ATTACHMENT U-2
TRANSPORTATION AND TRAFFIC PLAN

Transportation and Traffic Plan

Boardman to Hemingway Transmission Line Project

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ADT	average daily trip
ASC	Application for Site Certificate
ATV	all-terrain vehicle
BLM	U.S. Department of the Interior, Bureau of Land Management
BMP	Best Management Practice
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
ESCP	Erosion and Sediment Control Plan
FAA	Federal Aviation Administration
FPA	Forest Practices Act
IPC	Idaho Power Company
kV	kilovolt
LOS	level of service
NESC	National Electrical Safety Code
NWSTF	Naval Weapons System Training Facility
OAR	Oregon Administrative Rule
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statutes
Plan	Transportation and Traffic Plan
Project	Boardman to Hemingway Transmission Line Project
ROW	right-of-way
US	U.S. Highway
USFS	U.S. Department of Agriculture, Forest Service
V/C	volume-to-capacity

Agency Review Process

The agency review process outlined in this section aligns with the OAR 345-025-0016 agency consultation process applicable to monitoring and mitigation plans.

To afford an adequate opportunity for applicable local, state and federal agencies to review the draft plan prior to finalization and implementation, and any future plan amendments, the certificate holder shall implement the following agency review process.

Step 1: Certificate Holder's Update of Draft Plan or Future Plan Amendment: The certificate holder may develop one Transportation and Traffic Plan to cover all construction activities for the entire facility; or, may develop individual plans per county, segment or phase, as best suited for facility construction. Based on the draft Transportation and Traffic Plan included as Attachment U-2 of the Final Order on the ASC, the certificate holder shall update the draft plan(s) based on facility design and construction plans. If the plan(s) are amended following finalization, the certificate holder shall clearly identify and provide basis for any proposed changes.

Step 2: Certificate Holder and Department Coordination on Appropriate Review Agencies and Agency Review Conference Call(s): Prior to submission of the updated draft plan, or any future amended plans, the certificate holder shall coordinate with the Department's Compliance Officer to identify the appropriate federal, state and local agencies to be involved in the plan review process. Once appropriate federal, state and local agency contacts are identified by the Department and certificate holder, the Department's Compliance Officer will initiate coordination between agencies to schedule review/planning conference call(s). The Department and certificate holder may agree to schedule separate conference calls per county.

The intent of the conference call(s) are to provide the certificate holder, or its contractor, an opportunity to describe details of the updated draft or amended plan; and, agency plan review schedule. Agencies may provide initial feedback on requirements to be included in the plan during the call, or may provide written comments during the 14-day comment period. The Department will request that any comments provided be supported by an analysis and local, state or federal regulatory requirement (citation).

The certificate holder may coordinate with appropriate review agencies, in advance of or outside of the established agency review process; however, this established agency review process is necessary under OAR 345-025-0016 and may result in more efficient plan finalization and amendment if managed in a consolidated process, utilizing the Department's Compliance Officer as the lead Point of Contact.

Step 3: Agency Review Process: Either with, or prior to, the agency conference call(s), the certificate holder shall distribute electronic copies of the draft, or future amended, plan(s) requesting that the Department coordinate agency review comments within 14-days of receipt, or as otherwise determined feasible. Following the 14-day agency review period, the Department will consolidate comments and recommendations into the draft, or amended, plan(s), using a Microsoft Word version of the plan provided by certificate holder. Within 14-days of receipt of the agency review comments, the certificate holder shall provide an updated final version of the plan, incorporating any applicable regulatory requirements, as identified during agency review or must provide reasons supporting exclusion of recommended requirements. Final plans will be distributed to applicable review agencies by the Department, including the certificate holder's assessment of any exclusions of agency recommendations, and a description of their opportunity for dispute resolution.

Step 4: Dispute Resolution: If any review agency considers the final, or amended, plan(s) not to adhere to applicable state, federal or local laws, Council rules, Council order, or site certificate condition or warranty, the review agency may submit a written request of the potential violation to the Department's Compliance Officer or Council Secretary, requesting Council review during a regularly scheduled Council meeting. The Council would, as the governing body, review the violation claim and determine, through Council vote, whether the claim of violation is warranted and identify any necessary corrective actions.

1.0 INTRODUCTION

This Transportation and Traffic Plan (Plan) provides preliminary transportation information related to the Oregon portion of the Boardman to Hemingway Transmission Line Project (Project). Information provided includes existing traffic conditions, the potential impacts of the Project, and Idaho Power Company's (IPC's) proposed measures to mitigate these potential impacts.

This Plan outlines the measures that IPC and contractor(s) will implement during Project construction. Contractors will be required to submit detailed traffic and transportation plans to IPC that are consistent with the provisions in this Plan. 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. The construction contractor's plan will describe the following:

- Materials and equipment;
- Final material/equipment transportation routes;
- Total number of trips associated with delivery of materials and equipment;
- Total number of construction workers and their distribution throughout the construction schedule;
- Likely commuting routes and total number of trips for construction workers;
- Specific road improvements needed to allow use of transportation routes; and
- Construction Best Management Practices (BMPs) that will be required.

The timber contractor's plans will describe the transportation routes for logs and logging slash/biomass (if slash removal is required). Final mitigation measures will be developed in consultation with appropriate federal, state, and local agencies.

This Plan has been prepared as an attachment to Application for Site Certificate (ASC) Exhibit U, and is intended to provide information to meet ASC submittal requirements. This Plan also addresses Project Order comments from the Oregon Department of Energy (ODOE 2012 and 2014 amendment) by:

- Estimating facility-related traffic during construction and operation and potential impacts on traffic safety;
- Describing proposed transportation routes for the transport of heavy equipment and shipments of Project components during construction, including proposed ground and air transportation routes within the analysis area; and
- Evaluating Project impacts to the ability of public and private providers to provide those services.

1.1 Regulatory Framework

The Project will comply with applicable federal, state, and local transportation regulations. IPC will impose on its construction contractor(s) the responsibility to meet all applicable legal requirements.

Regulations related to roads, railroads, and airports are described in this section. Additional resource-related regulations including vehicle air emissions, stream crossing standards to protect fish, and PACFISH and INFISH directions (i.e., interim strategies for managing

anadromous fish-producing watersheds in Oregon and other states, and inland native fish strategy for the Pacific Northwest, and other U.S. Department of Agriculture Forest Service [USFS] regions) and Oregon Department of Fish and Wildlife fish passage requirements, are addressed in Exhibits E, P1, Q, and BB.

IPC and/or the construction contractor(s) will be required to obtain encroachment permits or similar legal agreements from the public agencies responsible for affected roadways and other applicable rights-of-way (ROWs). The contractor will be responsible for all oversize and overweight permits required for the delivery of construction materials and subcontractor components.

1.1.1 Federal

1.1.1.1 Federal Aviation Administration

Helicopter flight operations will operate under the control of the Federal Aviation Administration (FAA).

As described under Title 14 Code of Federal Regulations (CFR) Part 77, the FAA is also concerned with the following:

- Any construction or alteration exceeding 200 feet above ground level or
- 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 1 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
  - 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. Project construction cranes will exceed 200 feet in height and therefore, IPC must obtain a Notice of Proposed Construction or Alteration from the FAA. Information regarding the Notice of Proposed Construction or Alteration needed for the Project is contained in Section 3.2.5 of Exhibit E. None of the other conditions are anticipated to apply to this Project.

1.1.1.2 National Electrical Safety Code

Railroad/overhead utility crossing will conform to the National Electrical Safety Code (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 the centerline of tracks when measured at right angles. If located adjacent to curved tracks, the 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 kilovolts (kV) and higher must be located off the railroad ROW.
- Crossings will not be installed within 500 feet of the end of railroad bridges or 300 feet from the centerline of culverts or switch areas.

1.1.1.3 United States Department of the Navy

Low-level approach routes at the Naval Weapons System Training Facility (NWSTF) located in Boardman, Oregon, establish a height restricted approach zone to the west of the facility. Structures are prohibited from intruding more than 100 feet above ground level into the restricted zone. The Proposed Route near the proposed Longhorn Station and the two alternatives (West of Bombing Range Road Alternative 1 and West of Bombing Range Alternative 2), which cross the approach zone, will include structures at or below the 100-foot requirement; other Project facilities avoid the approach zone (Figure 1).

1.1.1.4 Bureau of Land Management and U.S. Department of Agriculture Forest Service

On federal lands, agency roads meet the minimum standards of width, alignment, grade, surface, etc. found in the Bureau of Land Management (BLM) Manual Section 9113 (BLM 1985) and/or USFS Handbooks 7709.56—Road Preconstruction Handbook (USFS 1986), 7709.57—Road Construction Handbook (USFS 1992), and 7709.58—Transportation System Maintenance Handbook (USFS 2009). These requirements are not anticipated to apply to Project two-track roads or to routes for all-terrain vehicles (ATVs) or utility terrain vehicles.

On January 12, 2001, the USFS issued the final National Forest System 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 additions to the National Forest System 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. The 2005 Travel Management Rule revised regulations at 36 CFR Parts 212, 251, 261, and 295 to require designation of roads, trails, and areas for motor vehicle use on all national forests.

To comply with the road and travel management rules, the Wallowa-Whitman National Forest prepared a Travel Management Plan. The draft Environmental Impact Statement (EIS) was released for public review in June 2009, and the record of decision and final EIS were released in February 2012 (USFS 2012). The decision amends the 1990 Wallowa-Whitman National Forest Land and Resource Management Plan (USFS 1990).

BLM resource management plans and USFS land and resource management plans provide direction on road management along with other resources that govern roads on federal lands. Both the USFS and BLM have access and 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.

IPC and its contractor(s) will comply with applicable standards and guidelines described in this section, except where IPC requests Project-specific amendments to those standards. New roads that do not become BLM or USFS roads and remain under IPC's or private landowner jurisdiction may not be constructed to all BLM and USFS standards.

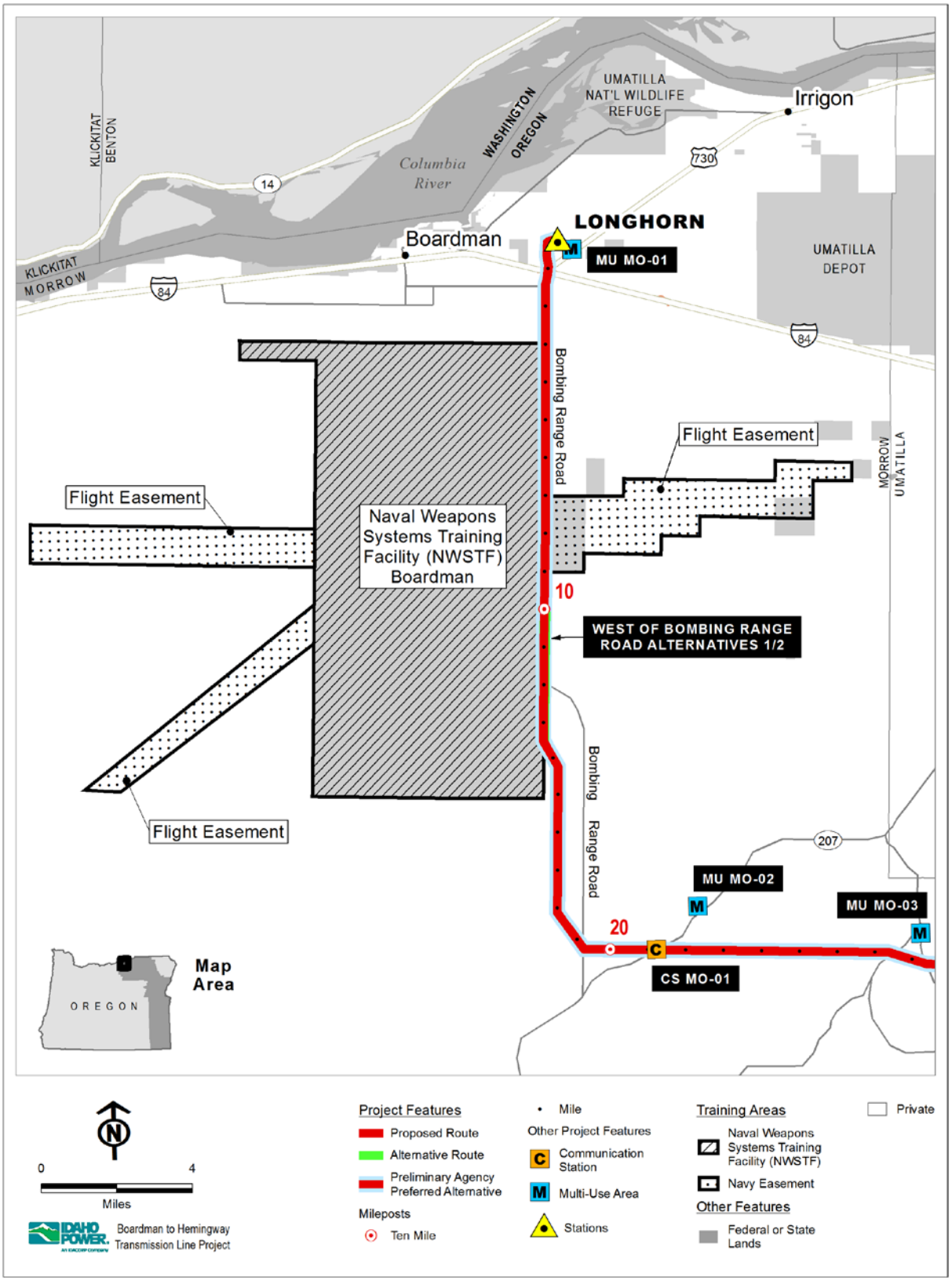

Figure 1. Naval Weapons System Training Facility Approach Zone

1.1.2 State

Oregon Administrative Rule (OAR) 734-055-0005 requires an encroachment permit from the State of Oregon Department of Transportation (ODOT) Highway Division to construct pole lines, which include poles, wires, guys, anchors, and related fixtures. The rule applies to and governs the location, installation, construction, maintenance, and use of pole lines and other operations on the state highway ROW and properties under the jurisdiction of the ODOT. The ODOT District Manager reviews permit applications for the following:

- Accommodation of utility facilities with no adverse effect on traffic safety, operation, maintenance, and aesthetic quality of the highway system;
- Incorporation of the appropriate industry code standards and American Association of State Highway and Transportation Officials (AASHTO) publications;
- Placement of utility installations in reasonable locations for construction and maintenance; and
- Safe and unimpaired use of the highway.

Motor carriers transporting oversize or overweight loads in Oregon must obtain an over-dimension variance permit when a truck and/or truck-trailer combination exceeds vehicle limits under Oregon Revised Statutes (ORS) 818. Continuous Trip Permits include Heavy Haul Permits, issued annually for nondivisible loads 98,000 pounds or less when operating over legal axle limits, and Extended Weight Permits, issued annually for divisible loads from 80,001 to 105,500 pounds. Single Trip Permits are issued for nondivisible loads when axle weights exceed legal limits. In summary, a permit is needed for a single, nondivisible load when any of the following applies:

- Width of the load or hauling equipment exceeds 8 feet, 6 inches;
- Height of vehicle or combination of vehicle and load exceeds 14 feet;
- Any single axle exceeds 20,000 pounds;
- Any tandem axle exceeds 34,000 pounds;
- Gross combination weight exceeds 80,000 pounds;
- Front overhang exceeds 4 feet beyond the front bumper;
- Load greater than 40 feet, exceeding 5 feet beyond the end of the semi-trailer, or load less than or equal to 40 feet, exceeding one-third of the wheelbase of the combination, whichever is less;
- Gross weight of a group of axles exceeds those in the ODOT legal weight tables; and
- Vehicle combination length exceeds that authorized by ODOT.

Unless operating with a front and rear pilot vehicle, warning lights as described in OAR 734-082-0036 are required when width exceeds 10 feet on two-lane highways or 12 feet on four-lane highways. Loads exceeding 12 feet on two-lane highways must use a front pilot vehicle. For any loads exceeding the following dimensions, a Super Load permit is required:

- Over 16 feet wide on the Interstate;
- Over 14 feet wide on any state two-lane highway;
- Over 17 feet high on any highway;
- Mobile with a box width over 14 feet wide and/or overall width greater than 15 feet; and
- Overall length greater than 150 feet.

In Oregon, activities on non-federal forest lands must also comply with the Oregon Forest Practices Act (FPA) rules, Oregon Revised Statute 527, and its attendant rules, OAR chapter 629, divisions 605 through 665. These rules will apply to portions of the Project that cross forest lands. Under the Oregon FPA, strict regulations govern the location, construction, maintenance, and repair of roads on non-federal forest lands. Roads must avoid marshes, meadows, drainage channels, riparian areas and, when possible, steep terrain. The FPA also restricts some road construction methods and use of heavily rutted or mud-covered roads to prevent sediment runoff on non-federal forest lands during periods of wet weather (OAR 629-625-0040 through 0440 and -0700). For construction, including temporary roads and additional temporary workspace, activities on non-federal forest lands are also subject to weather restrictions in accordance with the FPA. Operating in inclement weather in mountainous forest terrain is subject to shut down, as is the repetitive use of heavy trucks and equipment on existing unpaved forest roads during wet weather.

Where a road must cross a fish-bearing stream, culverts and bridges must be engineered to comply with the Oregon Department of Fish and Wildlife's Fish Passage Program to allow fish passage and to pass flood flows without damage. Since August 2001, the owner or operator of an artificial obstruction located in waters in which native migratory fish are currently or were historically present must address fish passage requirements prior to certain trigger events. Laws regarding fish passage are found in ORS 509.580 through 910 and in OAR 635, Division 412. Roads, adjacent ditches, and culverts must be maintained regularly to prevent landslides and avoid erosion and runoff that might enter streams. The project Transportation and Traffic Plan and Erosion and Sediment Control Plan (ESCP) (required for the Oregon portion) will include road maintenance measures to prevent and avoid erosion and runoff

IPC and its contractor(s) will comply with applicable state regulations described in this section.

1.1.3 County and Other Agencies

The Project would build access roads or stage materials in five Oregon counties. IPC reviewed applicable transportation system plans for information on existing road conditions and traffic and congestion levels. These include:

- Morrow County 2005 Transportation System Plan (Morrow County 2012)
- Umatilla County Transportation System Plan (Umatilla County 2002)
- Union County Transportation System Plan (Union County 1999)
- Baker County Transportation System Plan (Baker County 2005)
- Malheur County Transportation System Plan (Malheur County 2000)
- City of La Grande/Island City Transportation System Plan (City of La Grande 1999)
- City of La Grande Pedestrian and Bicycle Improvement Plan (City of La Grande 2007)

The Morrow County Planning Department Zoning Ordinance requires a traffic impact analysis for projects generating more than 400 passenger car equivalent trips per day (Article 3, Section 3.010).

The Umatilla County Development Code (Section 152.019) requires a traffic impact analysis under several conditions, including when a project increases site traffic volume generation by 250 or more average daily trips (ADT) or when the use of adjacent gravel-surfaced county roads by vehicles exceeding 10,000-pound gross vehicle weights increases by 20 or more vehicles per day.

The Union County Land Division Regulations (Article 25) states that traffic analysis and mitigation must be undertaken if a proposed project may impose an undue burden on the public transportation system. Projects generating up to 100 vehicle trips per day are reviewed locally by ODOT, Region 5. Proposals generating between 100 and 400 vehicle trips per day are reviewed by an ODOT Traffic Engineer. Proposals generating over 400 vehicle trips per day are required to submit a traffic impact study.

The Baker County Zoning and Subdivision Code (Section 340.07 of the Transportation Standards) requires a traffic impact study under various conditions, including when a development generates 25 or more peak-hour trips or 250 or more daily trips.

The Malheur County Development Code (Section 21.6-5.3, Traffic Impact Analysis) indicates that developments likely to generate more than 400 ADTs, the applicant may be requested to provide a traffic impact study or traffic counts to demonstrate the level of impact to the surrounding street system.

The number of trips that the Project is estimated to generate is described in Section 3 of this Plan. Exhibit K evaluates potential traffic impacts from the Project relative to substantive criteria and county code provisions identified by Morrow and Umatilla counties including transportation impacts analysis. Substantive criteria were not identified by other counties that the Project crosses, and thus are not addressed in Exhibit K.

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

In addition, an encroachment permit or similar authorization will be required from the applicable jurisdictional agency at locations where construction activities will 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) will 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 2009 with 2012 amendments).
- Store construction materials only in designated areas.

If a construction method requires the closure of a state- or county-maintained road, a traffic control plan will be developed to accommodate traffic as required by a county or state permit. Encroachment permit requirements will be specified by the agency having jurisdiction. Enforcement of the terms of an encroachment permit will reduce impacts associated with short term road closures.

2.0 AFFECTED TRANSPORTATION SYSTEM AND TRAFFIC LEVELS

This section provides an overview of the transportation facilities likely to be affected by the Project, including descriptions of existing conditions and available traffic volumes on major highways.

2.1 Existing Roads, Bridges, and Railroads

The study area includes roads ranging from Interstate highways to two-track dirt roads, and bridges with a similar range of size and structural design. Appendix A contains a set of maps that shows major roads in relation to the Project.

The Project would cross the following federal and state highways, all of which would be used as transportation routes for Project materials and labor:

- Interstate 84 (I-84)
- U.S. Highway (US) 395
- Oregon 244
- Oregon 237
- Oregon 203
- Oregon 86
- US 20
- US 26
- Oregon 207
- Oregon 201
- US 95

Roads that form part of the State Highway Freight System near the Project include I-84, US 395, US 20, and US 95 (ODOT 2013). ODOT requires these roads to maintain less congestion than similar roads not designated as part of the State Highway Freight System (ODOT 1999). Portions of the Blue Mountain Scenic Highway (OR 74), the Elkhorn Scenic Byway (US 30), the Grande Tour Route (Oregon 237), the Hells Canyon Scenic Highway (Oregon 86), and the Snake River-Mormon Basin Back Country Byway (US 30) cross the Project (Exhibit C, Attachment C-2).

In Oregon, from Boardman to the southeastern extent of Baker County, the proposed and alternative routes roughly parallel I-84. US 20, 26, and 395 cross the Project in Oregon, between Little Valley and Hope, near Brogan, and near Pilot Rock, respectively.

According to Bureau of Transportation Statistics (2015), only one inventoried road bridge occurs within the Site Boundary, the eastbound I-84 bridge over Old Highway 30 (north of Durkee, Oregon). Outside of the Site Boundary, inventoried bridges are located on public roads and include Interstate highways, U.S. highways, state and county roads, as well as publicly accessible bridges on federal lands. Given the proximity of some bridges to Project facilities, these structures may be used as part of the Project for transport of workers and materials. No weight or other limitations have been identified on existing bridge crossings needed for Project construction because deliveries will follow legal weight limits and it is assumed that Interstate highways, U.S. highways, and state and county roads will meet applicable required standards.

Surface streets within the city of La Grande may need to used during construction to access portions of the Project.

Main rail lines operating in the region include Union Pacific and Oregon Eastern Railroad.

2.2 Baseline Traffic Volumes

Traffic volumes vary widely throughout the study area. Annual average daily traffic counts in 2014 for I-84 ranged from 10,000 to 15,000 vehicles between Boardman and Pendleton to 5,000 to 10,000 from Pendleton through the rest of the Project. Traffic counts on US 20, US 26, and US 395 in the Site Boundary ranged from 0 to 2,500 vehicles (ODOT 2014). Traffic levels on smaller local roads in the Site Boundary are lower than levels on these highways. Table 1 lists available average annual daily trips from ODOT for federal and state highways at locations near the Project.

Table 1. Traffic Volumes Near the Project

Route	Location[1]	Highway/ Route Number	Highway/ Route Milepost	Location Description	2011 AADT	2014 AADT
Proposed Route/West of Bombing Range Road Alternatives[2]	Near milepost (MP) 1 in Morrow County	I-84 (Old Oregon Trail No. 6)	168.55	Boardman Jct. Automatic Traffic Recorder, Sta. 25-008, 0.60 mile southeast of Columbia River Highway No. 2 Interchange (US730)	13,200	14,700
Proposed Route	Near MP 22 in Morrow County	Oregon 207 (Lexington-Echo Highway No. 320)	13.62	0.10 mile southwest of Grieb Lane	810	730
Proposed Route	Near MP 30 in Morrow County	I-84 (Old Oregon Trail No. 6)	183.16	0.30 miles east of Hermiston Highway Interchange (Oregon 207)	11,200	11,700
Proposed Route	Near MP 34 in Morrow County	I-84 (Old Oregon Trail No. 6)	193.83	0.30 mile east of Lexington-Echo Highway Interchange	14,600	14,700
Proposed Route	Near MP 47 in Morrow County	Oregon 74 (Happner Highway No. 52)	72.70	Morrow-Umatilla County Line	80	70
Proposed Route	Near MP 65 in Umatilla County	US 395 (Pendelton-John Day Highway No. 28)	14.64	0.09 mile south of Old Highway 395	2,800	2,800
Proposed Route	Near MP 84 in Umatilla County	I-84 (Old Oregon Trail No. 6)	238.27	0.50 mile west of Meacham Interchange	9,300	9,800
Proposed Route	Near MP 90 in Union County	I-84 (Old Oregon Trail No. 6)	244.12	0.30 mile east of Kamela-Mt. Emily Road Interchange	9,300	9,800
Proposed Route	Near MP 95 in Union County	I-84 (Old Oregon Trail No. 6)	249.34	0.40 mile east of Glover Interchange	9,400	9,900

Route	Location[1]	Highway/ Route Number	Highway/ Route Milepost	Location Description	2011 AADT	2014 AADT
Proposed Route/ Morgan Lake Alternative	Near MP 100 in Union County	Oregon 244 (Ukiah-Hilgard Highway No. 341)	46.82	0.40 mile south of Old Oregon Trail (I-84)	620	580
Proposed Route/ Morgan Lake Alternative	Near MP 101 in Union County	I-84 (Old Oregon Trail No. 6)	253.43	0.60 mile east of Ukiah-Hilgard Highway (Oregon 244)	9,900	10,200
Proposed Route/ Morgan Lake Alternative	Near MP 105 in Union County	I-84 (Old Oregon Trail No. 6)	260.27	North La Grande Automatic Traffic Recorder, Sta. 31-007, 1.05 miles east of La Grande–Baker Highway No. 66 (U.S. 30), North La Grande Interchange	8,900	8,800
Proposed Route/ Morgan Lake Alternative	Near MP 115 in Union County	I-84 (Old Oregon Trail No. 6)	272.19	Ladd Summit Automatic Traffic Recorder, Sta. 31-008, 1.72 miles northwest of Ladd Canyon Road	9,300	9,800
Proposed Route	Near MP 127 in Union County	Oregon 237 (La Grande-Baker Highway No. 66)	32.19	0.10 mile east of Old Oregon Trail (I-84)	1,300	1,500
Proposed Route	Near MP 147 in Baker County	Oregon 86 (Baker-Copperfield Highway No. 12)	2.75	0.01 mile east of West Airport Road	1,200	1,500
Proposed Route	Near MP 150 in Baker County	I-84 (Old Oregon Trail No. 6)	303.74	0.40 mile north of Campbell Street Interchange (Oregon 7)	8,600	9,400
Proposed Route	Near MP 171 in Baker County	I-84 (Old Oregon Trail No. 6)	327.83	0.40 mile south of Durkee Interchange	8,200	8,700
Proposed Route	Near MP 184 in Baker County	I-84 (Old Oregon Trail No. 6)	338.41	0.30 mile south of Jordan Creek Interchange	8,700	8,800
Proposed Route	Near MP 198 in Malheur County	I-84 (Old Oregon Trail No. 6)	353.47	Huntington Automatic Traffic Recorder, Sta. 23-016, 1.47 miles south of Baker-Malheur County Line	8,600	9,000
Proposed Route	Near MP 206 in Malheur County	I-84 (Old Oregon Trail No. 6)	362.45	0.30 mile south of Moore's Hollow Interchange	8,200	8,800

Route	Location[1]	Highway/ Route Number	Highway/ Route Milepost	Location Description	2011 AADT	2014 AADT
Proposed Route	Near MP 217 in Malheur County	U.S. 26 (John Day Highway No. 5)	270.64	0.10 miles southeast of Road "D"	1,100	1,100
Proposed Route/ Double Mountain Alternative	Near MP 236 in Malheur County	U.S. 20 (Central Oregon Highway No. 7)	238.62	0.16 mile west of Vale-West Highway	1,600	1,600
Proposed Route	Near MP 257 in Malheur County	Oregon 201 (Succor Creek Highway No. 450)	11.72	North city limits of Adrian	1,200	1,300
Proposed Route	Near MP 265 in Malheur County	Oregon 201 (Succor Creek Highway No. 450)	20.09	0.02 mile west of Homedale Spur	330	380

[1] MP refers to transmission line mileposts (from the September 2016 geographic information system route layer).
[2] The numbers would be the same for both West of Bombing Range Road Alternatives 1 and 2.
AADT – average annual daily trips
Source: ODOT 2011, 2014

2.3 Volume-to-Capacity Ratios

According to ODOT Transportation System Guidelines (ODOT 2008), roadway and road facility congestion and performance standards may be expressed as level of service (LOS) standards or as volume-to-capacity (V/C) ratios. LOS characterizes the performance of roads, intersections, interchanges, and other transportation facilities. LOS ratings range from “A” (ideal conditions, with free-flowing traffic) to “F” (complete failure or gridlock). V/C ratios are defined as the peak traffic volume (vehicles/hour) on a highway section divided by the maximum volume that the highway section can handle. The closer the V/C ratio is to 1.0, the more congested traffic is.

The 1999 Oregon Highway Plan and later amendments (ODOT 1999) guide state highway development and management for a 20-year planning horizon. In this plan, ODOT identified the performance standards for state highways. The Plan’s highway mobility policy adopted V/C ratio rather than LOS to measure highway performance because V/C ratio is a more precise and consistent measure. Table 2 lists applicable maximum V/C ratio for peak hour operating conditions from the 1999 Oregon Highway Plan (table last amended in May 2015). These categories will apply to roads near Project multi-use areas.

Table 2. ODOT Maximum Volume-to-Capacity Ratios for Peak Hour Operating Conditions

Highway Category	Inside Urban Growth Boundary[1]	Unincorporated Communities	Rural Lands
Interstate Highways	0.80 to 0.85	0.70	0.70
Freight Route on a State Highway[2]	0.80 to 0.90	0.70	0.70
Statewide (Not a Freight Route)	0.80 to 0.90	0.75	0.70
Expressway on a Regional or District Highway	0.85 to 0.90	0.75	0.70
Regional Highway	0.85 to 1.00	0.75	0.70
District/Local Interest Roads	0.90 to 1.00	0.80	0.75

Source: ODOT 1999

[1] An Urban Growth Boundary is defined as the area surrounding an incorporated city in which the city may legally expand its city limits. The Project passes near the Urban Growth Boundaries for Boardman, Pilot Rock, La Grande, North Powder, Baker City, and Huntington.

[2] Near the Project, these include I-84, US 395, US 20, and US 95 (ODOT 2013).

Existing V/C ratios for interstate, state, regional, and district highways, and local roads are summarized in Table 3 based on information in local transportation system plans. The majority of Project roads and intersections operate well below maximum acceptable V/C ratios (maximums summarized in Table 2). Furthermore, based on local planning projections, road congestion is not anticipated near the Project. The only roads that are projected to reach maximum V/C ratios in the future are US 20/26 from Vale eastward to the Union Pacific Railroad crossing (in Nyssa, Oregon) and on OR 201 from the Malheur River south to Cairo Junction. Predicted volume increases could cause the LOS to decline temporarily on portions of these highways.

Table 3. Pre-Project Volume-to-Capacity Ratios

Area	Year Evaluated for Existing V/C Ratio[1]	Existing V/C Ratio	Year Evaluated for Future V/C Ratio	Projected Future V/C Ratio[2]
Morrow County	2004	0.01 to 0.40	2024	0.02 to 0.66
Umatilla County	1996	0.01 to 0.69	2018	0.01 to 0.69
Union County	1998	0.01 to 0.40	2018	0.01 to 0.59
Baker County	2005	0.01 to 0.79[3]	2025	0.01 to 1.48[4]
Malheur County	1996	0.01 to 0.83 (LOS A to D)[5]	2017	0.01 to 0.97 (LOS A to E)[6]

Sources: Morrow County 2012; Umatilla County 2002; Union County 1999; Baker County 2005; Malheur County 2000.

[1] Existing V/C ratios were obtained from current county transportation plans. Each plan specifies the baseline year for traffic information. Those years are presented in this column.

[2] Projected future V/C ratios were obtained from current county transportation plans. Each plan specifies the projected future traffic levels. That information is presented in this column.

[3] Greatest projected V/C ratio outside of I-84/Hughes Lane is 0.17.

[4] Greatest projected V/C ratio outside of I-84/Hughes Lane is 0.39.

[5] Greatest projected LOS outside of US 20 and US 26 is A.

[6] Greatest projected LOS outside of US 20 and US 26 is A.

Note: LOS conversions to V/C ratio based on Umatilla County (2002) Table 4-3 Level of Service Criteria for Two-lane Highways.

3.0 POTENTIAL IMPACTS TO TRANSPORTATION SYSTEM AND TRAFFIC

This section describes the potential impacts of the Project to the transportation system and traffic levels. IPC's engineering contractor estimated traffic (Appendix B) based on a series of assumptions including: crew sizes, crew productivity, lag time between work phases, material delivery strategies, and the spacing of multi-use areas. The line contractor may approach the Project in a different manner than assumed, which could increase or decrease the number of trips in the engineering contractor estimate. The assumptions included are the best reasonable estimate based on the contractor's experiences as an engineering firm working on transmission projects and their history as a transmission construction company.

3.1 Construction

During construction of the Project, the primary impact to the transportation system will be the generation of additional traffic. Multi-use areas will generally be the location of the heaviest construction-related traffic because they will be centralized hubs of activity within each construction segment. Construction equipment and materials will be transported from their sources to multi-use areas located approximately every 15 miles along the Project and then to approximately 1,200 individual tower construction sites, as well as the construction sites for the station and communication station sites. Construction equipment and materials for the existing substation will be staged at the substation. The Project will generate traffic related to construction workers commuting to the job sites. The Project also will require transport of logging equipment, logs, and logging slash from Project construction in forested areas.

The potential for impacts to traffic is greatest where construction will involve regular use of public roads between local communities and multi-use areas, such as I-84, US 20, Oregon State highways, and well-used local roads. Much of the heavy construction equipment, such as large excavators, cranes, feller bunchers, and track-rig equipment, generally will operate on the Project ROW or private access roads, except when heavy equipment is moved from one isolated section of line to another on public roads. These instances are limited and incidental to the overall traffic flow created by the Project. The larger potential impact to traffic levels is associated with daily trips in and out of multi-use areas by construction workers personal vehicles, material delivery vehicles, concrete trucks, and construction vehicles moving from work area to work area within the section.

3.1.1 Trip Generation Estimates

3.1.1.1 Anticipated Personal Vehicle Trips

Construction of the new transmission line is anticipated to last at least 36 months, with multiple construction crews working simultaneously. See Exhibit B, Section 3.6 for the construction schedule for the Project. Work is projected to begin simultaneously in more than one section with material marshaling, ROW clearing, and road and site work starting first, then foundation installation, tower erection, and wire stringing. The station expansion construction and the communication station work will begin on a schedule that will allow for completion at approximately the same timeframe as the transmission line. Construction activity will begin within 3 years of the effective date of the site certificate, and construction will be completed within 7 years of the effective date of the site certificate. No work on the site as defined in OAR 345-001-0010 will take place before the Energy Facility Siting Council issues a site certificate.

As described in Exhibit U, Section 3.3.1, IPC's engineering contractor separated the overall (Oregon and Idaho) Project into Construction Spread 1 (approximately transmission line

milepost 0 to 150) and Construction Spread 2 (approximately transmission line milepost 150 to 296.6), with construction on each spread occurring simultaneously. For the purposes of traffic impacts, the two spreads are further divided into smaller sections that are assumed to be sufficiently separate (geographically) so that the use of local access routes will not overlap between smaller sections. In other words, the traffic impacts will not be additive between adjacent sections.

Work crews will include those involved in construction activities, as well as workers providing vehicle and equipment maintenance and repairs, refueling, dust control, construction inspection, construction materials testing, and environmental compliance and surveying.

For each crew type, IPC's engineering contractor estimated the quantity of personal vehicles, construction pickups, and other construction equipment, as well as the number of one-way trips per day. Two workers are assumed to carpool in each personal vehicle, making two one-way trips daily—from lodging to the multi-use area each morning and from the multi-use area to lodging each evening. Table 4 provides the numbers of vehicles, one-way trips on public roads per day, and total trips per day associated with personal vehicle use per construction spread. Table 5 lists nearby communities where workers may lodge and local routes between those communities and each multi-use area.

Table 4. Personal Vehicle Trips per Day per Construction Spread

	Personal Vehicles		
Construction Crew Type	**Number of Personal Vehicles (per day)**	**Number of One-way Trips on Public Roads (per day)**	**Total One-way Trips (per day)**
Substation Construction	49	2	**98**
ROW Clearing	9	2	**18**
Road/Pads Grading	9	2	**18**
Foundations	11	2	**22**
Tower Lacing (assembly)	54	2	**108**
Tower Setting (erection)	27	2	**54**
Wire Stringing	29	2	**58**
Restoration	5	2	**10**
Blasting	5	2	**10**
Materials Management	10	2	**20**
Mechanic & Equipment Management	5	2	**10**
Refueling	5	2	**10**
Dust Control	5	2	**10**
Construction Inspection	5	2	**10**
Materials Testing	5	2	**10**
Environmental Compliance	5	2	**10**
Surveyors	5	2	**10**
Total			**486**

Table 5. Preliminary Commuting Routes for Workers Lodging in Nearby Communities

Multi-use Area[1]	County	Nearby Community	Major Routes	Local Routes
MO-01, MO-02, MO-03, MO-04, MO-05	Morrow	Hermiston, Boardman	I-84, OR 207, OR 74, US 730	Big Butter Creek Lane, Butter Creek Road
UM-01, UM-02, UM-03, UM-04, UM-05, UM-06, UM-07	Umatilla	Hermiston, Pilot Rock, Pendleton	I-84, I-82, US 395, OR 74	Lamb Road, Big Butter Creek Road, Parker Road, Southwest Birch Street, East Birch Creek Road, McKay Creek Road, Ross Road
UN-02, UN-03, UN-04	Union	North Powder, Baker City, La Grande	I-84, OR 203, OR 234	Foothill Road, Olsen Road, Bagwell Road, North Powder River Lane
BA-01, BA-02, BA-03, BA-04, BA-05, BA-06	Baker	Baker City, Durkee, Huntington	I-84, US 30, OR 203	Atwood Road, Campbell Street, Sunset Lane, Hill Creek Road, Oxman Ranch Road, Durkee Road, Rye Valley Lane
MA-01, MA-02, MA-03, MA0-4, MA-05, MA-06, MA-07, MA-08, MA-09, MA-10	Malheur	Vale, Ontario, Adrian	I-84, OR 201, US 20, US 26, OR 415	Love Reservoir Road, Old Oregon Trail, 2nd Boulevard South, Russell Road, 4th Boulevard South, Bishop Road, 5th Avenue East, Graham Boulevard, Loop Road, Rock Canyon Road, Cow Hollow Road, Owyhee Tunnel Road, Succor Creek Road
OW-01[2], OW-02, OW-03, OW-04, OW-05	Owyhee (Idaho)	Homedale (Idaho), Marsing (Idaho)	US 95, OR 78	In Idaho: Sage Road, Nelson Lane, State Line Road, Coyote Grade Road, Clark Road, Wilson Cemetery Lane, Johnstone Road

[1] Multi-use areas are numbered as shown in Appendix A, and would be used for the Proposed Route. The alternative routes would not require separate multi-use areas. West of Bombing Range Alternatives 1 and 2 would use MO-01 or MO-02, the Morgan Lake Alternative would use UN-02, and Double Mountain Alternative would use MA-05 and MA-06.
[2] Multi-use areas listed in Owyhee County, Idaho, are only to provide context for the analysis related to the Oregon Project features.

Construction will generally occur between 7 a.m. and 7 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Given the early start times and late finish times, construction commuting traffic likely will overlap with only a portion of local community peak traffic hours.

3.1.1.2 Anticipated Construction Vehicle Trips

IPC's construction contractors and suppliers will transport major Project components from their sources to the Project multi-use areas or directly to individual construction sites. Lattice tower components may be sourced from overseas, and would most likely be transported from Portland, Oregon, via truck or rail to multi-use areas and the existing substation. Other major project components such as conductors, optical ground wire, insulators and hardware will be sourced from domestic suppliers in various locations throughout the United States and would most likely utilize the National Interstate System to reach the vicinity of the Project. Locally sourced materials including concrete, reinforcing steel for foundations, rock and other incidentals will utilize State, County and local roads (The complete list of Project materials can be found in Exhibit G). Preliminary haul routes for Project components are shown on the figures in Appendix A, which also indicate the station location and multi-use areas.

Table 6 provides the numbers of vehicles, one-way trips on public roads per day, and total trips per day associated with construction vehicle use per construction spread. Table 7 lists nearby communities where water could be obtained and local routes between those communities and each multi-use area.

Table 6. Construction Vehicle Trips per Day per Construction Spread

Construction Crew Type	Construction Vehicles					
	Light Construction Vehicles			Heavy Construction Vehicles		
	Number of Pickups/ Mechanic Trucks (per day)	Number of One-way Trips on Public Roads (per day)	Total One-way Trips (per day)	Number of Other Vehicles	Number of One-way Trips on Public Roads (per day)	Total One-way Trips (per day)
Substation Construction	20	2	40	5	2	10
ROW Clearing	9	4	36	5	4	20
Roads/ Pad Grading	9	4	36	9	2	18
Foundations	9	2	18	5	8	40
Tower Lacing (assembly)	27	2	54	0	0	0
Tower Setting (erection)	20	2	40	0	0	0
Wire Stringing	9	4	36	9	4	36
Restoration	3	2	6	0	0	0
Blasting	5	4	20	0	0	0
Material Delivery	20	8	160	12	2	24
Mechanic and Equipment Mgmt.	5	6	30	0	0	0
Refueling	0	0	0	5	4	20
Dust Control	0	0	0	5	4	20
Construction Inspection	5	8	40	0	0	0
Concrete Testing	5	4	20	0	0	0
Environmental Compliance	9	6	54	0	0	0
Surveyors	5	3	30	0	0	0
Totals	**–**	**–**	**620**	**–**	**–**	**188**

Table 7. Preliminary Routes for Hauling Water to Multi-use Areas

Multi-use Area[1]	County	Anticipated Water Source	Major Routes	Local Routes
MO-01, MO-02, MO-03, MO-04, MO-05	Morrow	Boardman	I-84, OR 207, OR-74, US 730	Big Butter Creek Lane, Butter Creek Road
UM-01, UM-02, UM-03, UM-04, UM-05, UM-06, UM-07	Umatilla	Boardman, Pendleton	I-84, I-82, US 395, OR 74	Lamb Road, Big Butter Creek Road, Parker Road, Southwest Birch Street, East Birch Creek Road, McKay Creek Road, Ross Road
UN-02, UN-03, UN-04	Union	La Grande	I-84, OR 203, OR 234	Foothill Road, Olsen Road, Bagwell Road, North Powder River Lane, City of La Grande surface streets
BA-01, BA-02, BA-03, BA-04, BA-05, BA-06	Baker	Baker City	I-84, US 30, OR 203	Atwood Road, Campbell Street, Sunset Lane, Hill Creek Road, Oxman Ranch Road, Durkee Road, Rye Valley Lane
MA-01, MA-02, MA-03, MA-04, MA-05, MA-06, MA-07, MA-08, MA-09, MA-10	Malheur	Ontario	I-84, OR 201, US 20, US 26, OR 415	Love Reservoir Road, Old Oregon Trail, 2nd Boulevard South, Russell Road, 4th Boulevard South, Bishop Road, 5th Avenue East, Graham Road, Loop Road, Rock Canyon Road, Cow Hollow Road, Owyhee Tunnel Road, Succor Creek Road
OW-01, OW-02, OW-03, OW-04, OW-05	Owyhee (Idaho)	Nampa	US 95, OR 78	In Idaho: Sage Road, Nelson Lane, State Line Road, Coyote Grade Road, Clark Road, Wilson Cemetery Lane, Johnstone Road

[1] Multi-use areas are numbered as shown in Appendix A, and would be used for the Proposed Route. The alternative routes would not require separate multi-use areas. West of Bombing Range Road Alternatives 1 and 2 would use MO-01 or MO-02, the Morgan Lake Alternative would use UN-02, and the Double Mountain Alternative would use MA-05 and MA-06.

3.1.2 Construction Equipment and Traffic

Construction access will occur at multi-use areas and individual construction sites along the Proposed Route, resulting in dispersed construction traffic. Truck deliveries will normally occur on weekdays between 7:00 a.m. and 7:00 p.m., avoiding peak hours as practicable.

The following is a summary of anticipated equipment to be used for each transmission-line construction activity.

- Survey work: pickup trucks or ATVs.
- Timber removal: pickup trucks, feller bunchers, dump trucks, wood chippers.
- Road construction: pickup trucks, bulldozers, motor graders, and water trucks.
- Hole digging, installation of directly embedded structures, or foundation installation: pickup trucks, 2-ton trucks, digger derrick trucks, hole diggers, bulldozers, concrete trucks, water trucks, cranes, hydro cranes, wagon rock drills, dump trucks, and front-end loaders.
- Hauling lattice steel members, tubular poles, braces, and hardware to the structure sites: steel haul trucks, carry alls, cranes, and forklifts.
- Assembly and erection of structures: pickup trucks, 2-ton trucks, carry alls, cranes, and a heavy lift helicopter.
- Wire installation: pickups, wire reel trailers, diesel tractors, cranes, 5-ton boom trucks, splicing trucks, three drum pullers, single drum pullers, tensioner, sagging dozers, carry-alls, static wire reel trailers, bucket trucks, and a light duty helicopter.
- Final cleanup, reclamation, and restoration: pickup trucks, 2-ton trucks, bulldozers, motor graders, dump trucks, front-end loaders, hydro-seed truck, and water trucks.

The highest level of traffic will be when the wire stringing operations begin while several other operations are occurring at the same time, which will likely include ROW clearing, installing foundations, hauling steel, and assembling and erecting structures. For the station work, the highest level of traffic will be during site grading and foundation installation. For the communication station sites, the highest level of traffic will be during grading and site preparation.

Detailed estimates of trips generated by transporting Project construction equipment will be provided by the construction contractor prior to construction.

3.1.3 Traffic Related to Timber Removal

In forested areas, the Project will require removal of timber from the Project ROW and for construction and improvement of access roads. Specific timber harvest plans have not been finalized. Logs from timber clearing may be transported to nearby sawmills. Decisions regarding transportation routes for harvested timber will be made following completion of a timber harvest plan, and the number of log truck tips will be estimated when the timber harvest plan has been finalized. Logging slash will remain onsite if possible. For additional discussion regarding removal of timber in forested areas, see Exhibit K, Attachment K-2, ROW Clearing Assessment.

3.1.4 Impacts to V/C Ratios

Based on the estimated trip generation numbers in Tables 4 and 6, a maximum of approximately 1,294 daily one-way vehicle trips are expected within any one construction spread. To facilitate traffic and other analyses, the two construction spreads are divided into smaller sections based on similar construction windows and seasonal weather restrictions. Not all construction sections will have the same number of concurrent construction activities, depending on how the construction contractor sequences and executes the Project. Some sections will have fewer daily vehicle trips. For the purposes of the traffic analysis, the spreads are divided into five sections with multi-use areas that could have additive traffic impacts. The sections are assumed to have approximately equal levels of activity. The 1,294 daily one-way trips per spread divided over five sections of more concentrated traffic results in 259 daily one-

way vehicle trips per group of adjacent multi-use areas. The engineering contractor estimates that 50 percent of the construction vehicle trips (Tables 4 and 6) will begin and end at work areas other than multi-use areas. This assumption reduces the number of one-way trips for each group of adjacent multi-use areas to 130 per day. Of these, 111 vehicles are anticipated to be less than 10,000 pounds gross vehicle weight and 19 vehicles are anticipated to be greater than 10,000 pounds gross vehicle weight.

These estimates were incorporated into a planning-level analysis of worst-case potential Project impacts on V/C ratios (Table 8). Existing peak traffic volumes and V/C ratios were identified or calculated for the routes most likely to be used by trucks hauling construction materials or logs, and by construction workers commuting to Project sites. Calculations were based on conservative assumptions detailed in the footnotes to Table 8. Existing V/C ratios on these routes range from 0.02 to 0.48. The numbers of daily vehicle trips related to Project construction were estimated and added to existing peak traffic volumes for each potential hauling or commuting route. Minor traffic from other Project sources, such as solid waste removal, is expected to be too minimal to affect traffic levels and was therefore not included in this analysis. Additional truck trips related to the delivery and removal of construction equipment during mobilization and demobilization are not expected to impact peak traffic levels, given that they will occur gradually over several weeks before and after the peak construction periods.

The resulting “with Project” traffic volumes were divided by road capacities for each route to arrive at the worst-case V/C ratios that could be expected, by route, during Project construction. These peak-hour, “with Project” V/C ratios range from 0.04 to 0.61, resulting from increases of 0.01 to 0.13.

Each “with Project” V/C ratio was compared to ODOT’s maximum V/C ratio for that type of road (based on ODOT 1999; V/C ratios last amended in May 2015). Factoring in traffic levels generated from construction activities, none of the potential Project hauling or commuting routes exceed a maximum V/C ratio. Given the low V/C ratios on existing roads used by the Project and the relatively dispersed distribution of truck traffic and workers near any specific location at any given time, the additional Project traffic generated during construction is not anticipated to cause notable congestion or otherwise impact local communities.

Table 8. Evaluation of Project Impacts on Volume-to-Capacity Ratios for Roads Potentially Used during Project Construction

Multi-use Areas	Potential Hauling or Commuting Route	Road Classification[1]	Existing Peak Traffic Volume[2]	Road Capacity[2]	Existing V/C Ratio[2]	Estimated Daily Personal and Construction Vehicles	With Project Peak Traffic Voume[3]	With Project V/C Ratio[4]	Increase in V/C Ratio From Project Construction[5]	ODOT Maximum V/C Ratio[6]	V/C Ratio Exceeds ODOT Maximum with Project?
MO-01, MO-02, MO-03, MO-04, UM-01, UM-02	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,335	0.42	0.02	0.70	No
	I-82	Interstate Highway, Unincorporated Communities	2,640	5,500	0.48	130	2,770	0.50	0.02	0.70	No
	US 730	Statewide (Not a Freight Route), Rural Lands	990	2,475	0.40	130	1,120	0.45	0.05	0.70	No
	OR 207	Regional Highway, Rural Lands	56	1,110	0.05	130	186	0.17	0.12	0.70	No
	OR 74	Regional Highway, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.80 to 1.00	No
	US 395	Freight Route on a State Highway, Rural Lands	465	969	0.48	130	595	0.61	0.13	0.70	No
	Big Butter Creek Lane/Butter Creek Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Lamb Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
MO-05, UM-03, UM-04, UM-05, UM-06, UM-07	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,335	0.42	0.02	0.70	No
	US 395	Freight Route on a State Highway, Rural Lands	465	969	0.48	130	595	0.61	0.13	0.70	No
	OR 74	Regional Highway, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.80 to 1.00	No
	Parker Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Southwest Birch Street/East Birch Creek Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	McKay Creek Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Ross Road	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
UN-02, UN-03, UN-04	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,335	0.42	0.02	0.70	No
	OR 234	District/Local Interest Road, Rural Lands	700	14,000	0.05	130	830	0.06	0.01	0.75	No
	Foothill Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Bagwell Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	North Powder River Lane	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Olsen Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
BA-01, BA-02, BA-03, BA-04, BA-05, BA-06, MA-01	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,336	0.42	0.02	0.70	No
	US 30	Freight Route on a State Highway, Rural Lands	2,200	9,565	0.23	130	2,330	0.24	0.01	0.70	No
	CR 203	District/Local Interest Road, Rural Lands	700	14,000	0.05	130	830	0.06	0.01	0.75	No
	Atwood Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Campbell St	District/Local Interest Roads, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Oxman Ranch Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Sunset Lane	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Hill Creek Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Durkee Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Rye Valley Lane	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Old Oregon Trail	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Love Reservoir Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
MA-02, MA-03, MA-04, MA-05, MA-06	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,335	0.42	0.02	0.70	No
	US 20	Freight Route on a State Highway, Rural Lands	165	1,625	0.10	130	295	0.18	0.08	0.70	No
	US 26	Statewide (Not a Freight Route), Rural Lands	120	6,000	0.02	130	250	0.04	0.02	0.70	No
	OR 201	Regional or District Highway, Rural Lands	180	1,625	0.11	130	310	0.19	0.08	0.70	No

Multi-use Areas	Potential Hauling or Commuting Route	Road Classification[1]	Existing Peak Traffic Volume[2]	Road Capacity[2]	Existing V/C Ratio[2]	Estimated Daily Personal and Construction Vehicles	With Project Peak Traffic Voume[3]	With Project V/C Ratio[4]	Increase in V/C Ratio From Project Construction[5]	ODOT Maximum V/C Ratio[6]	V/C Ratio Exceeds ODOT Maximum with Project?
MA-02, MA-03, MA-04, MA-05, MA-06 (continued)	East 5th Avenue	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Loop Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Graham Boulevard	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Rock Canyon Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	4th Boulevard South	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Bishop Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Russell Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	2nd Boulevard South	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Cow Hollow Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
MA-07, MA-08, MA-09, OW-01, OW-02, OW-03, OW-04, OW-05	I-84	Interstate Highway, Unincorporated Communities	2,205	5,513	0.40	130	2,335	0.42	0.02	0.70	No
	US 95	Freight Route on a State Highway, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.70	No
	Owyhee Tunnel Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Nelson Lane	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Succor Creek Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	State Line Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Sage Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Coyote Grade Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Wilson Cemetery Lane	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No
	Johnstone Road	District/Local Interest Road, Rural Lands	120	1,000	0.12	130	250	0.25	0.13	0.75	No

[1] Road classifications were selected conservatively based on the most rural segment of each route (the segment with the smallest capacity).
[2] Existing peak traffic volumes, capacities, and V/C ratios (representing peak a.m. and p.m. conditions) were estimated using conservative assumptions with the methods described in ODOT's Highway Design Manual (ODOT 2012) or taken directly based on the exact road or roads with similar characteristics from local transportation plans. Where peak traffic volumes are unavailable, peak volumes are assumed to be 15 percent of average daily trips, based on the local transportation plans.
[3] "With Project" peak traffic volume is calculated by adding existing peak traffic volume plus the number of Project truck and car trips assumed to occur during the same timeframes.
[4] "With Project" V/C ratio is calculated by dividing the "with Project" peak traffic volume by the road capacity.
[5] The increase in V/C ratio from the Project is calculated by subtracting the existing V/C ratio from the "with Project" V/C ratio.
[6] From ODOT (1999).
Travel routes less than a mile from large roads and highways are addressed in Table 5 and 7 and are not in the V/C ratios in this table.

3.1.5 Impacts to Local Services

Potential impacts to local services and disruptions to public road ROWs are anticipated to be minimal. To the degree practicable, Project-related activities will be coordinated to avoid interfering with school buses, mail delivery vehicles, ambulances, paramedics, fire engines, or police vehicles. The Project does not overlap with public transportation systems, such as public bus routes. Impacts to railroads or pipelines are not anticipated because construction activities will not be performed on railroad ROWs or near pipelines. Furthermore, as described in Section 3.1.4, Project-related traffic levels are not anticipated to result in congestion and Project activities will not delay response times for emergency services.

Delivery of large equipment and materials via truck could require temporary closures to selected local roads. However, multi-use areas and both tower and station construction sites are located away from high-use public roads, so any closures during construction are anticipated to have minimal impact on local communities. Two-lane roads would be most impacted by temporary closures because they provide only one lane of travel per direction. IPC's construction contractors will be required to coordinate the timing and locations of road closures in advance with local school districts, post offices, and emergency responders. In the event that emergency services are needed at a location where access is temporarily blocked by the construction zone, IPC's construction contractors will reopen access as quickly as possible. Most construction activities will take place outside of roadway ROWs with the exception of access road entry points and wire stringing. During wire stringing, temporary structures will be erected across highways and public roads to prevent conductors, socklines, or pulling wires from lying on roadways and disrupting traffic. Roads will not be closed during wire stringing.

These potential impacts from temporary road closures and construction activities are not anticipated to affect local communities because most Project activities involving short-term road closures will occur in remote areas, away from housing and other developments.

3.1.6 Access Roads

As described previously, construction of the Project will require vehicle, truck, and crane access to all construction areas. Most construction areas will be accessed using low-standard roads including those owned by private parties, counties, and state and federal agencies. Access to construction sites will require improvements to existing unpaved roads and construction of new access roads. IPC assumes that existing paved roads and bridges were designed to meet ODOT and other applicable standards and will therefore not require improvements prior to Project construction.

The Project and its related and supporting facilities in Oregon will involve permanent access roads, including 206 miles of new roads and 283 miles of existing roads. Exhibit C, Section 3.2.1 provides details on the miles of access roads needed for the Project. Tables C-2 through C-6 of Exhibit C provide details on the miles of new roads and existing roads that will need to be improved by county for the Proposed Route. Section 3.2.2 of Exhibit C provides the miles of new roads and existing roads needed for the alternative routes.

IPC has identified the minimum access-road requirements for transmission line and station construction and operation. A 14-foot-wide road surface (i.e., travel way) and 16- to 20-foot-wide road surface for turns were determined by the largest piece of equipment involved in construction (See Section 3.3.1 of Exhibit B). The critical vehicle for tower construction is an aerial lift crane. A typical unit is shown in Figure 2. Barriers to the movement of this specialized vehicle include roads that are too narrow or steep, have intersections with inadequate turning radii, or have inadequate surfaces. Other barriers would include existing narrow bridges or other existing road structures

(such as culverts) with inadequate cover. Where barriers are encountered, IPC's construction contractors will improve roads or construct new roads to allow passage.

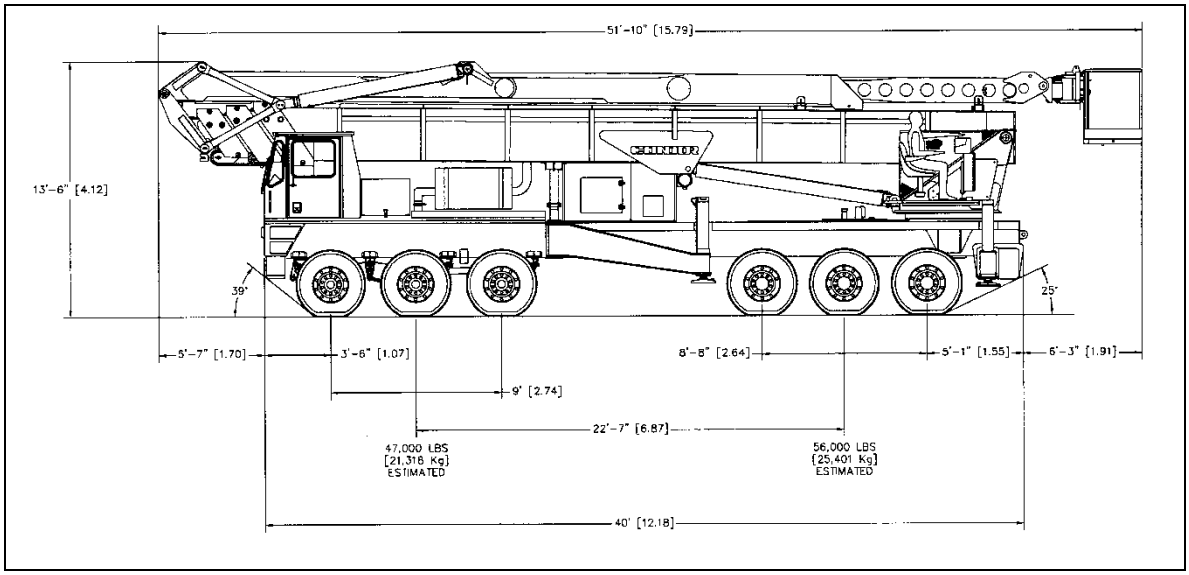

Figure 2. Example Aerial Lift Crane to be Used During Construction (Roadable Length 52 Feet; Width 8 Feet 6 Inches)

Typical minimum road-construction requirements for improvements to existing roads and for new roads are shown in Exhibit B, Attachment B-5, Road Classification Guide and Access Control Plan.

3.1.7 Potential Damage to Existing Infrastructure

Construction of the Project is not expected to result in damage to existing roads, bridges, or overhead power distribution lines, as IPC's construction contractors will be required to comply with all conditions and requirements in road use permits or similar documents from local jurisdictions and power distribution utilities. For example, by complying with ODOT regulations for load limits, heavy loads will avoid impacts to existing roads that were designed to code.

3.2 Operation

Following Project construction, existing and new permanent access roads will be used by maintenance crews and vehicles for inspection and maintenance of the new facilities. The operations phase will have little to no effect to local and regional traffic. Trips will be limited to regular inspection and maintenance of the transmission line and regular hauling of materials would not occur. IPC will staff Project operations and maintenance with existing staff and will not affect community peak hour traffic. One additional part-time position may be filled locally. Project operations will not cause emergency access restrictions or impacts to area public transit services, nor will they increase roadway hazards or cause damage to existing roads or bridges. Any road- or railroad-overhead utility crossings would conform to the NESC, which would prevent impacts during operations. Project operations would not interfere with railway operations. Air-traffic patterns will not be affected by the placement of new structures or conductors because the Project will not violate vertical obstruction prohibitions.

Temporary construction roads not required for future maintenance access will be restored as described in Exhibit P1, Attachment P1-3, Reclamation and Revegetation Plan.

4.0 MITIGATION

This section describes potential mitigation strategies to address the impacts summarized in Section 3. IPC's construction contractor will be required to comply with all applicable federal, state, and local regulations and Project mitigation requirements.

IPC's construction contractor will prepare site-specific traffic and transportation plans which will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads. IPC will ensure that plans are approved prior to the issuance of a Notice to Proceed with construction.

The following strategies, physical improvements and operational procedures, will be applied to reduce transportation impacts of the Project depending on site-specific conditions.

4.1 Physical Improvements

As discussed in Section 3.1, IPC's construction contractor will need to improve some local roads to accommodate oversize truck deliveries. This work will involve improvements to road segments, intersections, and bridges, as needed. Any responsibility for IPC or IPC's construction contractors to rehabilitate or reconstruct roadways and structures during and after use will be stipulated in road-use permits or similar documents.

4.1.1 Construction Permits and Property Agreements

The construction contractor will obtain encroachment permits or similar legal agreements from the public agencies responsible for affected roadways and other applicable ROWs. IPC will require its construction contractor(s) to ensure that all suppliers of Project equipment and materials obtain applicable oversize and overweight permits and comply with all permit requirements.

4.1.2 Road Standards and Maintenance

For new access roads, the design of higher-standard roads will conform to the most current edition of AASHTO's Guidelines for Geometric Design of Very Low-Volume Local Roads, for Access Roads with an Anticipated Average Daily Traffic of Less than 400 Vehicles. Roads will meet USFS and BLM standards for roads that will be added to federal jurisdiction. Existing USFS and BLM roads which cannot be used in their existing condition will be brought up to these standards. For roads on state forest land, IPC will work with ODOT, Oregon Department of Forestry, and other agencies to ensure compliance with applicable road standards and to obtain any necessary special approvals. Roads that remain in IPC's jurisdiction may not be designed to all federal standards. Roads developed specifically for this Project that are identified by IPC as no longer necessary will be reclaimed as specified in the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3).

4.1.3 BMPs for Erosion Control and Stormwater Drainage

In Oregon, a completed ESCP is one of the required components of IPC's application for the National Pollutant Discharge Elimination System Construction Stormwater Permit (1200-C; Exhibit I, Attachment I-3). Erosion control and sedimentation measures, such as silt fences, water bars, culverts, sediment basins, and perimeter control, will be installed to minimize erosion during and subsequent to construction of the Project, as specified in the ESCP. IPC's construction contractors will be required to comply fully with the Project ESCP, including implementing approved BMPs during all road-related activities, including construction industry standard practices and BMPs for spill prevention and containment.

In addition, roads will be constructed so that proper drainage is not impaired and soil erosion is minimized. IPC's construction contractor will limit the use of access roads by trucks and other heavy equipment during wet weather. Existing culverts will be upgraded if they are damaged by the Project or cannot support construction traffic.

4.2 Operational Procedures During Construction

Safe operation of Project-related traffic depends not only on the condition and characteristics of affected roads, but also on procedures governing the time and frequency of deliveries of Project components and materials. To maximize safety and compatibility with background traffic flows, the following operational procedures will be implemented during Project construction.

4.2.1 Traffic Control, Access, and Safety Measures

Final haul routes will be selected prior to construction with consideration for potential impacts to localized traffic flow and emergency services. IPC will work with local firefighters, police departments, ambulance services, and other emergency responders to coordinate activities for effective emergency response. IPC will require the construction contractor to develop and implement an emergency response plan.

Construction vehicle traffic on public roadways will be limited to off-peak commuting times as practicable to minimize impacts on local commuters. To minimize conflicts between Project traffic and background traffic, movements of heavy trucks will be minimized to the extent practicable during these peak times.

To reduce traffic congestion and roadside parking hazards, multi-use areas will provide for parking for construction employee personal vehicles.

Movements of oversize trucks will be prohibited during peak times, to the extent practicable. If possible and in consideration of worker safety, such oversize deliveries will occur during other parts of the day, when background traffic tends to be lower, such as early morning and late afternoon. IPC will work with local law enforcement as appropriate to assist with Project deliveries.

In addition, IPC's construction contractor will implement the following measures:

- Coordinating the timing and locations of road closures in advance with emergency services such as fire, paramedics, and essential services such as mail delivery and school buses.
- Maintaining emergency vehicle access to private property.
- Developing plans as required by county or state permits to accommodate traffic where construction would require closures of state or county-maintained roads for longer periods.
- Posting caution signs on county and state-maintained roads, where appropriate, to alert motorists of construction and warn them of slow traffic.
- Using traffic control measures such as traffic control flaggers, warning signs, lights, and barriers during construction to ensure safety and to minimize localized traffic congestion. These measures will be required at locations and during times when trucks will be entering or exiting highways frequently.
- Using chase vehicles as required (or police vehicles, if required by ODOT) to give drivers additional warning.

- Notifying landowners prior to the start of construction near residences.
- Fencing construction areas near residences at the end of the construction day, and restoring residential roads damaged by construction activities as soon as possible.
- Installing access control devices at locations shown in the Road Classification Guide and Access Control Plan (Attachment B-5 to Exhibit B).

All Project personnel will be required to obey local speed limits and traffic restrictions to ensure safe and efficient traffic flow. Construction vehicles on un-posted project roads will travel at speeds that are reasonable and prudent for the conditions. In the interest of enhancing safety, IPC will work with ODOT and affected counties to establish reduced construction speed limits on impacted roads. These temporary reductions will improve safety throughout the work zones. IPC assumes that local and state law enforcement will enforce traffic regulations on public roads.

4.2.2 Fugitive Dust Mitigation

Construction of the transmission lines and related facilities may generate a temporary increase in fugitive dust. IPC will require its construction contractor to apply dust suppression techniques, such as watering construction areas or removing dirt tracked onto a paved road as necessary to prevent safety hazards or nuisances on access roads and in construction zones near residential and commercial areas and along major highways and interstates.

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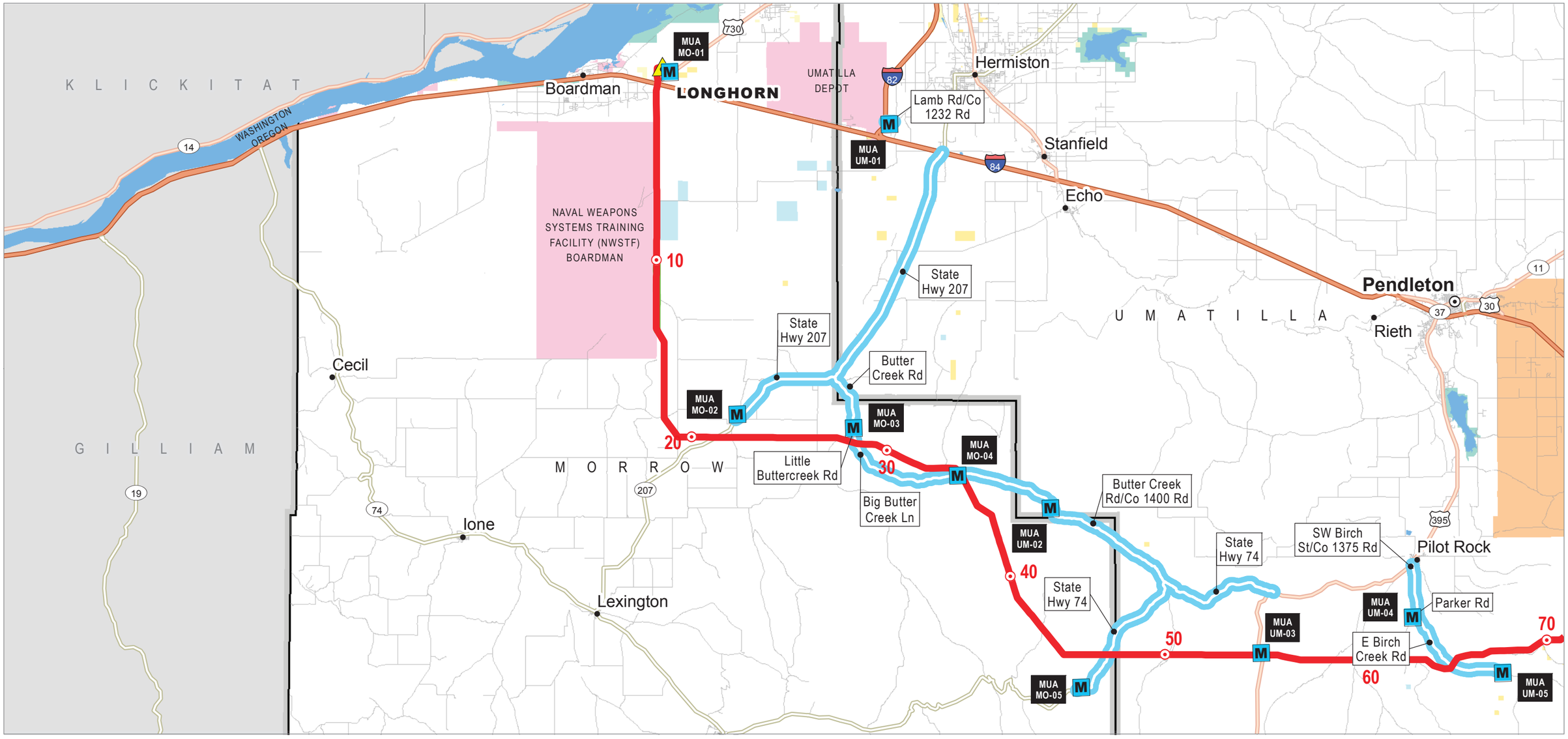
APPENDIX A
BOARDMAN TO HEMINGWAY – PRELIMINARY HAUL ROUTES



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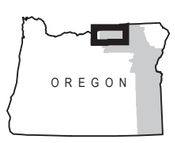

Map Area

Source(s): BLM, Esri, IPC, US Census Bureau

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Transportation Features

- Preliminary Haul Routes

Public Roads

- Interstates
- Highways
- Major Roads
- Other Roads

Project Features

- Proposed Route
- Alternative
- Ten Mile Marker
- Stations
- Multi-Use Area

Land Status

- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Military Reservation and Corps of Engineers
- Other Federal
- Private
- State or Local
- State or Local Wildlife, Parks and Recreation

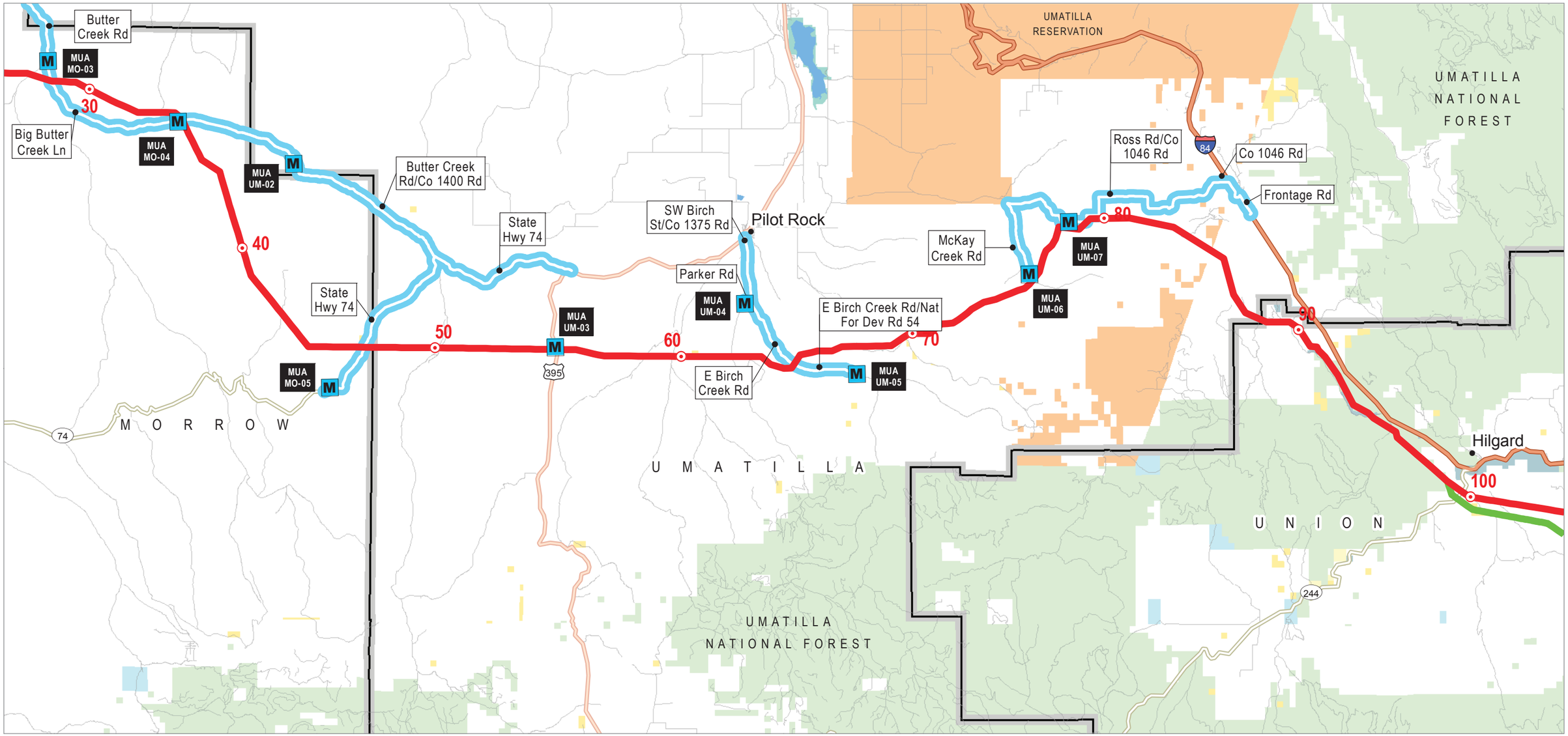
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER
An IDACORP Company

Attachment U-2, Appendix A
Preliminary Haul Routes

Morrow County

Map 1



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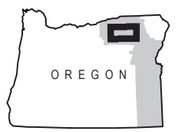

Source(s): BLM, Esri, IPC, US Census Bureau

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Transportation Features
- Preliminary Haul Routes

Public Roads
- Interstates
- Highways
- Major Roads
- Other Roads

Project Features
- Proposed Route
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- Ten Mile Marker
- Multi-Use Area

Land Status
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Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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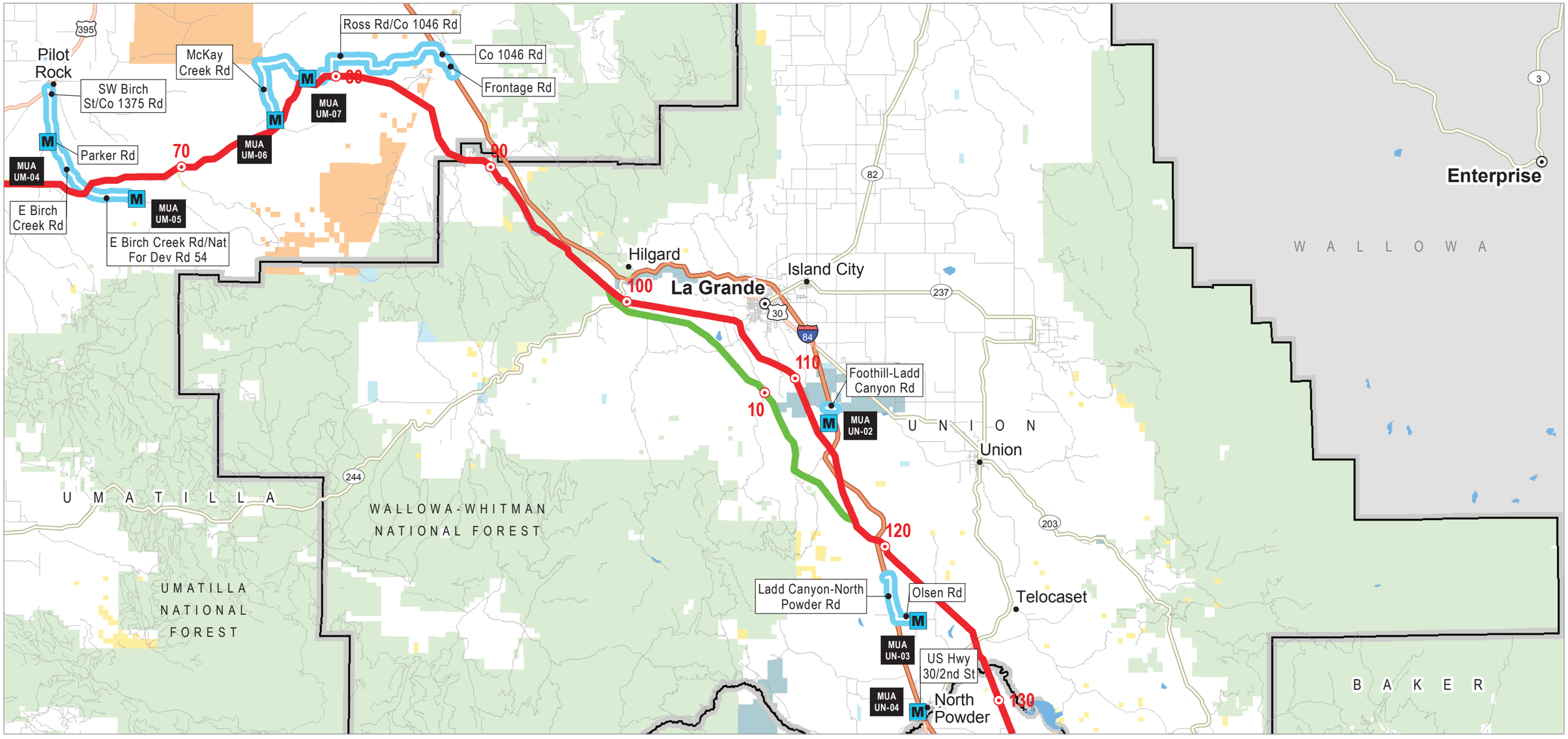
Attachment U-2, Appendix A
Preliminary Haul Routes

Umatilla County

Map 2



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Map Area

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Source(s): BLM, Esri, IPC, US Census Bureau

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Transportation Features
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- Major Roads
- Other Roads

Project Features
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Land Status
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Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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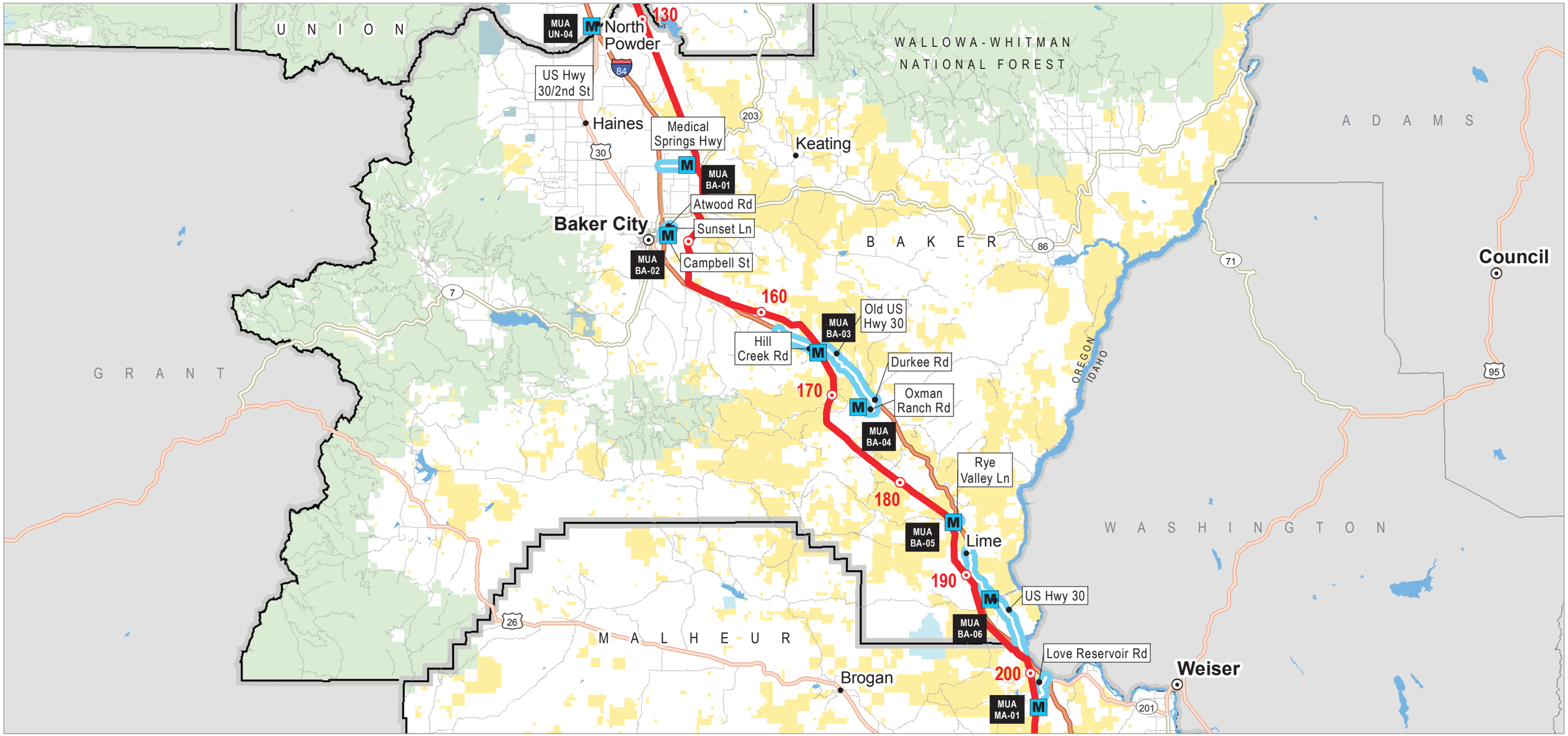
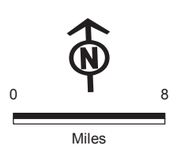
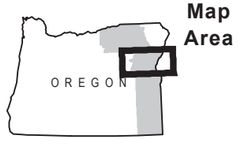
Attachment U-2, Appendix A
Preliminary Haul Routes

Union County

Map 3







Source(s): BLM, Esri, IPC, US Census Bureau

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Transportation Features
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- Public Roads
- Interstates
- Highways
- Major Roads
- Other Roads

Project Features
- Proposed Route
- Ten Mile Marker
- M Multi-Use Area

Land Status
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- Bureau of Reclamation
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Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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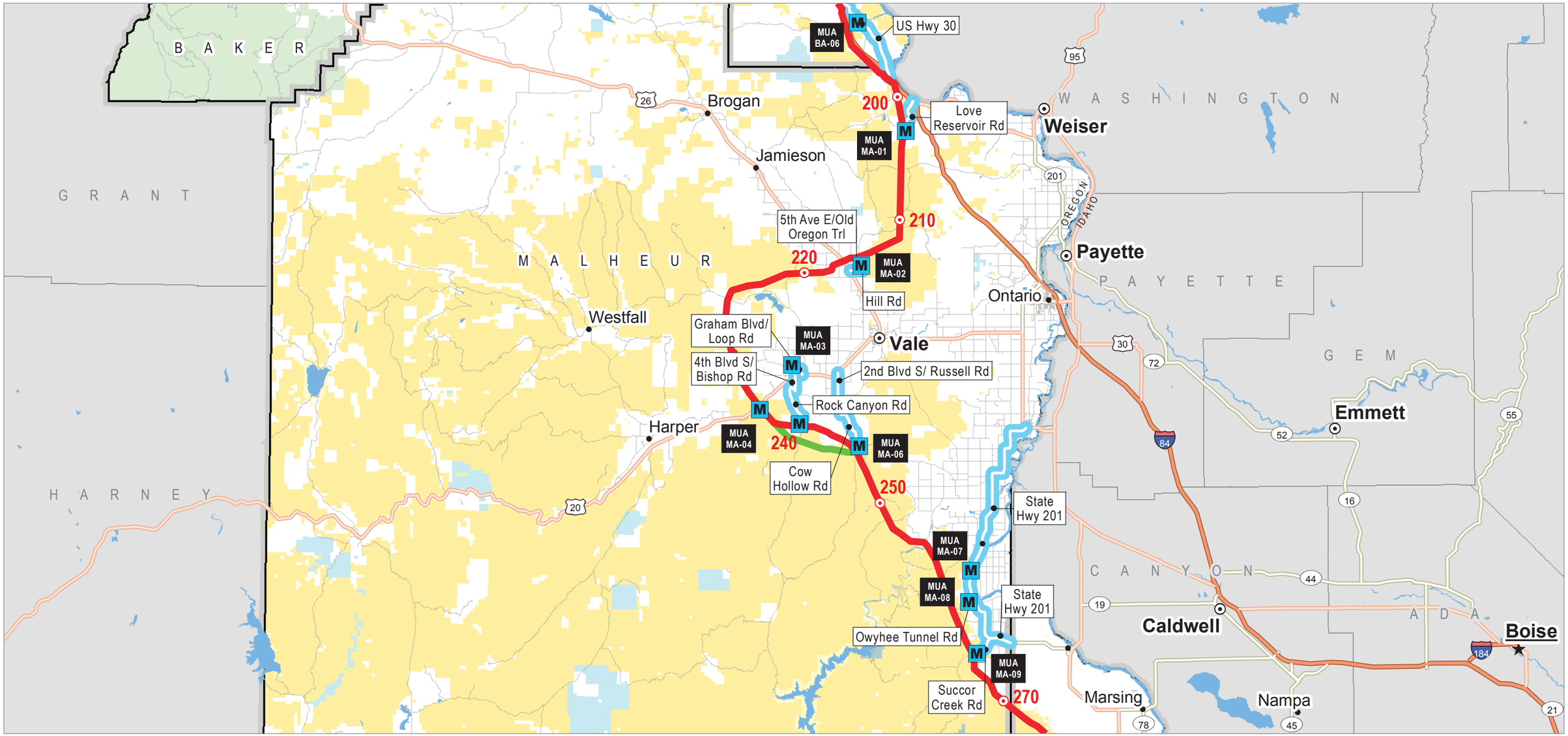
Attachment U-2, Appendix A
Preliminary Haul Routes

Baker County

Map 4



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Map Area

OREGON

Source(s): BLM, Esri, IPC, US Census Bureau

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Transportation Features
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Project Features
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Land Status
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- Forest Service
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Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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An IDACORP Company

Attachment U-2, Appendix A
Preliminary Haul Routes

Malheur County

Map 5

APPENDIX B
BOARDMAN TO HEMINGWAY – 2016 UPDATED TRAFFIC ESTIMATES

Updated Traffic Information (from HDR 2016)

Table B-1. Updated Numbers and Trips of Personal Vehicles[1]

Crew Type	Number of Personal Vehicles	Trips Per Day	Extended Total
Substation Construction	49	2	**98**
ROW Clearing	9	2	**18**
Roads/Pad Grading	9	2	**18**
Foundations	11	2	**22**
Tower Lacing (assembly)	54	2	**108**
Tower Setting (erection)	27	2	**54**
Wire Stringing	29	2	**58**
Restoration	5	2	**10**
Blasting	5	2	**10**
Materials Management	10	2	**20**
Mechanic & Equipment Mgmt.	5	2	**10**
Refueling	5	2	**10**
Dust Control	5	2	**10**
Construction Inspection	5	2	**10**
Materials Testing	5	2	**10**
ENV Compliance	5	2	**10**
Surveyors	5	2	**10**
Totals per 150-mile spread			**486**

[1] Number of vehicles and trips are based on best professional judgment and the projected number of workers outlined in Table U-2 in Exhibit U. These vehicles are assumed to use public roads regularly to commute to various project locations and multi-use areas along the Proposed or Alternative Routes. Vehicle trips generated during peak construction are assumed to be similar for Spread 1 and Spread 2, as well as the Proposed and Alternative Routes.

Table B-2. Updated Numbers and Trips of Construction Vehicles[1]

Crew Type	Light Construction Vehicles[2]	Trips	Extended Total (Light)	Heavy Construction Vehicles[3]	Trips	Extended Total (Heavy)
Substation Construction[4]	20	2	40	5	2	10
ROW Clearing	9	4	36	5	4	20
Road/Pad Grading	9	4	36	9	2	18
Foundations	9	2	18	5	8	40
Tower Lacing (assembly)	27	2	54	0	0	0
Tower Setting (erection)	20	2	40	0	0	0
Wire Stringing	9	4	36	9	4	36
Restoration	3	2	6	0	0	0
Blasting	5	4	20	0	0	0
Materials Delivery	20	8	160	12	2	24
Mechanic & Equipment Mgmt.	5	6	30	0	0	0
Refueling	0	0	0	5	4	20
Dust Control	0	0	0	5	4	20
Construction Inspection	5	8	40	0	0	0
Concrete Testing	5	4	20	0	0	0
ENV Compliance	9	6	54	0	0	0
Surveyors	5	6	30	0	0	0
Totals per 150-mile spread	–	–	**620**	**–**	**–**	**188**

[1] Number of vehicles and trips are based on best professional judgment and the projected number of workers outlined in Table U-2 in Exhibit U. Vehicle trips generated during peak construction are assumed to be similar for Spread 1 and Spread 2, as well as the Proposed and Alternate routes.
[2] Light construction vehicles (<10,000 pounds gross vehicle weight) are assumed to use public roads, project right-of-way and private access roads to move between various project locations and multi-use areas.
[3] Heavy construction vehicles (>10,000 pounds gross vehicle weight) such as large excavators, cranes, feller bunchers and any tracked equipment are assumed to work only within the project right-of-way and on private access roads except when equipment is moved from one portion of the project area to another. These instances are limited and incidental to the overall traffic flow created by the Project.
[4] It is assumed that after construction of the substation is complete, daily traffic volumes on public roads will decrease by approximately 40 trips per day.

As described in Exhibit U, Section 3.3.1, IPC's engineering contractor separated the overall Project into Construction Spread 1 (approximately transmission line milepost 0 to 150) and Construction Spread 2 (approximately transmission line milepost 150 to 299), with construction on each spread occurring simultaneously. Based on Tables B-1 and B-2 and the assumptions described in the footnotes, the total number of one-way vehicle trips on public roads per spread is estimated to be 1,294 per day. Multi-use areas will be located approximately every 15 miles along the Project and will generally be the location of the heaviest construction related traffic as the multi-use area is the centralized hub of activity within a construction segment. For the purposes of traffic analysis, the two spreads are further divided into smaller sections capturing approximately several adjacent multi-use areas per section. The smaller sections are assumed

to be sufficiently separate (geographically) so that the use of local access routes will not overlap between smaller sections. In other words, the traffic impacts will not be additive between adjacent sections. Within one spread, IPC anticipates five smaller sections, and assumes that the 1,294 trips will be split roughly equally among these five sections, which results in 259 daily vehicle trips per group of multi-use areas with additive traffic impacts.