized in Table 2.2-1 of Chapter 2 and detailed in Appendices F and G. Proposed plan amendments that could directly impact transportation include the following:

- Medicine Bow Forest Plan: If Segment 1E is approved, Sections 13, 14, 23, and 24, T30N R78W, and the west halves of sections 18 and 19, T30N R77W would be allocated to MA 8.3 Utility Corridors and Electronic Sites. If Alternative Route 1E-C is selected instead of 1E, only Sections 13, 14, 23, and 24, T30N R78W would be allocated to MA 8.3 Utility Corridors and Electronic Sites.
- Caribou Forest Plan: Segment 4 - Designate a new corridor of Management Prescription 8.1 Concentrated Development Area. The corridor will be 9.2 miles long by 300 feet wide the area within 500 feet of the transmission line and new access roads will have an ROS of Roaded Natural.

- Kemmerer RMP: Segment 4 and alternatives- Mitigation measures included in proposed amendments require that "in specific sensitive areas (such as VRM class II, erosive soils, steep slopes, areas near NHT trails) the access road used for construction will be restored and an alternative access route for operations designated"
- Sawtooth Forest Plan: Alternative 7H and 7I - permit the crossing of Modification and Partial Retention VQOs by the Project as a one-time allowance without changing the management prescription and designate at least 500 feet on each side of the transmission line and along new permanent roads as Roded Natural.
- SRBOP RMP:
 - Segment 8 - permit the Project to cross Halverson Bar nonmotorized area (the BLM has stated they would not approve this amendment);
 - Alternatives 9D and 9G - permit the Project to cross Cove nonmotorized area (The BLM has stated they would not approve this amendment)

Segment 9 of the Proposed Route would not be in conformance with the Twin Falls MFP and Jarbidge RMP due to crossing of the Salmon Falls Creek ACEC, which restricts motorized vehicle access and the crossing of a WSR eligible segment of Salmon Falls Creek. No amendment was proposed because the BLM does not have the authority to change WSR management.

3.19.2.1 No Action Alternative

Under the No Action Alternative, the proposed Project would neither be constructed nor operated. No Project-related impacts on roads, airports, airstrips, or OHV use would occur.

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 staging areas. "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 979 miles of existing roads would be improved and 1,013 miles of new roads would be constructed for the Proposed Route (Table B-7 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, Section 1.5). 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.

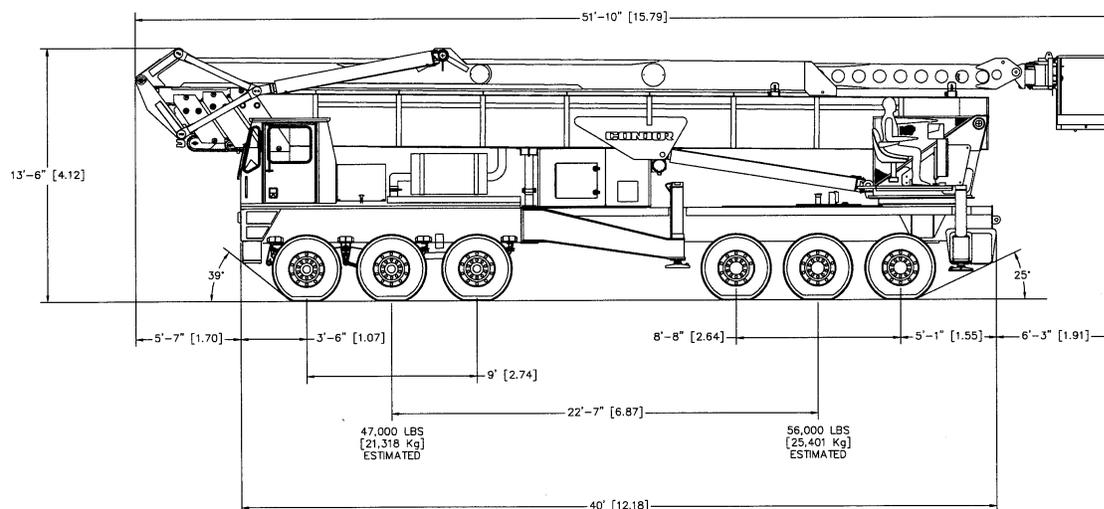
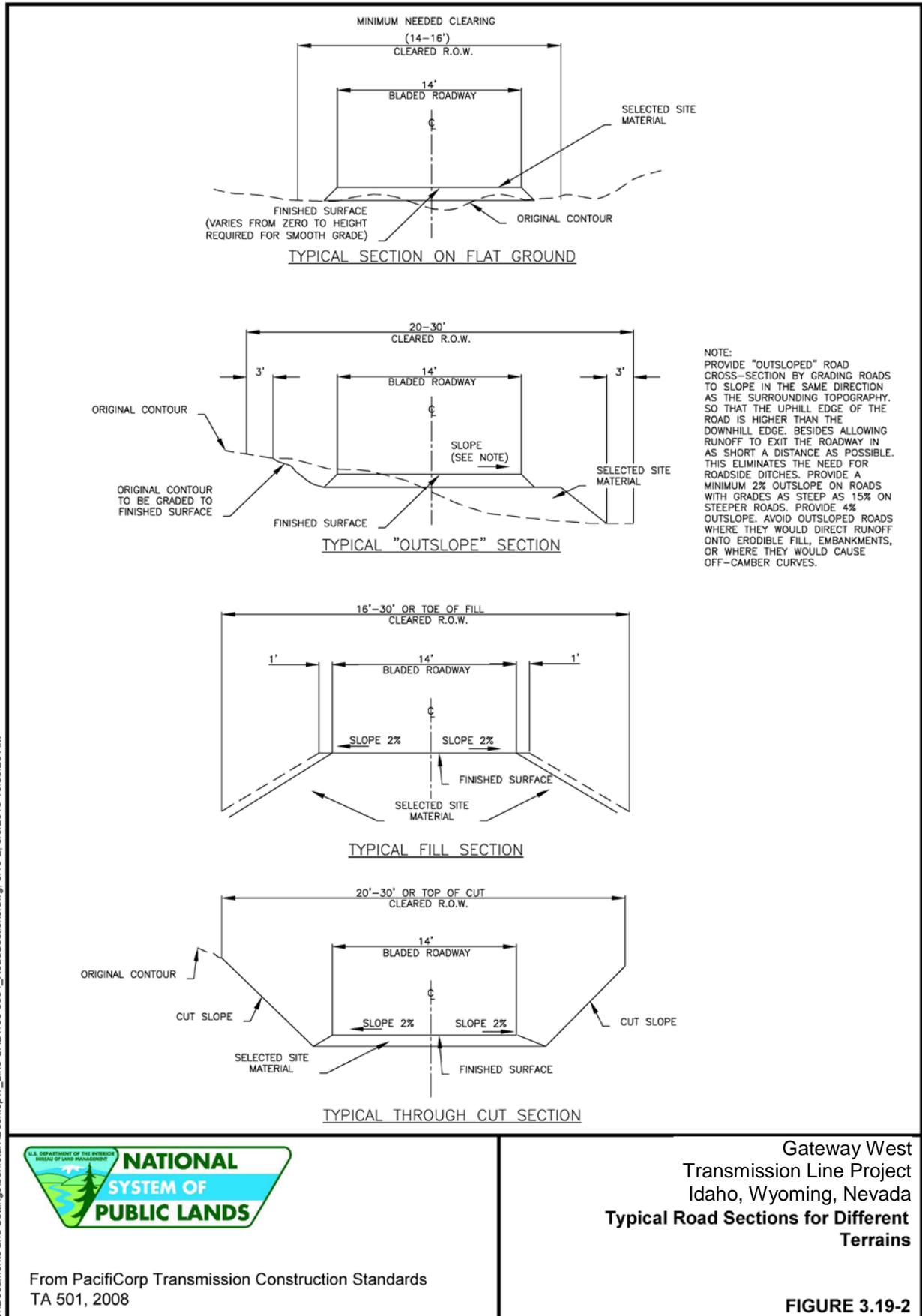


Figure 3.19-1. Condor 201S Aerial Lift Crane That Would Be Used During Construction Activities (roadable length 52 feet; width 8 feet 6 inches)

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 Proponents have proposed the following EPMs:

- TR-9 All temporary culverts and associated fill material will be removed from stream crossings after construction, and banks will be recontoured to their pre-disturbance conditions.
- TR-13 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



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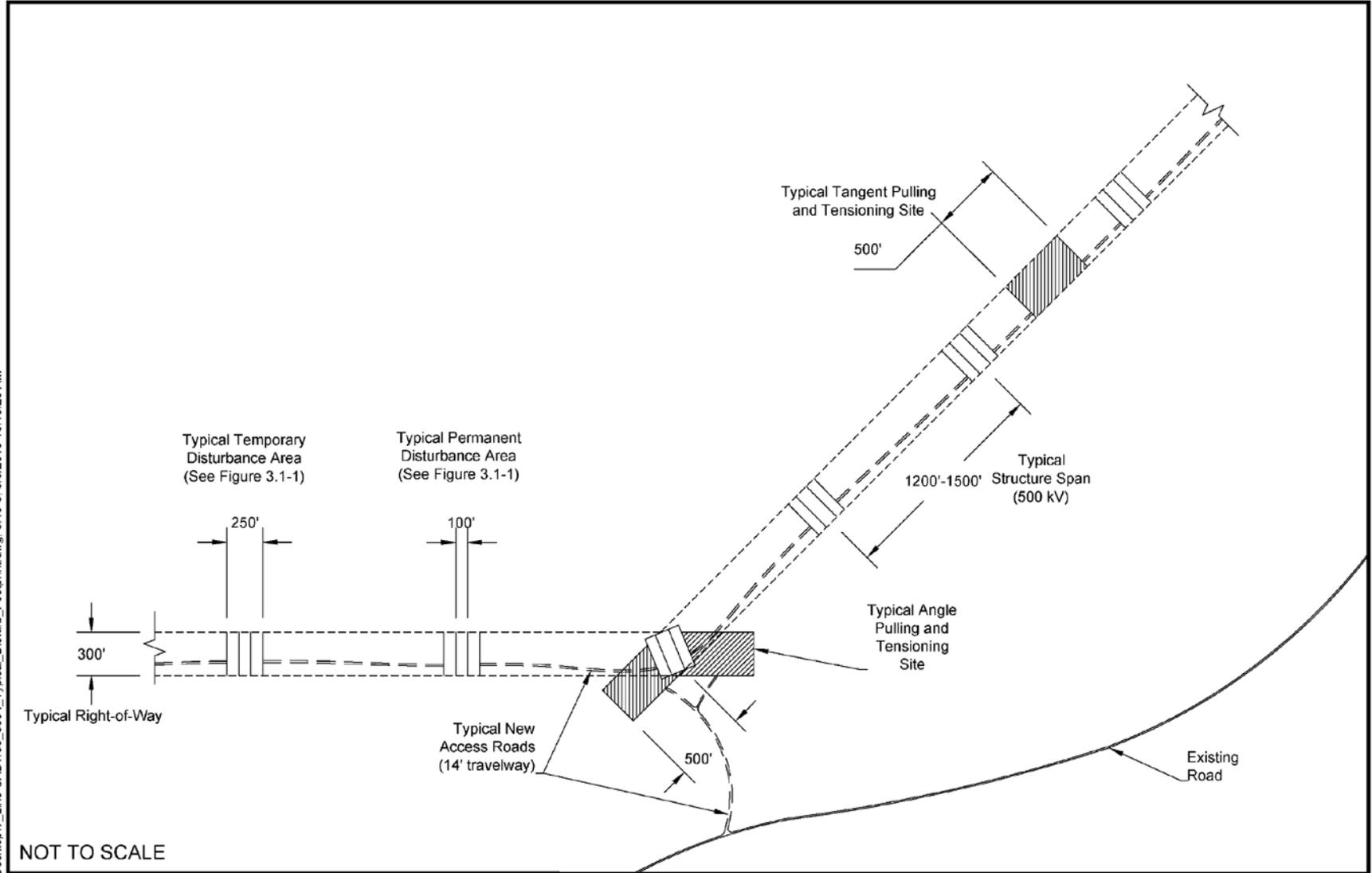


From PacifiCorp Transmission Construction Standards
TA 501, 2008

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

FIGURE 3.19-2

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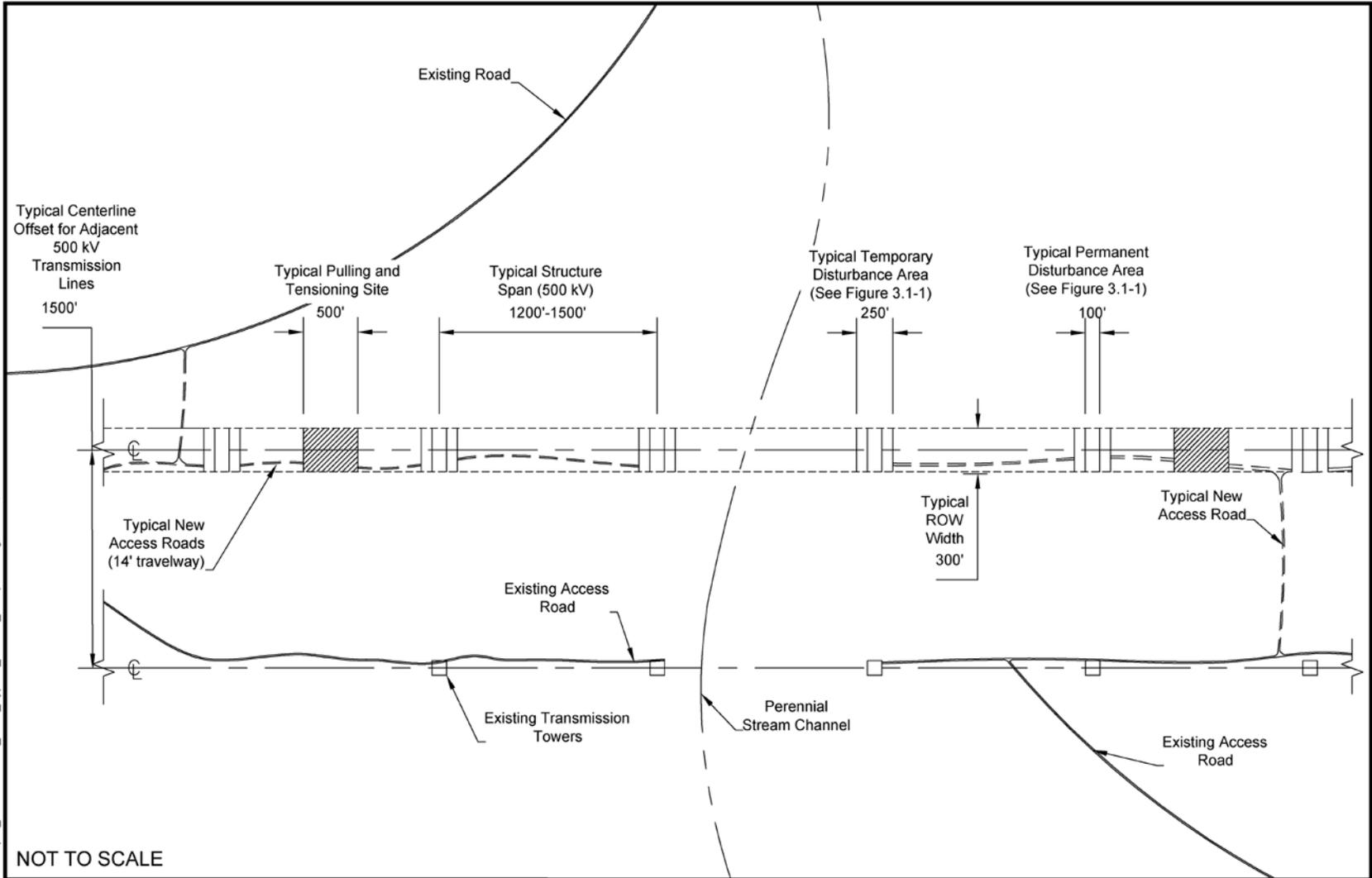


NOT TO SCALE



Gateway West Transmission Line Project
 Idaho, Wyoming, Nevada
Typical Disturbance Footprint
Double 500 kV Circuit with Pulling and Tensioning Sites
Greenfield Line

FIGURE 3.19-3



NOT TO SCALE



Gateway West
Transmission Line Project
Idaho, Wyoming, Nevada
Typical Disturbance Footprint
Double 500 kV Circuit with Pulling and Tensioning Sites
Parallel Existing Transmission Line

FIGURE 3.19-4

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 Proponents have proposed the following EPMs:

- TR-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 this attachment (Attachment A of Appendix C-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.
- TR-3 If the Project proposes to obtain water from wells or surface water sources to suppress dust, written approval from the landowner or regulatory agency will be obtained prior to appropriation.

To minimize impacts to traffic loads and access issues on roads used by Project staff, the Proponents have proposed the following EPMs:

- TR-5 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.
- TR-6 To reduce traffic congestion and roadside parking hazards, an equipment yard will be provided for primary parking for employee personal vehicles.
- TR-10 Landowners will be notified at least 48 hours prior to the start of construction within 0.25 mile of a residence.
- TR-12 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.

These EPMs only address roads near residences and existing roads and do not address either trying to use two-track trails instead of constructing new roads or how temporary roads would be constructed. Therefore, the Agencies have identified the following mitigation measures and the Proponents have adopted these measures and agreed to apply them when the land management agency or landowner requests it.

- TRANS-1 The Proponents will attempt to identify existing two-track trails as preferred temporary access roads for construction.
- TRANS-2 Temporary roads will be designed so proper drainage is not impaired and will be built to minimize soil erosion on or near the temporary roads. Consult with appropriate Agencies on additional design measures.
- TRANS-3 Permanent and temporary roads on NFS lands and BLM-administered lands will be consistent with appropriate National Forest and BLM Transportation Management Plans, as amended, and other applicable rules. Permanent roads built for the Project on NFS lands and BLM-administered lands shall be closed to the public. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage shall be maintained and replaced as part of the routine maintenance. Proponents will monitor permanent roads on NFS land and BLM-administered lands yearly, and the applicable land-managing agency shall be provided with annual monitoring reports. Roads will be maintained as required by the Special Use Permit.

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 Proponents developed the following EPMs to address these conditions:

- TR-4 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.
- TR-11 Emergency vehicle access to private property will be maintained.

Construction or expansion of the nine 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-15 in Appendix B, Section 2.6.2, 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 Management Plan (TR-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 Proponents have identified the following EPM:

TR-8 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. The Proposed Route would be located 0.8 mile north of an airstrip proposed by Tugaw Ranches, along Segment 7. To minimize potential impacts to this airstrip, the Proponents have proposed mitigation measure LU-8 (see Section 3.17 – Land Use and Recreation).

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 Appendix C-2 (Framework Reclamation Plan for Construction Activities). Roads used during construction and not needed during

operations would be decommissioned and revegetated, as required by the land management agency. The Proponents have included the following EPM in Appendix C-1 to specifically address closure of temporary construction roads.

- TR-14 Roads developed specifically for this project that are identified by the Proponents as no longer necessary will be reclaimed as specified in the Reclamation, Revegetation, and Weed Management Plan.

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 (TR-4 and TR-11) 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' Revised Plan for Operations, Maintenance, and Emergency Response that is presented in full in Appendix C-4.

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 detail in Section 3.17 – Land Use and Recreation.

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 TR-14.

While the Proponents' intent is to reclaim all roads used for construction and operations of the Project following decommissioning, this EPM (i.e., TR-14) does not recognize that some of these roads may have become important or convenient for other uses.

Therefore, the Agencies have identified the following mitigation measure and the Proponents have agreed to adopt it where requested projectwide:

TRANS-4 Upon abandonment, temporary access roads 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 Proposed Route and Alternatives by Segment

Table 3.19-2 lists the number of highways, roads, and railroads crossed by the 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 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 3.19-2 and by segment.

Table 3.19-2. Transportation Facilities Crossed by Route Alternatives Compared to Proposed Route

Segment Number	Segment/Alternative	Segment Length (Miles) ^{1/}	Interstate Highway Crossings	Other Highway / Road Crossings	Railroad Crossings
1E	Proposed – Total Length	100.6	1	102	2
	Proposed – Comparison Portion for Alternative 1E-A	17.6	1	26	2
	Alternative 1E-A	16.1	1	17	2
	Proposed – Comparison Portion for Alternative 1E-B	37.9	–	32	1
	Alternative 1E-B	59.3	–	50	1
	Proposed – Comparison Portion for Alternative 1E-C	75.4	–	67	1
	Alternative 1E-C	48.7	–	41	1
1W(a)	Proposed – Total Length	76.5	1	76	2
	Alternative 1W-A	20.3	1	27	2
	Proposed – Comparison Portion for Alternative 1W-A	16.2	1	25	2
1W(c)	Proposed – Total Length	70.6	1	75	1
2	Proposed – Total Length	96.7	1	99	4
	Proposed – Comparison Portion for Alternative 2A	28.8	1	30	2
	Alternative 2A	28.4	1	38	4
	Proposed – Comparison Portion for Alternative 2B	7.0	1	5	–
	Alternative 2B	6.2	1	8	–
	Proposed – Comparison Portion for Alternative 2C	28.4	–	42	2
	Alternative 2C	24.4	–	39	3
3	Proposed – Total Length	46.6	1	29	2
	Proposed – Total Length	4.3	–	4	1
	Proposed – Total Length	5.5	–	3	1
4	Proposed – Total Length	203.0	–	163	7
	Proposed – Comparison Portion for Alternatives 4A,B,C,D,E	90.2	–	92	3
	Alternative 4A	85.2	–	76	5
	Alternative 4B	100.2	–	106	6
	Alternative 4C	101.6	–	88	7
	Alternative 4D	100.8	–	101	6
	Alternative 4E	102.2	–	83	7
	Alternative 4F	87.5	–	71	4
5	Proposed – Total Length	54.6	2	45	1
	Proposed – Comparison Portion for Alternatives 5A,B	25.3	–	11	1
	Alternative 5A	33.7	–	19	1
	Alternative 5B	44.4	–	34	1
	Proposed – Comparison Portion for Alternative 5C	33.2	–	19	1
	Alternative 5C	26.1	–	22	1
	Proposed – Comparison Portion for Alternative 5D	19.4	1	21	1
	Alternative 5D	17.5	1	22	1
	Proposed – Comparison Portion for Alternative 5E	5.8	1	11	1
Alternative 5E	5.3	1	11	1	
6	Proposed – Total Length	0.5	–	1	1
7	Proposed – Total Length	118.1	2	112	1
	Proposed – Comparison Portion for Alternatives 7A,B	35.2	–	21	1
	Alternative 7A	38.0	–	25	1
	Alternative 7B	46.4	–	39	1
	Proposed – Comparison Portion for Alternative 7C	20.1	–	17	1
	Alternative 7C	20.3	–	17	1
	Proposed – Comparison Portion for Alternative 7D	6.2	1	11	1

Table 3.19-2. Transportation Facilities Crossed by Route Alternatives Compared to Proposed Route (continued)

Segment Number	Segment/Alternative	Segment Length (Miles) ^{1/}	Interstate Highway Crossings	Other Highway / Road Crossings	Railroad Crossings
7	Alternative 7D	6.8	1	13	1
	Proposed – Comparison Portion for Alternative 7E	3.8	–	3	1
	Alternative 7E	4.5	–	4	1
	Proposed – Comparison Portion for Alternative 7F	10.5	–	9	1
	Alternative 7F	10.8	–	7	1
	Proposed – Comparison Portion for Alternative 7G	3.1	–	1	1
	Alternative 7G	3.2	–	4	1
	Proposed – Comparison Portion for Alternatives 7H,I,J	118.1	2	112	1
	Alternative 7H	127.5	2	119	1
	Alternative 7I	173.4	2	141	1
	Proposed– Comparison Portion 7/9 for Alternative 7J ^{2/}	143.9	2	156	2
Alternative 7J ^{2/}	202.1	2	166	1	
8	Proposed – Total Length	131.0	1	160	3
	Proposed – Comparison Portion for Alternative 8A	51.4	–	55	1
	Alternative 8A	53.6	2	60	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	1
	Alternative 8C	6.4	1	7	1
	Proposed – Comparison Portion for Alternative 8D	6.9	–	12	1
	Alternative 8D	8.1	–	9	1
	Proposed – Comparison Portion for Alternative 8E	7.0	–	13	–
	Alternative 8E	18.5	–	30	–
9	Proposed – Total Length	161.7	–	217	1
	Proposed – Comparison Portion for Alternative 9A	7.8	–	12	1
	Alternative 9A	7.7	–	13	1
	Proposed – Comparison Portion for Alternative 9B	49.5	–	58	1
	Alternative 9B	53.2	–	81	1
	Proposed – Comparison Portion for Alternative 9C	14.7	–	18	1
	Alternative 9C	15.3	–	30	1
	Proposed – Comparison Portion for Alternatives 9D, E, F, G, and H	57.2	–	88	1
	Alternative 9D	58.4	–	91	1
	Alternative 9E	68.7	–	44	1
	Alternative 9F	62.9	–	120	–
Alternative 9G	56.4	–	84	–	
Alternative 9H	61.0	–	112	–	
10	Proposed – Total Length	33.6	–	66	2

1/ Mileages are rounded to nearest tenth.

2/ 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.

Segment 1E

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 the Segment 1W 230-kV lines into the Aeolus Substation (see Appendix A, Figure A-2). This route and the alternatives traverse sparsely settled land with few roads and bridges. Alternatives 1E-A and 1E-C follow the route of 1W and could therefore use the same existing infrastructure.

For the Proposed Route, 104.3 miles of new road would be constructed and 124.9 miles of existing road would be improved. Within 1 mile to either side of the Proposed Route, there are 50.8 miles of roads and 14 bridges that would potentially serve as access points to reach the ROW (Table D.19-1, Appendix D). This equates to a 0.4 road mile per mile of transmission line. Existing infrastructure to support construction is fair. In order to develop the Aeolus Substation and move the necessary station equipment to the site, CR 121, a single-lane road about 20 feet wide and about 11 miles long from SR 30 to the Aeolus Substation, would need to be upgraded. In addition the existing metal deck bridge (see Figure 2.5-2) would need to be replaced. The improvements would result in approximately 64 acres of construction disturbance and 33 acres of new permanent roadway. Alternative 1E-A would have almost half of the miles of roads within 1 mile of the centerline as the comparison portion of the Proposed Route (i.e., the portion of the Proposed Route that starts and ends at the same nodes as the Route Alternative), though the road density would stay at 0.4. Alternatives 1E-B and 1E-C would both lie near a greater number of existing roads than the comparison portion of the Proposed Route and have road densities of 0.4 and 0.7 miles of road per mile of transmission line, respectively. Alternative 1E-A would result in fewer road crossings and bridges within 1 mile than the comparison portion of the Proposed Route or the other two alternatives. Alternative 1E-C would avoid one bridge, while Alternative 1E-B would be within 1 mile of two additional bridges.

Segment 1W

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 Heward Substation and 17 acres of the expansion at the Windstar and Aeolus Substations are attributed to Segment 1W(c).

A good system of roads exists in the northern half of Segments 1W(a) and 1W(c) of the Proposed Routes. There are few roads in the southern half of the routes. For

Segment 1W(a), 68.9 miles of new road would be constructed and 66.7 miles of existing road would be improved. For Segment 1W(c), 56.3 miles of new road would be built, and 42.8 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. Within 1 mile of Proposed Route 1W(a), there are 39.6 miles of existing roads, which equates to 0.5 road mile per mile of transmission line route. Alternative 1W-A would cross fewer roads than the comparison portion of the Proposed Route. The amount of roads within 1 mile would increase by 6.3 miles and the road density would increase to 0.6 mile of road per mile of transmission line. Alternative 1W-A would lie within 1 mile of six more bridges than the comparison portion of the Proposed Route. Proposed Route 1W(c) would have 0.6 mile of road per road of transmission line route.

Medicine Bow-Routt NFs

Segments 1W(a) and 1W(c) cross the Medicine Bow-Routt NFs in Management 3.31 (backcountry) where new high standard roads would be inconsistent with Forest Plan direction. The Forest Plan reads: "Management Prescription 3.31: Allow uses and activities only if they do not degrade the primitive character of the area." The Gateway West Project would need to construct approximately 4.1 miles of new access roads for construction and operations within this land use designation. A plan amendment has been proposed for these segments to make the Project consistent with the Forest Plan (see Appendix F). The requested amendment is: "The Gateway West transmission line will be allowed and the land crossed by the Project will be allocated to MA 8.3 Roded Natural." Impacts to transportation infrastructure if this amendment is accepted could include additional roads being built if more Projects are approved. This would allow increased access to previously less accessible areas. 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, and Sections 18 and 19, Township 30 North Range 77 West, are closed to public access. Any additional roads needed for the Project would also be closed to the public.

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).

The Proposed Route would generally follow I-25 and U.S. Highway 30; therefore, primary access near the Proposed Route would be good. For the Proposed Route, 93.2 miles of new road would be constructed, and 114.3 miles of existing roads would be improved. There are 45.7 miles of roads within 1 mile to either side of the 96.7-mile Proposed Route amounting to about 0.4 road mile per mile of transmission line route. Alternatives 2A and 2B are closer to infrastructure than the comparison portions of the Proposed Route. Alternative 2C crosses open country with few developments and only two-track roads as transportation infrastructure. Access to this alternative would not be good and congestion is likely. Alternatives 2A and 2B would cross more roads than the comparison portion of the Proposed Route whereas Alternative 2C would cross fewer. Alternatives 2A and 2C would increase the number of railroad crossings. Selection of any of the three alternatives would result in fewer bridges within 1 mile than the comparison portion of the Proposed Route. Alternatives 2A and 2C would decrease the miles of road per miles of transmission line to 0.3 and 0.2, respectively, while the road density for Alternative 2B would not be appreciably different from the comparison portion of the Proposed Route. In terms of transportation infrastructure, the Proposed Route and Route Alternatives would have very similar impacts.

Segment 3

Segment 3, as proposed, links the Creston, Anticline, and Jim Bridger 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).

As in Segment 2, the Proposed Route also would follow the I-25 and U.S. Highway 30 corridors. For the Proposed Route, 59.2 miles of new road would be constructed and 31.5 miles of existing roads would be improved. There would be 68.8 miles of roads within 1 mile to either side of the 56.5-mile Proposed Route amounting to about 0.9 road mile per mile of transmission line route. 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. 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

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).

For the Proposed Route, 199.8 miles of new road would be constructed and 172.5 miles of existing roads would be improved. The density of miles of existing road per mile of transmission line for the Proposed Route is 0.5. There would be few existing public roads within the 1-mile corridor followed by the eastern segment of the 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 six Route Alternatives for Segment 4. Alternatives 4A and 4F are shorter than the comparison portion of the Proposed Route, and each would have fewer road crossings than the Proposed Route and fewer miles of existing roads. Alternative 4F would have the least number of road crossings and therefore would likely require the fewest road closures or restrictions and similar interferences. Alternatives 4C and 4E also would have fewer road crossings than the comparison portion of the Proposed Route, whereas Alternatives 4B and 4D would have more. All six alternatives would have more railroads crossed and bridges within 1 mile than the comparison portion of the Proposed Route. None of the alternatives would have an appreciably different road density than the comparison portion of the Proposed Route, all having 0.4 to 0.5 mile of existing roads per mile of transmission line.

Mitigation measures included in amendments to the Kemmerer RMP require road reclamation after construction in certain areas. "In specific sensitive areas (such as VRM class II, erosive soils, steep slopes, areas near NHT trails) the access road used for construction will be restored and an alternative access route for operations designated" (Appendix F-1).

Caribou-Targhee NF

A portion of Segment 4 of the Proposed Route would cross approximately 9.2 miles through the Montpelier District of the Caribou-Targhee NF where it parallels two existing transmission lines. However, these lines are, on average, approximately 1 mile (0.3 mile to 1.2 miles) south of the Proposed Route. 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

The Proposed 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 Proposed Route as Prescription 8.1 - Concentrated Development. The proposed corridor would be 9.2 miles long by 300 feet wide. The corridor and new access roads would have an ROS of RN. It is estimated that approximately 11.9 miles of new road would need to be built within the Caribou-Targhee NF (see the Travel Analysis prepared for the Project in the Analysis File). 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.

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).

For the Proposed Route, 54.6 miles of new road would be constructed and 66.5 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. The road density for the Proposed Route is 0.2 mile per mile of transmission line route. The selection of Alternative 5D would decrease the road density to 0.1, less than the comparison portion of the Proposed Route; none of the other alternatives would have a different road density than their comparison portions of the Proposed Route. All alternatives would increase the number of road crossings, except for Alternative 5E, which would not affect this number. The only alternative that would have an increase in the number of bridges impacted compared to the Proposed Route is 5D, by two bridges.

The biggest increase in roads crossed would be seen under Alternative 5B, with 23 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

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. 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).

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. Because this segment is only 0.5 mile long, the density of road miles per miles of transmission line route is high (2.9). One road would be potentially impacted by Segment 6, and this route would not cross any railways.

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 local landowners 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 local landowners, would not terminate at the 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 the 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.

Alternatives 7A, 7B, 7C, 7H, 7I, and 7J (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, 108.6 miles of new road would be constructed and 61.7 miles of existing roads would be improved. The Proposed Route, because it is shorter than all of the alternatives, would have the least impact on the existing roads and bridges. The density of road miles per miles of transmission line along the Proposed Route is 0.2; the density among the alternatives would not change appreciably from this, all ranging from 0.1 to 0.2. 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, 7H, and 7I than the comparison portion of the Proposed Route, whereas it would be less under Alternative 7F. The selection of Alternatives 7H, 7I, or 7J 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. Alternatives 7H, 7I, and 7J are longer and would have a lower frequency of existing roads than the comparison portion of the Proposed Route. Therefore, they 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 type roads, would be used to minimize the amount of disturbance.

Sawtooth NF

The Proposed Route would not cross the Sawtooth NF; however, Alternatives 7H, 7I, and 7J would. It is estimated that approximately 11.5 miles of new roads would need to be built on the Sawtooth NF under Alternative 7H, 30.2 miles under Alternative 7I, and 15.7 under Alternative 7J (see the Travel Analysis prepared for the Project in the administrative record). The construction of roads on NFS lands associated with Alternatives 7H, 7I, and 7J are inconsistent with Forest Plan direction, which specifies that in order to meet VQOs there “should be minimal distraction from scenic quality,” including from road construction and reconstruction. To make this Project consistent with the Forest Plan, an amendment would be requested that would allow new construction in areas designated as Partial Retention; additionally an amendment would be proposed to change the ROS to RN 500 feet to either side of the transmission line and new permanent roads. 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.

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 Alternatives 7H, 7I, and 7J in the Sublette Division of the Sawtooth NF. Alternative 7H would also cross the Albion Mountain Division of the Sawtooth NF. It would generally follow Forest Road 548, which is open to all motor vehicles. Some new road construction would be needed in Sections 6 and 12, Township 14 South, Range 23 East. Alternatives 7I and 7J would not cross the Albion Mountain Division but would cross the western portion of the Cassia Division. They would cross many roads open to motorized use, some of which have seasonal restrictions, especially in the northwestern portion of the Division (Alternative 7I). 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

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 Historical District (see Appendix A, Figure A-10).

The Proposed Route, for most of its length along Segment 8 between points 8 and 8q (see Figure A-10, Appendix A), would follow a system of existing transmission lines that are intersected by existing roads. From point 8q west, it would cross the Orchard Training Area and be adjacent to an existing transmission line.

For the Proposed Route, 113.3 miles of new road would be constructed and 95.3 miles of existing roads would be improved. The Proposed Route and Alternatives 8A and 8B would have a ratio of miles of existing roads to miles of transmission line route of 0.2; Alternative 8C would have a road density of 0.1. Alternative 8A would cross two more Interstate highways than the comparison portion of the Proposed Route; none of the other alternatives would impact the number of Interstate highways crossed. Alternatives 8A, 8B, and 8C would slightly increase the number of other roads crossed; Alternative 8D would avoid three roads. Alternatives 8A and 8B 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 would have more bridges within 1 mile than the comparison portion of the Proposed Route; the number would less 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 nonmotorized area. The BLM has stated that this amendment would not be approved. As noted above, Alternative 8E would avoid crossing this area.

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 Taskforce, 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, 9G, 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).

Between the Cedar Hill Substation and Salmon Fall Creek (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 well-developed roads. From point 9n to the Hemingway Substation, the Proposed Route would parallel SR 78. From the highway there would be dispersed access from local roads to the ROW.

For the Proposed Route, 135.3 miles of new road would be constructed and 179.8 miles of existing roads would be improved. The road density of the Proposed Route would be 0.2 mile of existing road per mile of transmission line. 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 23 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, 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 would parallel the Proposed Route about 4 miles 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 only be avoided if Alternative 9F, 9G, or 9H is selected. Alternatives 9D and 9G would result in approximately a similar number of road crossings as the comparison portion of the Proposed Route whereas Alternatives 9F and 9H would have 32 and 24 additional crossings, respectively. Alternative 9E would have 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 nonmotorized area, a nonmotorized area 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; however, the BLM could not approve an amendment for this portion of the route at this time because it also crosses a WSR eligible section of Salmon Falls Creek. This crossing could not be allowed unless the section of river was determined to be unsuitable for WSR designation (see Appendix F-1), at which time an amendment to the Salmon Falls Creek ACEC could be proposed for review. The BLM has indicated this amendment would not be approved. The Proposed Route crossing of Salmon Falls Creek would cross a WSR eligible section. This crossing could not be allowed unless the section of river was determined to be unsuitable for WSR designation (see Appendix F-1), at which time an amendment to the Salmon Falls Creek ACEC could be proposed for review.

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).

Table D.19-1 in Appendix D and Table 3.19-2 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 1 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.

3.19.2.4 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.

Impacts from the Design Variation would be the same as those from the Proposed Action for all transportation issues except airports and airstrips. Helicopters would not be used during construction under the Proposed Action because the double-circuit tower components are too heavy to airlift; however, helicopters may be used during construction of the Design Variation single-circuit towers. This could affect nearby airports and airstrips as they would create an additional aerial hazard between fly yards and erection sites. Table 3.19-1 indicates airports and airstrips within 3 miles of

Segments 2, 3, and 4 and their Route Alternatives. Helicopter operations would be conducted per FAA regulations and nearby airports would be notified of the activity, as required.

3.19.2.5 Structure Variation

The proposed guyed structure variation would add four guy wires about 140 feet long from a point about 100 feet up in each tower to four guy anchors spaced in a square around the tower (Appendix B, Figure B-6). There is no appreciable difference in impact on transportation infrastructure from the use of this Structure Variation when compared to the use of self-supporting lattice towers, given that the guyed structures would not be used adjacent to public roads or in agricultural or rural residential areas.

3.19.2.6 Schedule Variation

The Schedule Variation uses the two single-circuit design variation described above but extends construction over a longer time frame. 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 a ROW grant is issued, but that construction of the second line would not begin until late 2018. This would mean nearly 2 years between the end of construction for the first line and the 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. The Schedule Variation would therefore have essentially double the adverse impacts on transportation infrastructure as the Proposed Action, including traffic loads, wear and tear on roads, and interference with emergency access..

3.19.3 Mitigation Measures

To minimize or avoid impacts on transportation, the Proponents have committed to EPMS that would be implemented Project-wide, as outlined in this section (identified above) and in Appendix C.

The following mitigation measures identified by the Agencies are required on federally managed lands, and the Proponents have committed to incorporating the measures into their EPMS and applying them Project-wide:

- TRANS-1 The Proponents will attempt to identify existing two-track trails as preferred temporary access roads for construction.
- TRANS-2 Temporary roads will be designed so proper drainage is not impaired and will be built to minimize soil erosion on or near the temporary roads. Consult with appropriate Agencies on additional design measures.
- TRANS-3 Permanent and temporary roads on NFS lands and BLM-administered lands will be consistent with appropriate National Forest and BLM Transportation Management Plans, as amended, and other applicable rules. Permanent roads built for the Project on NFS lands and BLM-

administered lands shall be closed to the public. Signs shall indicate the restriction or regulation, location, penalty for violation, and appropriate contact information for reporting violations. Signage shall be maintained and replaced as part of the routine maintenance. Proponents will monitor permanent roads on NFS land and BLM-administered lands yearly, and the applicable land-managing agency shall be provided with annual monitoring reports. Roads will be maintained as required by the Special Use Permit.

TRANS-4 Upon abandonment, temporary access roads 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.