

Exhibit C Project Location

Boardman to Hemingway Transmission Line Project



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Amended Preliminary Application for Site Certificate

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ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
Amended Project Order	First Amended Project Order, Regarding Statutes, Administrative Rules and Other Requirements Applicable to the Proposed Boardman to Hemingway Transmission Line (December 22, 2014)
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
CS	communication station
DoD	Department of Defense
EFSC or Council	Energy Facility Siting Council
ft.	feet
GIS	geographic information system
HMA	Habitat Management Area
I-84	Interstate 84
IPC	Idaho Power Company
kV	kilovolt
LDFY	light-duty fly yard
MP	milepost
MUA	multi-use area
NF	National Forest
NWSTF	Naval Weapons Systems Training Facility
OAR	Oregon Administrative Rule
ODOE	Oregon Department of Energy
OPRD	Oregon Parks and Recreation Department
Project	Boardman to Hemingway Transmission Line Project
RNA	Research Natural Area
ROW	right-of-way
SAG	Special Advisory Groups
U.S.	United States
USFS	United States Forest Service
WMA	Wildlife Management Area

1 **Exhibit C**
2 **Project Location**

3 **1.0 INTRODUCTION**

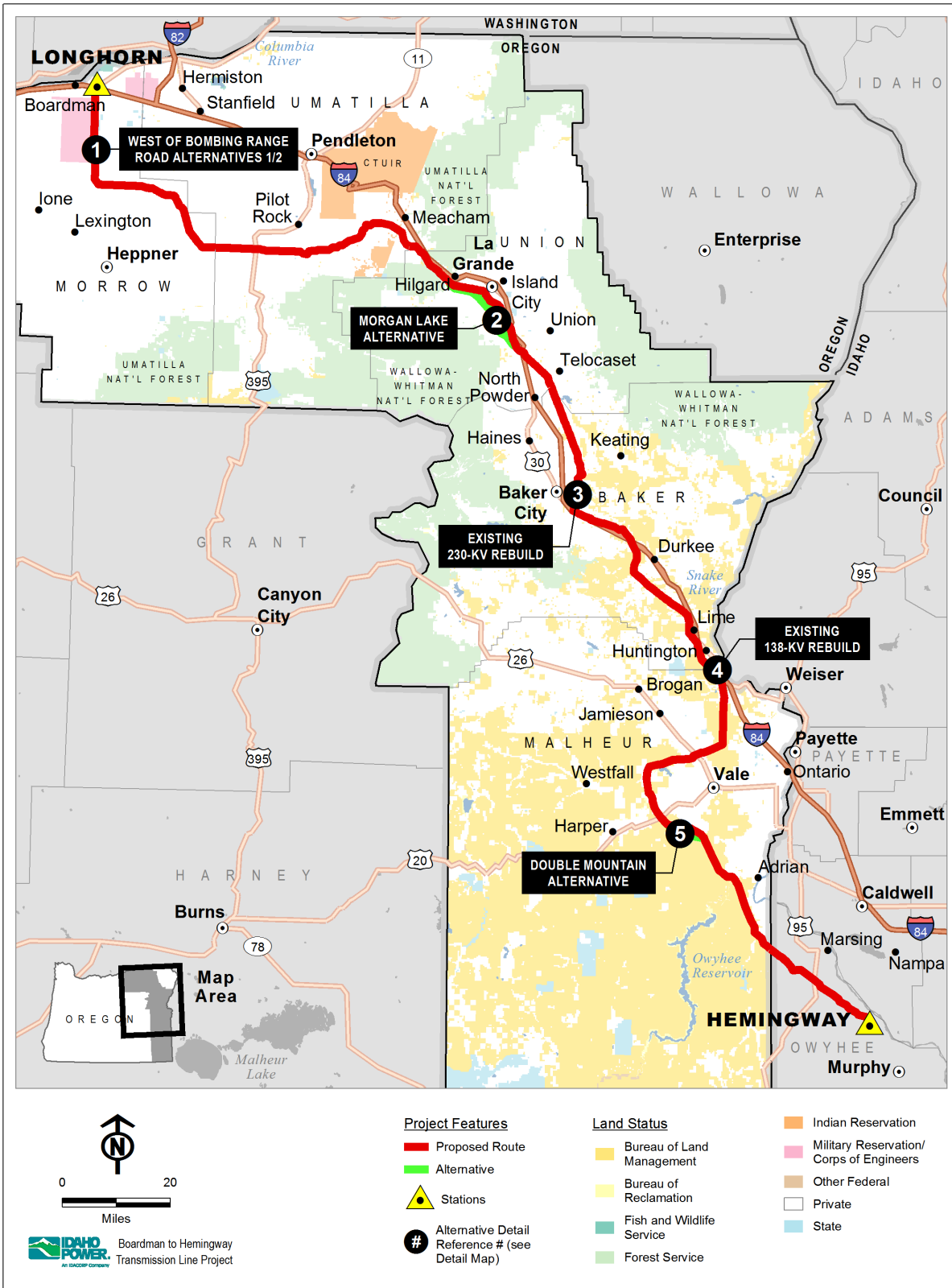
4 Exhibit C provides information about the location of the Boardman to Hemingway Transmission
5 Line Project (Project). The Project may be located anywhere within the Site Boundary, which
6 represents the perimeter of the site of the proposed Project, its related and supporting facilities,
7 the temporary laydown and staging areas, and the proposed and alternative transmission line
8 routes. The final location of the Project within the Site Boundary will depend on topography,
9 landowner preference, and other factors.

10 The following Project features will be located within the Site Boundary:

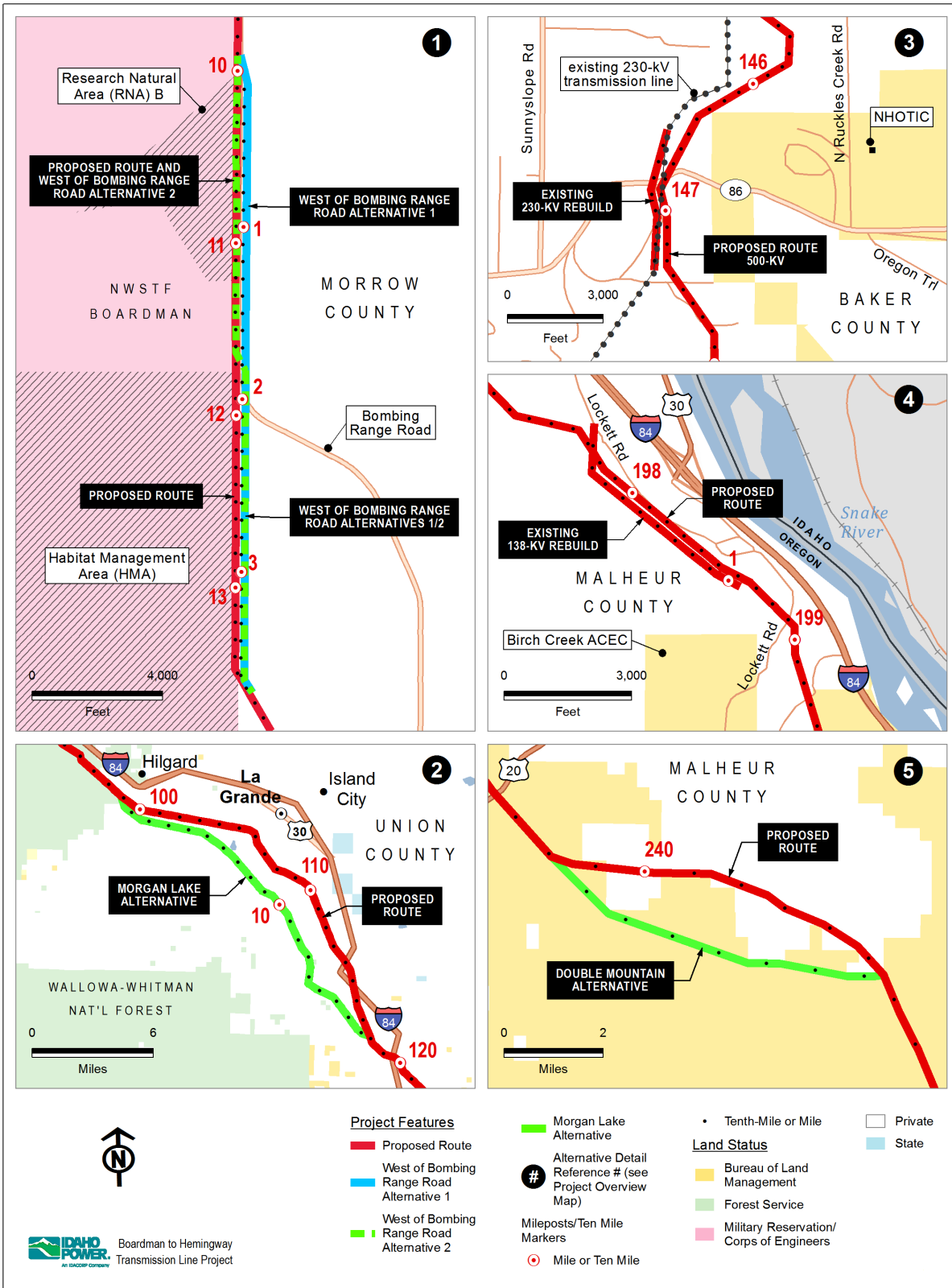
- 11 • The Proposed Route, consisting of 270.8 miles of new 500-kilovolt (kV) electric
12 transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of
13 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV
14 transmission line;
- 15 • Four alternatives that each could replace a portion of the Proposed Route, including the
16 West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road
17 Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain
18 Alternative (7.4 miles);
- 19 • One proposed 20-acre station (Longhorn Station);
- 20 • Ten communication station (CS) sites of less than ¼-acre each and two alternative
21 communication station sites;
- 22 • Permanent access roads for the Proposed Route, including 206.3 miles of new roads
23 and 223.2 miles of existing roads requiring substantial modification, and for the
24 Alternative Routes, including 30.2 miles of new roads and 22.7 miles of existing roads
25 requiring substantial modification; and
- 26 • Thirty-one temporary multi-use areas and 299 pulling and tensioning sites of which four
27 will have light-duty fly yards within the pulling and tensioning sites.

28 The Site Boundary width or size is described in Section 3.5 and Table C-24 of this exhibit. The
29 Project features are described in detail in Exhibit B.

30 The following map, Figure C-1 on the following page, shows the location of the Proposed Route.
31 Figure C-2 shows the alternative routes and the 230-kV and 138-kV rebuilds.



1
2 **Figure C-1. Map of Proposed Route**



1

2

Figure C-2. Map of Alternative Routes and 230-kV and 138-kV Rebuilds

2.0 APPLICABLE RULES AND AMENDED PROJECT ORDER PROVISIONS

2.1 Site Certificate Application Requirements

Oregon Administrative Rule (OAR) 345-021-0010(1)(c) provides that Exhibit C must include:

(A) A map or maps showing the proposed locations of the energy facility site, all related or supporting facility sites and all areas that might be temporarily disturbed during construction of the facility in relation to major roads, water bodies, cities and towns, important landmarks and topographic features, using a scale of 1 inch = 2000 feet or smaller when necessary to show detail.

(B) A description of the location of the proposed energy facility site, the proposed site of each related or supporting facility and areas of temporary disturbance, including the total land area (in acres) within the proposed site boundary, the total area of permanent disturbance, and the total area of temporary disturbance. If a proposed pipeline or transmission line is to follow an existing road, pipeline or transmission line, the applicant shall state to which side of the existing road, pipeline or transmission line the proposed facility will run, to the extent this is known.

(C) For energy generation facilities, a map showing the approximate locations of any other energy generation facilities that are known to the applicant to be permitted at the state or local level within the study area as defined in OAR 345-001-0010 for impacts to public services.¹

2.2 Amended Project Order Provisions

The Amended Project Order includes the following discussion regarding Exhibit C:

Maps shall indicate the “site boundary” as defined in OAR 345-001-0010(55). Maps shall provide enough information for property owners potentially affected by the facility to determine whether their property is within or adjacent to the site boundary. Major roads should be named. The application for a site certificate should include identification of lands enrolled in the Conservation Reserve Program and lands currently zoned for Exclusive Farm Use. IPC should include maps drawn to a scale of 1 inch = 2,000 feet or smaller when necessary to show detail. The Department requests that IPC share GIS [geographic information system] data for the proposed facility in a format that is compatible with current Department software programs; accurate GIS data will help streamline the application review process for the Department and reviewing agencies.

Maps shall clearly show the boundaries of the proposed corridor within which the transmission line would be constructed, and should include familiar landmarks such as roads and existing power lines that reviewing agencies and affected landowners may use to identify the proposed route. Aerial photographs with all roads identified are helpful for public interpretation and review. The site boundaries of all proposed related or supporting facilities, including but not limited to access roads, temporary laydown areas, switching stations/substations, must also be identified. Maps showing access roads included as related or supporting facilities should clearly depict where existing roads or road segments are proposed to be modified. Please clearly identify the county and city jurisdictions in which facility components are proposed to be located. All county and city

¹ The Project does not include an energy generation facility, and therefore, OAR 345-021-0010(1)(c) is not applicable to the Project.

1 *jurisdictions in which facility components are proposed to be located must be appointed*
 2 *as Special Advisory Groups (SAGs) by the EFSC.*

3 *Exhibit C shall contain a table listing the approximate land areas for both temporary*
 4 *disturbance associated with construction and permanent footprint of structures*
 5 *associated with facility operation for each type of disturbance or structure. This*
 6 *information needs to be consistent with information provided in other exhibits.*

7 (Amended Project Order, Section III(c)).

8 **3.0 ANALYSIS**

9 **3.1 Maps Showing the Proposed Locations**

10 OAR 345-021-0010(1)(c): Exhibit C: Information about the location of the proposed facility,
 11 including: (A) A map or maps showing the proposed locations of the energy facility site, all
 12 related or supporting facility sites and all areas that might be temporarily disturbed during
 13 construction of the facility in relation to major roads, water bodies, cities and towns, important
 14 landmarks and topographic features, using a scale of 1 inch = 2000 feet or smaller when
 15 necessary to show detail.

16 The location of the Proposed Route, alternative routes, the related or supporting facilities, and
 17 the areas that might be temporarily disturbed during the construction of the facilities are
 18 provided in Attachment C-1, Attachment C-2, and Attachment C-3 as follows.

- 19 • Attachment C-1 provides a map showing the location of the Longhorn Station. The scale
 20 of the map is 1 inch equals 1,000 feet.
- 21 • Attachment C-2 contains a map-set organized by county proceeding north to south
 22 showing the location of the Proposed Route. Each set of county maps includes a county
 23 overview map and a series of detailed maps that are at a scale of 1 inch equals 1,000 feet.
 24 Project features shown include the Site Boundary, tower locations, access roads, stations,
 25 communication station sites, and communication distribution lines within the Idaho Power
 26 Company (IPC) service area. Temporary project features are also shown, including
 27 structure work areas, multi-use areas, pulling and tensioning sites, and light-duty fly yards.
- 28 • Attachment C-3 contains a map-set showing the alternative routes. This map-set is
 29 organized by alternative proceeding north to south and is at a scale of 1 inch equals
 30 1,000 feet.

31 **3.2 Description of the Proposed Locations**

32 OAR 345-021-0010(1)(c)(B): A description of the location of the proposed energy facility site, the
 33 proposed site of each related or supporting facility and areas of temporary disturbance including
 34 the approximate land area of each. If a proposed pipeline or transmission line is to follow an
 35 existing road, pipeline or transmission line, the applicant shall state to which side of the existing
 36 road, pipeline or transmission line the proposed facility will run, to the extent this is known;

37 The Project will occur on federal, state, and private lands in five counties in Oregon and one
 38 county in Idaho. The description of the Project contained herein is limited to the Project features
 39 located in Oregon. Table C-1 describes the ownership of the lands where the Proposed Route
 40 and alternative routes will be located.

1 **Table C-1. Route Mileage Summary by Land Manager/Owner¹**

Route Name	County	Total Miles	BLM		BOR		DoD/ USACE		State		Private		USFS	
			Miles	%	Miles	%	Miles	%	Miles	%	Miles	%	Miles	%
Proposed Route														
Proposed Route	Morrow	47.5	–	–	–	–	10.5	22%	–	–	36.9	78%	–	–
	Umatilla	40.9	–	–	–	–	–	–	–	–	40.9	100%	–	–
	Union	39.9	0.2	<1%	–	–	–	–	1.1	3%	31.5	81%	7.1	18%
	Baker	68.4	11.9	17%	–	–	–	–	–	–	56.5	83%	–	–
	Malheur	74.1	53.3	72%	0.5	1%	–	–	–	–	20.2	27%	–	–
230-kV Rebuild	Baker	0.9	–	–	–	–	–	–	–	–	0.9	100%	–	–
138-kV Rebuild	Malheur	1.1	–	–	–	–	–	–	–	–	1.1	100%	–	–
69-kV Removal ²	Morrow	12.0	–	–	–	–	10.5	88%	–	–	1.5	13%	–	–
Alternative Routes														
West of Bombing Range Road 1	Morrow	3.7	–	–	–	–	0.1	3%	–	–	3.6	97%	–	–
West of Bombing Range Road 2	Morrow	3.7	1.8	49%	–	–	–	–	–	–	1.9	51%	–	–
Morgan Lake	Union	18.5	0.8	4%	–	–	–	–	–	–	17.7	96%	–	–
Double Mountain	Malheur	7.4	7.4	100%	–	–	–	–	–	–	–	–	–	–

¹ All totals are rounded and may not sum exactly. Dash indicates zero.

² Miles of 69-kV removal are not included in total route summary.

BLM – U.S. Department of the Interior, Bureau of Land Management; BOR – Bureau of Reclamation; DoD – Department of Defense; USACE – United States Army Corps of Engineers; USFS – United States Forest Service.

1 Certain multi-use areas (MUA) will be located within the cities of North Powder (27 acres) and
 2 Huntington (8.8 acres). MUAs are identified by the first two letters of the county they are in and
 3 numbered from north to south. For example, the first multi-use area in Morrow County is labeled
 4 as MUA MO-01. Light-duty fly yards (LDFY) are labeled in a similar fashion.

5 **3.2.1 Proposed Longhorn Station and Proposed Route**

6 **3.2.1.1 Proposed Longhorn Station**

7 The northern terminus for the Project is the proposed Longhorn Station. Bonneville Power
 8 Administration (BPA) has planned the Longhorn Station on land it purchased from the Port of
 9 Morrow. In this application, IPC is requesting authorization to develop (construct and operate)
 10 the Longhorn Station if BPA does not develop the Longhorn Station on a timely basis.

11 The Longhorn Station will be approximately 20 acres in size and will be located just west of the
 12 Port of Morrow, about 0.25 to 0.5 mile north of Interstate 84 (I-84) (see Attachment C-1, Figure
 13 C-1). BPA has planned the Longhorn Station to allow a 230-kV connection to the 500-kV
 14 transmission grid for an unrelated wind project. Typical equipment proposed to support the
 15 Project termination is described in Exhibit B, Section 3.2.

16 **3.2.1.2 Proposed Route**

17 The Proposed Route is described below by county.

18 **Segment 1 – Morrow County**

19 The Proposed Route crosses approximately 47.5 miles in Morrow County beginning at the
 20 proposed Longhorn Station (see Attachment C-2, Maps 1-23). The predominant land uses are
 21 irrigated agriculture, dryland farming, rangeland, and the Naval Weapons Systems Training
 22 Facility (NWSTF) Boardman. Table C-2 lists the Project features and existing roads, railroads,
 23 and transmission lines crossed by the Proposed Route. Table C-18 lists the acres that would be
 24 disturbed during Project construction or affected during operations.

25 **Table C-2. Proposed Route Features – Morrow County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	147
Towers – Single Circuit 500-kV H-Frame	73
Towers – Single Circuit 500-kV 3-Pole Dead-end	1
Communication Station(s)	1
Light Duty Fly Yards	0
Multi-Use Areas	5
Pulling and Tensioning Sites	39
Station	1
Access Roads	Total Miles
Existing, 21-70% Improved	19.4
Existing, 71-100% Improved	10.8
New, Bladed	1.4
New, Primitive	10.6

Crossings by Proposed Route	Number of Crossings
High-Voltage Transmission Line Crossings ¹	1
Existing Road Crossings ²	3
Existing Railroad Crossings ³	1

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

- 1 The Proposed Route exits the Longhorn Station to the west, generally paralleling an existing
2 500-kV transmission line for about 0.3 miles. The Proposed Route then turns south and crosses
3 I-84, coming in parallel with Bombing Range Road on the east side until milepost (MP) 1.2. At
4 that point, the Proposed Route crosses but stays in parallel with the west side of Bombing
5 Range Road. At MP 3.0, the Proposed Route enters the NWSTF Boardman property utilizing
6 the existing 90-foot-wide BPA 69-kV right-of-way (ROW). Structures for the portion of the
7 Project within the existing BPA ROW will be 100 feet or less in height. From MP 7 to MP 9, the
8 Proposed Route passes through the NWSTF Boardman approach zone easement; tower
9 heights in this stretch also will be less than 100 feet.
- 10 From MP 10 to MP 11.2, the Proposed Route crosses a portion of the Boardman Research
11 Natural Area (RNA) located on NWSTF Boardman. The Boardman RNA was established in
12 1978 as part of a federal government system established for research and educational
13 purposes. It is co-managed by the Navy and The Nature Conservancy.
- 14 From MP 11.7 to MP 13.5 the Proposed Route crosses a portion of the NWSTF Boardman's
15 Habitat Management Area (HMA). The Boardman HMA was established in 2016 as mitigation
16 for training impacts to the Washington ground squirrel.
- 17 At MP 13.5, the Proposed Route leaves the existing BPA 69-kV ROW and the NWSTF
18 Boardman and proceeds in a southeasterly direction. At MP 15.4, the irrigated agriculture along
19 the Proposed Route comes to an end and dryland farming becomes the dominant land use. At
20 MP 18, the Proposed Route turns southeast and then at MP 19.3 turns due east crossing
21 Bombing Range Road. The Proposed Route continues due east crossing lands under dryland
22 farming practices. At MP 21.2 the Proposed Route crosses State Highway 207, at MP 27.5 it
23 crosses Pine City Road and Little Butter Creek, at MP 28.3 it crosses Butter Creek and Big
24 Butter Creek Lane, and at MP 34 it again crosses Big Butter Creek Lane and Butter Creek.
- 25 From MP 34, the Proposed Route proceeds generally south paralleling a tributary of Buttermilk
26 Creek. At MP 43.2, the Proposed Route crosses Huges-Hirl Road and Matlock Canyon. At
27 MP 44.9, the Proposed Route turns due east and, at MP 47. 1, it crosses State Highway 74.
28 The Proposed Route exits Morrow County at MP 47.5 and continues into Umatilla County.
- 29 There will be five multi-use areas in Morrow County. Table C-14 identifies the location, size, and
30 land status of each of the multi-use areas.
- 31 • MUA MO-01 will be located approximately 0.75 mile northeast of MP 1.0 and
32 approximately 0.25 mile southeast of the Longhorn Station. This site is immediately
33 north of U.S. Highway 730. The land comprises grassland and is zoned Port Industrial
34 by Morrow County (Attachment C-2, Map 1).
 - 35 • MUA MO-02 will be located approximately 2 miles southeast of MP 18.8, adjacent to
36 State Highway 207. The land comprises grassland and is zoned as Agriculture –
37 Exclusive Farm Use by Morrow County (Attachment C-2, Map 10).

1 MUA MO-03 will be located along Big Butter Creek Lane. The land comprises grassland
2 and is zoned as Agriculture – Exclusive Farm Use by Morrow County (Attachment C-2,
3 Map 13).

4 • MUA MO-04 will be located approximately 0.1 mile south of MP 34 along Big Butter
5 Creek Lane. The land comprises grassland and is zoned as Agriculture – Exclusive
6 Farm Use by Morrow County (Attachment C-2, Map 15).

7 • MUA MO-05 will be located approximately 1.6 miles south of MP 46 along State
8 Highway 74. The land comprises grassland and is zoned as Agriculture – Exclusive
9 Farm Use by Morrow County (Attachment C-2, Map 23).

10 There are no light-duty fly yards in Morrow County.

11 There is one communication station in Morrow County. Table C-11 identifies the specific
12 location of each of the communication stations.

13 • CS MO-01 will be located at approximately MP 21.2 and is directly north of State
14 Highway 207. The land comprises a dryland wheat field and is zoned as Agriculture –
15 Exclusive Farm Use by Morrow County (Attachment C-2, Map 9).

16 **Segment 2 – Umatilla County**

17 The Proposed Route crosses approximately 40.8 miles of privately-owned land in Umatilla
18 County (see Attachment C-2, Maps 24-44). Table C-3 lists the Project features and existing
19 roads, railroads, and transmission lines crossed by the Proposed Route. Table C-18 lists the
20 acres that would be disturbed during construction or affected during operations.

21 **Table C-3. Proposed Route Features – Umatilla County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	161
Communication Station(s)	2
Light Duty Fly Yards	1
Multi-Use Areas	7
Pulling and Tensioning Sites	41
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	15.6
Existing, 71-100% Improved	21.2
New, Bladed	5.1
New, Primitive	7.4
Crossings by Proposed Route	Number of Crossings
High-Voltage Transmission Line Crossings ¹	0
Existing Road Crossings ²	1
Existing Railroad Crossings ³	0

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

22 The Proposed Route crosses into Umatilla County from Morrow County at MP 47.5,
23 approximately 4 miles southwest of the community of Vinson, Oregon. The Proposed Route
24 proceeds due east through lands predominantly under dryland farming practice and zoned as

1 Exclusive Farm Use. At MP 50.0, the Proposed Route crosses U.S. Route 395 and Butter
2 Creek. At MP 58.6, the Proposed Route crosses Bear Creek, and then at MP 59.7 it crosses
3 West Birch Creek. At MP 64.7, the Proposed Route crosses East Birch Creek. At this point, the
4 Proposed Route is approximately 5.5 miles south of the town of Pilot Rock. Now heading
5 northeast, the Proposed Route begins climbing into the foothills of the Blue Mountains. Land
6 use transitions from dryland farming to open rangeland with scattered timber stands along
7 north-facing slopes. At MP 75.6, the Proposed Route crosses McKay Creek.

8 After crossing McKay Creek, the Proposed Route turns north and proceeds across rangeland
9 with scattered stands of trees for about 2.5 miles before turning again to the east. Here the
10 Proposed Route enters predominantly forested lands for roughly the next 10 miles. Between
11 MP 84 and MP 85, approximately 2.8 miles southwest of the community of Meacham, the
12 Proposed Route remains west of a segment of the Blue Mountain Forest State Scenic Route,
13 passing into Union County at MP 88.3.

14 There will be seven multi-use areas in Umatilla County. Table C-14 identifies the location, size,
15 and land status of each of the multi-use areas.

- 16 • MUA UM-01 will be in the northwest part of the county adjacent to Interstate 82
17 approximately 0.6 mile north of I-84. The land is bare. The western two-thirds is zoned
18 by Umatilla County as Light Industrial while the eastern third is zoned Rural Tourist
19 Commercial (Attachment C-2, Map 24).
- 20 • MUA UM-02 will be approximately 3.0 miles east of MP 37, on the west side of Butter
21 Creek Road. The land comprises grassland and is zoned by Umatilla County as
22 Agriculture – Exclusive Farm Use (Attachment C-2, Map 25).
- 23 • MUA UM-03 will be located just north of MP 54.9 and west of U.S. Highway 395. The
24 land comprises rangeland and is zoned by Umatilla County as Agriculture – Exclusive
25 Farm Use (Attachment C-2, Map 28).
- 26 • MUA UM-04 will be located approximately 2.8 miles south of Pilot Rock and west of East
27 Birch Creek Road. The land comprises grassland and zoned by Umatilla County as
28 Agriculture – Exclusive Farm Use (Attachment C-2, Map 32).
- 29 • MUA UM-05 will be located approximately 1.2 mile south of MP 68 on the south side of
30 East Birch Creek Road. The land comprises grassland and is zoned by Umatilla County
31 as Agriculture – Exclusive Farm Use (Attachment C-2, Map 37).
- 32 • MUA UM-06 will be located approximately 0.2 mile northwest of MP 75.5 on the west
33 side of McKay Creek Road. The land comprises grassland and is zoned by Umatilla
34 County as Agriculture – Exclusive Farm Use (Attachment C-2, Map 39).
- 35 • MUA UM-07 will be located approximately 0.3 mile northeast of MP 78. The land
36 comprises grassland and is zoned by Umatilla County as Agriculture – Exclusive Farm
37 Use and Critical Winter Range Overlay (Attachment C-2, Map 41).

38 There will be one light-duty fly yard in Umatilla County. Table C-17 identifies the location, size,
39 and land use status of each of the light-duty fly yards.

- 40 • LDFY UM-01 will be located at MP 87.6 and is zoned by Umatilla County as Grazing
41 Farm Zone (Attachment C-2, Map 44).

42 There are two communication station in Umatilla County. Table C-11 identifies the specific
43 location of each of the communication stations.

- 1 • CS UM-01 will be located at approximately MP 54.6 and is 0.4 mile west of U.S. Route
2 395. The land comprises grassland and is zoned by Umatilla County as Agriculture –
3 Exclusive Farm Use (Attachment C-2, Map 28).
- 4 • CS UM-02 will be located at approximately MP 79.2 and just south of Ross Road. The
5 land comprises grassland and is zoned by Umatilla County as Agriculture – Exclusive
6 Farm Use and Critical Winter Range Overlay (Attachment C-2, Map 41)

7 **Segment 3 – Union County**

8 The Proposed Route traverses Union County for 39.9 miles (see Attachment C-2, Maps 45-63).
9 Table C-4 lists the Project features and existing roads, railroads and transmission lines crossed
10 by the Proposed Route. Table C-18 lists the acres in Union County that would be disturbed
11 during construction or affected during operations.

12 **Table C-4. Proposed Route Features – Union County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	169
Communication Station(s)	2
Light Duty Fly Yards	0
Multi-Use Areas	4
Pulling and Tensioning Sites	43
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	31.1
Existing, 71-100% Improved	6.4
New, Bladed	7.2
New, Primitive	0.4
Crossings by Proposed Route	Number of Crossings
High-Voltage Transmission Line Crossings ¹	3
Existing Road Crossings ²	4
Existing Railroad Crossings ³	3

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

13 After entering Union County at MP 88.3, the Proposed Route turns southeast, passing between
14 two segments of the Blue Mountain Forest State Scenic Corridor, adjacent and offset to the
15 southwest from the existing BPA 230-kV transmission line. At MP 91.4, the Proposed Route
16 enters the Wallowa-Whitman National Forest (NF), where it is within the designated utility
17 corridor for 6.3 of the total 7.5 miles of Wallowa-Whitman NF land crossed. The utility corridor of
18 the Wallowa-Whitman NF is designated NF Management Area 17, and is identified as the
19 Power Transportation Facility Retention Corridor (USFS 1990). The Proposed Route shares the
20 Wallowa-Whitman NF utility corridor with I-84, a Union Pacific railway line, a 230-kV
21 transmission line, a refined petroleum products pipeline, and a large diameter natural-gas
22 pipeline. The land is predominantly forested with areas of open shrub and grassland on some
23 south facing slopes.

24 Between MP 94.6 and 94.8, while still inside the designated utility corridor, the Proposed Route
25 crosses Railroad Canyon, a portion of the Blue Mountain Forest State Scenic Corridor. The Blue

1 Mountain Forest State Scenic Corridor comprises six separate areas located along I-84 and the
2 Old Oregon Trail Highway. These parcels extend from Deadman's Pass Rest Area in Umatilla
3 County south to Spring Creek in Union County (OPRD 2011a).

4 Between MP 96 and 105.8, the Proposed Route parallels within 250 feet of BPA's existing
5 Round Up to La Grande 230-kV transmission line.

6 At MP 98.8, the Proposed Route exits the Wallowa-Whitman NF and the designated utility
7 corridor. At MP 99.6, the Proposed Route crosses over the Grande Ronde River approximately
8 1.0 mile south of Hilgard Junction State Park. Hilgard Junction State Park is located 8 miles
9 west of La Grande at the intersection of I-84 and State Highway 244 near the Grande Ronde
10 River (OPRD 2011b). At MP 100, the Proposed Route proceeds easterly for approximately
11 5.8 miles, generally parallel to the south side and offset 250 feet from the existing BPA 230-kV
12 transmission line.

13 At MP 105.8, the Proposed Route angles to the south, away from the existing 230-kV line,
14 which continues east into the city of La Grande. At this point, the Proposed Route is
15 approximately 0.4 mile west of the La Grande city limits. The Proposed Route continues south
16 until reaching MP 107.9, at which point it again turns to the east. At MP 110, the Proposed
17 Route turns to the southeast. For the next 43.4 miles, the Proposed Route parallels at varying
18 distances to the existing Quartz to La Grande 230-kV transmission line. In most cases, the two
19 lines will be separated by 250 feet for this distance.

20 Between MP 110.5 and MP 111.5, the Proposed Route crosses over the Glass Hill Unit of the
21 Ladd Marsh Wildlife Management Area (WMA). The Ladd Marsh WMA was established in 1949,
22 with the primary objectives of protecting and improving waterfowl habitat and providing a public
23 hunting area. The portion of the Ladd Marsh WMA crossed by the Project is an area that
24 supports forest and mixed shrub uplands and the existing Quartz to La Grande 230-kV
25 transmission line. The Proposed Route crosses over Ladd Creek and I-84 at MP 114.1, crosses
26 I-84 again at MP 115.6 and a third time at MP 119.4.

27 The Proposed Route continues southeast crossing mostly open rangeland. At MP 126.8, the
28 Proposed Route crosses State Highway 237, which is a segment of the state designated scenic
29 byway called the Grande Tour Route. At MP 128.2, the Proposed Route is approximately
30 3.5 miles northeast of the city of North Powder. At this point, the Proposed Route crosses the
31 Union Pacific Railroad and the Powder River, and exits Union County crossing into Baker County.

32 There will be four multi-use areas in Union County. Table C-14 identifies the location, size, and
33 land status of each of the multi-use areas.

- 34 • MUA UN-01 will be located approximately 0.9 mile east of I-84 and U.S. Highway 30
35 interchange (Exit 265) on Pierce Road. It will be directly across Pierce Road from the
36 La Grande Municipal Airport. The land is under agricultural production and zoned by
37 Union County as Exclusive Farm Use A-1 (Attachment C-2, Map 52).
- 38 • MUA UN-02 will be located approximately 0.2 mile west of the Oregon Department of
39 Transportation Charles Reynolds East Bound Rest Area on I-84. The land is under
40 agricultural production and zoned by Union County as Exclusive Farm Use A-1
41 (Attachment C-2, Map 54 and Attachment C-3, Map 14).
- 42 • MUA UN-03 will be located approximately 1.8 miles west of MP 125 on the corner of
43 Olsen and Bagwell roads. The land is grassland but may have previously supported
44 agricultural production and is zoned by Union County as Exclusive Farm Use A-1
45 (Attachment C-2, Map 60).

- MUA UN-04 will be southwest of North Powder along the west side of I-84 and along the north side of U.S. Highway 30. It will be partially within the city limits of North Powder. This MUA will be located on a parcel of land that is bare ground. A portion of the site is zoned by North Powder as Commercial Interchange. The remainder of the parcel is zoned by Union County as Exclusive Farm Use A-1 (Attachment C-2, Map 62).

There are no light-duty fly yards in Union County.

There are two communication stations in Union County. Table C-11 identifies the specific location of each of the communication stations.

- CS UN-01 will be located at approximately MP 105.8 and approximately 0.4 mile west of the La Grande city limits. The land comprises shrub land with scattered trees and is zoned by Union County as Timber-Grazing (Attachment C-2, Map 51).
- CS UN-02 will be located at approximately MP 127.5 and is 0.7 mile south of State Highway 237. The land comprises shrub land and is zoned by Union County as Agriculture – Grazing (Attachment C-2, Map 61).

Segment 4 – Baker County

The portion of the Project in Baker County includes 68.4 miles of new transmission line and the 0.9-mile 230-kV rebuild (see Attachment C-2, Maps 63-92). The majority of the route in Baker County traverses open rangeland with little or no development. Table C-5 lists the Project features and existing roads, railroads, and transmission lines crossed by the Proposed Route. Table C-18 lists the acres in Baker County that would be disturbed during construction or affected during operations.

Table C-5. Proposed Route Features – Baker County

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	281
Towers – Single Circuit 230-kV H-Frame	5
Towers – Single Circuit 230-kV 3-Pole Dead-end	4
Communication Station(s)	2
Light Duty Fly Yards	1
Multi-Use Areas	6
Pulling and Tensioning Sites	61
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	41.0
Existing, 71-100% Improved	22.2
New, Bladed	22.2
New, Primitive	6.0
Crossings by Proposed Route	Number of Crossings
High-Voltage Transmission Line Crossings ¹	9
Existing Road Crossings ²	3
Existing Railroad Crossings ³	1

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

1 Once across the Powder River (the border between Baker and Union Counties in this location)
2 and into Baker County, the Proposed Route crosses about 13.1 miles of rangeland as it
3 continues southeast, parallel and offset about 250 feet west of the existing IPC Quartz to
4 La Grande 230-kV transmission line. At MP 132, the Proposed Route passes about 2 miles
5 west of the Thief Valley Reservoir, which is located on the North Powder River.

6 At MP 142.7, the Proposed Route angles to the southeast, across State Highway 203.
7 Approximately 0.8 mile beyond this road crossing, the Proposed Route crosses over the existing
8 IPC 230-kV transmission line proceeding almost due south about 2.2 miles along the eastern
9 edge of agricultural fields to MP 146.2.

10 Between MP 146.2 and MP 146.9, the Proposed Route crosses the Oregon Trail and passes
11 west of the National Historic Oregon Trail Interpretive Center. Between MP 146.5 and 147.3, the
12 existing 230-kV line would be rebuilt to allow both the 500-kV and 230-kV towers to be co-
13 located in a valley between ridgelines in the Prospects Range. The rebuild shifts the 230-kV
14 towers several hundred feet to the east to make room for the 500-kV towers within this valley,
15 minimizing visibility from surrounding vantage points by locating the towers at the lowest
16 elevation for maximum screening from topography of the surrounding landscape. At MP 146.8,
17 the Proposed Route crosses over State Highway 86, a designated scenic route by Baker
18 County.

19 Land use in the area between State Highway 203 to State Highway 86 includes 0.1 miles of
20 irrigated agricultural land and 4.0 miles of shrub-steppe and grassland at the eastern edge of
21 the Baker Valley. The Proposed Route passes within 125 feet of a segment of the Oregon Trail
22 Area of Critical Environmental Concern (ACEC) and within about 0.7 mile of the National
23 Historic Oregon Trail Interpretive Center.

24 At MP 147.3, the Proposed Route temporarily leaves the corridor with the existing IPC 230-kV
25 transmission line. The Proposed Route then crosses an abandoned gravel pit and continues
26 south around an agricultural pivot. At MP 150.3, the Proposed Route again parallels the existing
27 IPC 230-kV transmission line. After crossing another 3.0 miles of rangeland, the Proposed
28 Route turns southeast at MP 153.4.

29 The Proposed Route angles and proceeds southeasterly from MP 153.4 and begins to parallel
30 the existing IPC Quartz to Weiser 138-kV transmission line and a 69-kV line and an existing
31 pipeline along the northeast side of I-84. At MP 157.0, the existing transmission line is crossed
32 to avoid indirect impacts to sage-grouse habitat. At MP 159.4, the existing 69-kV line is crossed
33 and at MP 162.7 the 138-kV transmission line is again crossed to avoid the Oregon Trail Straw
34 Ranch 1 ACEC, an Oregon Department of Energy (ODOE) protected area. Once around the
35 ACEC, the Proposed Route once again crosses to the south side of the existing transmission
36 lines at MP 164.7 and MP 165.4, and at MP 166 crosses I-84, the Union Pacific Railroad, and
37 an existing underground pipeline.

38 For the next 5 miles, the route diverts from I-84 heading south and crosses open rangeland with
39 little or no development. At MP 171.2, the Proposed Route crosses the Burnt River about 1.2
40 miles upstream from the mouth of the Burnt River Canyon. The Proposed Route at this point is
41 approximately 3.9 miles east of the community of Durkee. At MP 172.3, the Proposed Route
42 turns east crossing the hills to the south and east of the irrigated farmlands of the Durkee
43 Valley.

44 After crossing the Burnt River, the Proposed Route climbs steeply, crossing the hills south of
45 Durkee reaching over 5,000 feet in elevation as it crosses the shoulder of Juniper Mountain.
46 This area consists of open range land with scattered stands of juniper and ponderosa pine on

1 north facing slopes. At MP 185.4, the Proposed Route crosses Dixie Creek and Dixie Creek
2 Road. From here, the Proposed Route turns south and again parallels the existing IPC Quartz
3 to Weiser 138-kV transmission line and an existing underground pipeline. In this section, the
4 Proposed Route crosses through steep terrain that supports open range lands.

5 At the southern end of the Weatherby Mountains, near MP 191, the Proposed Route leaves the
6 Burnt River Canyon and no longer parallels the existing 138-kV transmission line. From here,
7 the Proposed Route begins paralleling the west side of I-84 at a distance of approximately
8 0.3 mile. At MP 193, the Proposed Route is about 1.3 miles west of the city of Huntington. From
9 MP 192 to MP 194.4 and again from MP 196.2 to MP 196.8, the Proposed Route is located
10 within the West-wide Energy corridor. The Proposed Route exits Baker County and crosses into
11 Malheur County at MP 196.5.

12 There will be six multi-use areas in Baker County. Table C-14 identifies the location, size, and
13 land status of each of the multi-use areas.

- 14 • MUA BA-01 will be located approximately 0.6 mile east of MP 142.7 on State Highway
15 203. The area is vacant land and appears to support shrub-steppe, and is zoned by
16 Baker County as Agriculture – Exclusive Farm Use (Attachment C-2, Map 68).
- 17 • MUA BA-02 will be located approximately one-quarter mile east of I-84 immediately east
18 and south of Baker City. It will be about 1.6 miles northwest of the Proposed Route at
19 MP 150. The area is vacant and appears to be predominantly shrub-steppe; however,
20 there is evidence that it may have been farmed in the past. It is zoned by Baker County
21 as Agriculture – Exclusive Farm Use (Attachment C-2, Map 71).
- 22 • MUA BA-03 will be located just southwest of MP 166 on Hill Creek Road. The land
23 consists of grassland and shrub-steep, and is zoned by Baker County as Agriculture –
24 Exclusive Farm Use (Attachment C-2, Map 78).
- 25 • MUA BA-04 will be located approximately 1.2 miles west of the community of Durkee
26 and 2.5 miles northeast of MP 174 on Oxman Ranch Road. The land is vacant and
27 predominantly shrub-steppe, and is zoned by Baker County as Agriculture – Exclusive
28 Farm Use EFU. It is bounded on three sides by irrigated agriculture (Attachment C-2,
29 Maps 81 and 82).
- 30 • MUA BA-05 will be located approximately 0.25 mile southwest of the I-84 Exit 340 on
31 Rye Valley Lane. It is directly adjacent to the Proposed Route between MP 185.4 and
32 MP 185.5 The land is currently vacant but may have supported agriculture in the past. It
33 is zoned by Baker County as Agriculture – Exclusive Farm Use (Attachment C-2, Map
34 88).
- 35 • MUA BA-06 will be inside city limits of Huntington, approximately 1 mile east of the
36 Proposed Route at MP 192.5. The area currently has some development but is mostly
37 vacant. In the undeveloped portion, grasslands or shrub-steppe habitats dominate.
38 Zoning is also split, with approximately 85 percent being Commercial Industrial and the
39 remaining portion being Commercial Residential (Attachment C-2, Map 91).

40 There will be one light-duty fly yard in Baker County. Table C-17 identifies the location, size, and
41 land use status of each of the light-duty fly yards.

- 42 • LDFY BA-01 will be located at MP 162.7. The area is zoned by Baker County as
43 Agriculture – Exclusive Farm Use (Attachment C-2, Map 76).

1 There will be two communication stations in Baker County. Table C-11 identifies the specific
2 location of each of the communication stations.

- 3 • CS BA-01 will be located at approximately MP 158.9 and is approximately 0.5 mile
4 northeast of I-84. The land comprises shrub land and is zoned by Baker County as
5 Agriculture – Exclusive Farm Use (Attachment C-2, Map 75)
- 6 • CS BA-02 will be located at approximately MP 178.6 and is just west of Shirttail Creek
7 Road. The land comprises shrub land and is zoned by Baker County as Agriculture –
8 Exclusive Farm Use (Attachment C-2, Map 85)

9 **Segment 5 – Malheur County**

10 The Proposed Route traverses 74.1 miles across northeast Malheur County (see
11 Attachment C-2, Maps 93-125). Most of the land along the route in Malheur County is rangeland
12 and shrub-steppe with little or no development. Table C-6 lists the Project features and existing
13 roads, railroads, and transmission lines crossed by the Proposed Route. Table C-18 lists the
14 acres in Malheur County that would be disturbed during construction or affected during
15 operations.

16 **Table C-6. Proposed Route Features – Malheur County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	327
Towers – Single Circuit 500-kV H-Frame	6
Towers – Single Circuit 500-kV 3-Pole Dead-end	3
Towers – Single Circuit 138-kV H-Frame	8
Towers – Single Circuit 138-kV 3-Pole Dead-end	3
Communication Station(s)	3
Light Duty Fly Yards	2
Multi-Use Areas	9
Pulling and Tensioning Sites	83
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	41.7
Existing, 71-100% Improved	12.8
New, Bladed	53.1
New, Primitive	13.8
Crossings by Proposed Route	Number of Crossings
High Voltage Transmission Line Crossings ¹	4
Existing Road Crossings ²	2
Existing Railroad Crossings ³	1

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

17 Heading southeast across rangeland from the Malheur County line, the Proposed Route
18 crosses several small segments of the West-wide Energy corridor. The Proposed Route crosses
19 several parallel sections of the Oregon National Historic Trail and it passes directly to the east of
20 the Oregon Trail Birch Creek ACEC, an ODOE protected area at MP 199. Between MP 197.6

1 and MP 198.8, the Proposed Route will be located in the existing IPC 138-kV transmission line
2 ROW. The 138-kV transmission line will be rebuilt to the southwest of the Proposed Route in a
3 new ROW. This is being done to reduce visual impacts to the Oregon Trail Birch Creek ACEC.
4 In addition, between MP 198 and MP 199, the Proposed Route will use H-frame structures
5 ranging in height from 65 to 100 feet.

6 Shortly thereafter, the Proposed Route turns sharply south at MP 199 and continues until
7 reaching MP 211.5 and some challenging topography. The Oregon Trail Tub Mountain ACEC,
8 another ODOE protected area, is located approximately 1 mile west of the Proposed Route for
9 nearly this entire segment. To avoid steep terrain and the South Alkali Sand Hills ACEC,
10 another ODOE protected area, the Proposed Route angles southwest and crosses Willow
11 Creek and U.S. Highway 26 at MP 216.4. The highway is a designated utility corridor under the
12 Bureau of Land Management's (BLM) Southeastern Oregon Resource Management Plan (BLM
13 2002). The Proposed Route crosses through approximately 3 miles of irrigated agriculture along
14 both sides of Willow Creek. From MP 218, the Proposed Route continues to the west passing
15 north of Bully Creek Reservoir until it is about 1 mile north of Cottonwood Creek at MP 226. At
16 this point, the Proposed Route turns abruptly south, crosses Cottonwood Creek, and proceeds
17 south along the eastern foothills of the Cottonwood Mountains.

18 The Proposed Route continues south, crossing Bully Creek at MP 228.5, the Vale Irrigation
19 Canal at MP 231.6, the Union Pacific Railroad at MP 232, and the Malheur Canyon, which the
20 Malheur River flows through, at MP 232.1. Headed southeasterly, the Proposed Route crosses
21 U.S. Highway 20 near Vines Hill at MP 236.4. U.S. Highway 20 is a BLM designated utility
22 corridor under BLM's Southeastern Oregon Resource Management Plan (BLM 2002). The
23 Proposed Route passes to the north avoiding the Double Mountain Wilderness Characteristic
24 Unit between MP 238.1 and MP 245.4. The Proposed Route continues southeasterly, crossing
25 Cow Hollow and passing west of Leaky Reservoir and east of Chalk Reservoir.

26 At MP 253.2, the Proposed Route enters a BLM designated utility corridor. This segment of the
27 utility corridor was developed to provide a corridor that avoided the area of the Owyhee Dam,
28 and to provide an alternative to the utility corridor designated along the existing PacifiCorp
29 500-kV line that crosses the Owyhee River below the Owyhee Dam.

30 At MP 254.2, the Proposed Route turns to the east to avoid crossing the Owyhee River Below
31 the Dam ACEC (an ODOE protected area). At MP 254, the Proposed Route passes within
32 1,000 feet of the northeast boundary of the Owyhee River Below the Dam ACEC. At MP 254.8,
33 the Proposed Route exits the utility corridor and proceeds across the Owyhee River at
34 approximately MP 255.3. From here, the Proposed Route turns to the south and, at MP 256, re-
35 enters the BLM utility corridor. At MP 266.1, the Proposed Route crosses the existing PacifiCorp
36 Summer Lake to Hemingway 500-kV transmission line at MP 266.1. At MP 266.4, the Proposed
37 Route exits the utility corridor and turns to the southeast. From here, the Proposed Route
38 proceeds parallel to and offset approximately 1,500 to 3,500 feet from the southwest side of the
39 existing 500-kV line to the Oregon/Idaho state line at MP 270.7.

40 There will be nine multi-use areas in Malheur County. Table C-14 identifies the location, size,
41 and land status of each of the multi-use areas.

- 42 • MUA MA-01 will be approximately 0.2 mile east of MP 203 on Love Reservoir Road. The
43 area is undeveloped and comprises shrub-steppe habitat, and is zoned by Malheur
44 County as Agriculture – Exclusive Range Use (Attachment C-2, Map 95).
- 45 • MUA MA-02 will be approximately 0.5 mile south of MP 215 and 1 mile east of U.S.
46 Highway 26 on Old Oregon Trail Road and is zoned by Malheur County as Agriculture –
47 Exclusive Range Use and Agriculture – Exclusive Farm Use (Attachment C-2, Map 100).

- 1 • MUA MA-03 will be approximately 4 miles east of MP 233 and 0.75 mile north of U.S.
2 Highway 20 on Loop Road. The area is vacant land but previously supported agricultural
3 production. It now supports non-native grasses and mixed shrubs, and is zoned by
4 Malheur County as both Agriculture – Exclusive Farm Use and Rural Industrial
5 (Attachment C-2, Map 108).
- 6 • MUA MA-04 will be adjacent to the Proposed Route between MP 236.5 and MP 236.6
7 and directly south of U.S. Highway 20. The area supports shrub-steppe and grassland
8 habitat, and is zoned by Malheur County as Agriculture – Exclusive Range Use
9 (Attachment C-2, Map 109).
- 10 • MUA MA-05 will be 0.1 mile north of MP 240 on Rock Canyon Road. The area supports
11 shrub-steppe and grassland habitat, and is zoned by Malheur County as Agriculture –
12 Exclusive Range Use (Attachment C-2, Map 111).
- 13 • MUA MA-06 will be located 0.5 mile northeast of MP 245 at the intersection of Cow
14 Hollow Road and Twin Springs Road. The area supports shrub-steppe and grassland
15 habitat, and is zoned by Malheur County as Agriculture – Exclusive Range Use
16 (Attachment C-2, Maps 112 and 113).
- 17 • MUA MA-07 will be approximately 2.1 miles south of the town of Adrian, Oregon. It will
18 be immediately adjacent to State Highway 201 and the Snake River and is about 2.4
19 miles east of MP 258. The area is vacant and comprised entirely of non-native grassland
20 habitat. Zoning is split nearly equally between Agriculture – Exclusive Farm Use and
21 Agriculture – Exclusive Range Use. Industrial, agricultural, and residential uses are
22 apparent on all sides of this area except the west side. (Attachment C-2, Map 119).
- 23 • MUA MA-08 will be approximately 1.3 miles east of MP 260.5 and 0.4 miles west of
24 State Highway 201. The area is vacant and comprised of non-native grassland, and is
25 zoned by Malheur County as Agriculture – Exclusive Farm Use (Attachment C-2, Map
26 121).
- 27 • MUA MA-09 will be located approximately 0.3 mile east of MP 265 on Succor Creek
28 Road. The area is undeveloped and supports shrub-steppe habitat, and is zoned by
29 Malheur County as Agriculture – Exclusive Range Use (Attachment C-2, Map 123).

30 There will be two light-duty fly yards in Malheur County. Table C-17 identifies the location, size,
31 and land use status of each of the light-duty fly yards.

- 32 • LDFY MA-01 will be located at approximately MP 222.4. The area is zoned by Malheur
33 County as Agriculture – Exclusive Range Use (Attachment C-2, Map 102).
- 34 • LDFY MA-02 will be located at approximately MP 232.9. The area is zoned by Malheur
35 County as Agriculture – Exclusive Range Use (Attachment C-2, Map 107).

36 There will be three communication stations in Malheur County. Table C-11 identifies the specific
37 location of each of the communication stations.

- 38 • CS MA-01 will be located at approximately MP 218.9 and is 0.6 mile southwest of U.S.
39 Route 26. The land comprises irrigated farm field and is zoned by Malheur County as
40 Agriculture – Exclusive Farm Use (Attachment C-2, Map 100).
- 41 • CS MA-02 will be located at approximately MP 242.8. The land comprises shrub and
42 grass land and is zoned by Malheur County as Agriculture – Exclusive Range Use
43 (Attachment C-2, Map 112).

- CS MA-03 will be located at approximately MP 269 and is 1.7 miles west of the Oregon-Idaho state line. The land comprises shrub and grass land and is zoned by Malheur County as Agriculture – Exclusive Range Use (Attachment C-2, Map 125).

3.2.2 Alternative Routes

3.2.2.1 West of Bombing Range Road Alternative 1

The 3.7-mile West of Bombing Range Road Alternative 1 leaves the Proposed Route at MP 10.0 and crosses to the east side of Bombing Range Road (see Attachment C-3, Maps 1-2). This alternative continues along the east side of road until it rejoins the Proposed Route at MP 13.6.

The primary difference between West of Bombing Range Road Alternative 1 and the Proposed Route is that the alternative route shifts a portion of the Project from Navy land on the west side of the road to private land on the east side of the road. This alternative will result in impacts to agricultural operations on the east side that otherwise would be avoided with the Proposed Route. West of Bombing Range Road Alternative 1 was developed to avoid the Navy's RNA and HMA.

Table C-7 lists the Project features and existing roads, railroads, and transmission lines crossed by the West of Bombing Range Road Alternative 1. Table C-19 lists the acres along the alternative route that would be disturbed during construction or affected during operations.

Table C-7. West of Bombing Range Road Alternative 1 Features – Morrow County

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	1
Towers – Single Circuit 500-kV H-Frame	22
Towers – Single Circuit 500-kV 3-Pole Dead-end	1
Communication Station(s)	0
Light Duty Fly Yards	0
Multi-Use Areas	0
Pulling and Tensioning Sites	4
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	1.1
Existing, 71-100% Improved	0
New, Bladed	0
New, Primitive	0
High Voltage Transmission Line Crossings ¹	0
Crossings by Proposed Alternative	Number of Crossings
Existing Road Crossings ²	0
Existing Railroad Crossings ³	0

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

3.2.2.2 West of Bombing Range Road Alternative 2

The 3.7-mile West of Bombing Range Road Alternative 2 starts at MP 10.0 (see Attachment C-3, Maps 3-4). From MP 10.0 to MP 11.6, the alternative is located on Navy land on the west

1 side of Bombing Range Road. At MP 11.6, it crosses to the east side of the road, continuing
2 along the road until it rejoins the Proposed Route at MP 13.6.

3 Both the Proposed Route and West of Bombing Range Road Alternative 2 are located on Navy
4 land between MP 10.0 to MP 11.6. However, the alternative differs from the Proposed Route
5 along that stretch by making use of an alternative Y-frame structure-type and by avoiding the
6 Boardman RNA. After the alternative crosses the road onto private lands at MP 11.6, it follows
7 the same path as West of Bombing Range Road Alternative 1. The West of Bombing Range
8 Road Alternative 2 was developed to avoid the agricultural impacts associated with West of
9 Bombing Range Road Alternative 1 on the east side of the Bombing Range, while also avoiding
10 the Boardman RNA.

11 Table C-8 lists the Project features and existing roads, railroads, and transmission lines crossed
12 by the West of Bombing Range Road Alternative 2. Table C-20 lists the acres along the
13 alternative route that would be disturbed during construction or affected during operations.

14 **Table C-8. West of Bombing Range Road Alternative 2 Features – Morrow County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	1
Towers – Single Circuit 500-kV H-Frame	12
Towers – Single Circuit 500-kV H-Frame Dead-end	3
Towers – Single Circuit 500-kV Y-Frame	8
Towers – Single Circuit 500-kV 3-Pole Dead-end	1
Communication Station(s)	0
Light Duty Fly Yards	0
Multi-Use Areas	0
Pulling and Tensioning Sites	2
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	0.8
Existing, 71-100% Improved	0
New, Bladed	0
New, Primitive	0
Crossings by Proposed Alternative	Number of Crossings
High Voltage Transmission Line Crossings ¹	0
Existing Road Crossings ²	0
Existing Railroad Crossings ³	0

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

15 ³ Source: Oregon Department of Transportation (2013).

16 3.2.2.3 Morgan Lake Alternative

17 The 18.5-mile Morgan Lake Alternative leaves the Proposed Route at MP 98.8 approximately
18 1.0 mile west of the Hilgard Junction State Park (see Attachment C-3, Maps 5-14). The Morgan
19 Lake Alternative proceeds south and then southeast crossing the Grand Ronde River at MP 0.8.
20 This alternative then turns east crossing open rangeland with scattered forest stands on north
21 facing slopes. At MP 4.7, the alternative turns southeast and at MP 6.3 passes about 0.2 mile
22 southwest of Morgan Lake. Morgan Lake is a park managed by the City of La Grande. The

1 Morgan Lake Alternative continues to the southwest and MP 11.0 crosses just to the west of the
 2 Ladd Marsh WMA. At that point, the alternative crosses lands that are predominantly forested or
 3 have undergone recent timber harvest. At MP 15, the Morgan Lake Alternative crosses over
 4 Ladd Canyon and at MP 18.5 rejoins the Proposed Route at MP 117.9.

5 In comparison with the Proposed Route, the Morgan Lake Alternative crosses fewer parcels
 6 with residences, does not cross the Ladd Marsh WMA, does not cross I-84, and is 0.5 mile
 7 shorter. The Morgan Lake Alternative was developed by IPC based on input from land owners.

8 Table C-9 lists the Project features and existing roads, railroads, and transmission lines crossed
 9 by the Morgan Lake Alternative. Table C-21 lists the acres along the alternative route that would
 10 be disturbed during construction or affected during operations.

11 **Table C-9. Morgan Lake Alternative Features – Union County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	82
Communication Station(s)	1
Light Duty Fly Yards	0
Multi-Use Areas	2
Pulling and Tensioning Sites	19
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	12.0
Existing, 71-100% Improved	2.5
New, Bladed	5.9
New, Primitive	0
Crossings by Proposed Alternative	Number of Crossings
High Voltage Transmission Line Crossings ¹	0
Existing Road Crossings ²	1
Existing Railroad Crossings ³	0

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

12 There is one alternative communication station in Union County:

- 13 • CS UN-02 ALT will be located at approximately MP 6.6 of the Morgan Lake Alternative
 14 Route and is 0.3 mile south of Morgan Lake. The land comprises grass land and is
 15 zoned by Union County as Timber – Grazing (Attachment C-3, Map 8).

16 3.2.2.4 Double Mountain Alternative

17 The 7.4-mile Double Mountain Alternative leaves the Proposed Route at MP 238.1, stays north
 18 of the Double Mountains, and rejoins the Proposed Route at MP 245.4 (see Attachment C-3,
 19 Maps 15-19).

20 The large majority of land along the Double Mountain Alternative, which is located entirely on
 21 BLM-managed land, is rangeland and sagebrush. Almost the entire length of this alternative
 22 route is located within the BLM-designated Double Mountain Wilderness Characteristic Unit.

- 1 Table C-10 lists the Project features and existing roads, railroads, and transmission lines
 2 crossed by the Double Mountain Alternative. Table C-22 lists the acres along the alternative
 3 route that would be disturbed during construction or affected during operations.

4 **Table C-10. Double Mountain Alternative Features – Malheur County**

Project Features	Number of Sites
Towers – Single Circuit 500-kV Lattice	34
Communication Station(s)	1
Light Duty Fly Yards	0
Multi-Use Areas	2
Pulling and Tensioning Sites	7
Station	0
Access Roads	Total Miles
Existing, 21-70% Improved	1.2
Existing, 71-100% Improved	3.8
New, Bladed	7.0
New, Primitive	0
Crossings by Proposed Alternative	Number of Crossings
High Voltage Transmission Line Crossings ¹	0
Existing Road Crossings ²	0
Existing Railroad Crossings ³	0

¹ Source: ABB Ventyx (2016) and Idaho Power Company; includes only transmission lines over 69-kV.

² Source: Esri (2013); includes Interstate, federal, and state highways.

³ Source: Oregon Department of Transportation (2013).

- 5 There is one alternative communication station in Malheur County:
- 6 • CS MA-02 ALT will be located at approximately MP 226.8 of the Proposed Route and is
 - 7 0.2 mile north of Bully Creek Road. The land comprises shrub and grass land and is
 - 8 zoned by Malheur County as Exclusive Range Use (Attachment C-3, Map 19).

9 **3.2.3 Proposed and Alternative Communication Station Sites**

- 10 Communication station sites and associated map locations are listed in Tables C-11, C-12, and
 11 C-13 and shown in Attachments C-2 and C-3.

Table C-11. Proposed Route – Communication Station Sites

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres	Oper. Acres
Morrow County								
CS MO-01	9	300162.8	5050014.6	Private	21.2	90	0.2	0.1
Umatilla County								
CS UM-01	28	343691.8	5030883.4	Private	54.6	257	0.2	0.1
CS UM-02	41	378807.7	5038343.9	Private	79.2	127	0.2	0.1
Union County								
CS UN-01	51	412587.6	412587.6	Private	105.8	167	0.2	0.1
CS UN-02	62	431828.8	4990724.5	Private	127.5	79	0.2	0.1
Baker County								
CS BA-01	76	446788.1	4949120.2	Private	158.9	260	0.2	0.1
CS BA-02	86	464807.4	4927712.7	Private	178.7	257	0.2	0.1
Malheur County								
CS MA-01	101	475322.0	4879618.7	Private	217.0	254	0.2	0.1
CS MA-02	113	474432.4	4857506.0	Private	242.8	87	0.2	0.1
CS MA-03	126	495776.2	4823558.7	Private	296.0	106	0.2	0.1

¹ Attachment C-2 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

Table C-12. Morgan Lake Alternative – Communication Station Site

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres	Oper. Acres
Malheur County								
CS UN-02 ALT	8	410925.1	5016177.2	Private	6.6	228	0.2	0.1

¹ Attachment C-3 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

Table C-13. Double Mountain Alternative – Communication Station Site

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres	Oper. Acres
Malheur County								
CS MA-02 ALT	19	461218.3	4875217	Private	226.8	110	0.2	0.1

¹ Attachment C-3 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

1 **3.3 Temporary Uses**

2 **3.3.1 Multi-use Areas**

3 Multi-use areas and associated map locations are listed in Tables C-14, C-15, and C-16 and
4 shown in Attachments C-2 and C-3.

5 **Table C-14. Proposed Route – Multi-use Area Sites**

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres
Morrow County							
MUA MO-01	1	297335.0	5079872.0	Private	0.0	2,421	22.4
MUA MO-02	10	301968.8	5051812.8	Private	22.3	6,139	32.1
MUA MO-03	13	311411.7	5050423.2	Private	28.0	3,829	2.8
MUA MO-04	15	319787.7	5046280.3	Private	34.1	1,071	8.9
MUA MO-05	23	329293.8	5028731.6	Private	45.7	8,685	34.8
Umatilla County							
MUA UM-01	24	315091.8	5075047.5	Private	3.1	62,239	37.7
MUA UM-02	25	327250.2	5043373.8	Private	37.3	15,620	34.2
MUA UM-03	28	344053.2	5031046.7	Private	54.9	570	11.5
MUA UM-04	32	356470.4	5033588.2	Private	62.6	11,347	28.6
MUA UM-05	37	363663.1	5028833.5	Private	67.6	5,921	7.8
MUA UM-06	39/40	375050.8	5035114.6	Private	75.6	1,447	5.6
MUA UM-07	41	377702.4	5038449.8	Private	78.4	1,340	14.3
Union County							
MUA UN-01	52	420059.5	5015809.0	Private	109.8	12,213	78.5
MUA UN-02	54	419832.4	5009805.8	Private	112.8	3,759	19.3
MUA UN-03	60	426871.0	4993636.9	Private	123.8	7,625	18.7
MUA UN-04	63	426743.9	4986205.7	Private	129.4	21,428	39.9
Baker County							
MUA BA-01	69	439059.6	4968030.0	Private	142.6	4,100	30.3
MUA BA-02	72	436511.0	4958846.1	Private	150.2	8,875	36.7
MUA BA-03	79	455956.6	4943437.2	Private	166.2	924	5.6
MUA BA-04	82/83	461150.3	4936251.6	Private	170.1	12,347	17.0
MUA BA-05	89	473440.3	4921131.6	Private	185.4	757	13.5
MUA BA-06	92	478176.7	4911097.3	Private	192.5	5,402	8.7
Malheur County							
MUA MA-01	96	484379.1	4896954.8	BLM/ Private	202.8	904	5.0
MUA MA-02	101	484379.1	4879441.0	Private	215.2	3,841	28.2
MUA MA-03	109	469461.3	4866475.5	Private	235.2	21,771	46.8
MUA MA-04	110	465274.1	4860690.9	BLM	236.5	660	23.6
MUA MA-05	112	470397.0	4858762.9	Private	240.2	1,021	14.9
MUA MA-06	113/114	478199.4	4855898.8	BLM	245.2	2,475	16.5
MUA MA-07	120	492739.8	4839634.4	Private	258.6	12,989	18.7

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres
MUA MA-08	122	492442.8	4835509.7	Private	261.0	7,743	12.0
MUA MA-09	124	493465.5	4828741.6	BLM	265.3	1,582	10.5

¹ Attachment C-2 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

1 **Table C-15. Morgan Lake Alternative – Multi-use Area Sites**

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres
Malheur County							
MUA UN-01	13	420059.5	5015809.0	Private	10.4	21,026	78.5
MUA UN-02	14	419832.4	5009805.8	Private	12.9	10,883	19.3

¹ Attachment C-3 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

2 **Table C-16. Double Mountain Alternative – Multi-use Area Sites**

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres
Malheur County							
MUA MA-05	18	470397.0	4858762.9	Private	2.2	6,686	14.9
MUA MA-06	17	478199.4	4855898.8	BLM	7.3	3,019	16.5

¹ Attachment C-3 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

3 **3.3.2 Light-Duty Fly Yards**

4 Light-duty fly yards and associated map locations are listed in Table C-17 and are shown in
5 Attachment C-2.

6 **Table C-17. Light-Duty Fly Yards**

County/ Feature ID	Map ¹	Easting ²	Northing ²	Land Status ²	Nearest Milepost ²	Dist. to Milepost (ft) ²	Constr. Acres
Umatilla County							
LDFY UM-01	44	388966.8	5032313.5	Private	87.6	266	3.6
Baker County							
LDFY BA-01	77	452626.2	4946956.5	Private	162.8	338	2.9
Malheur County							
LDFY MA-01	103	468552.7	4878344.3	BLM	222.4	118	5.7
LDFY MA-02	108	462575.7	4865837.9	BLM/ Private	232.9	147	7.6

¹ Attachment C-2 map set reference.

² Coordinates (NAD 1983 UTM Zone 11 – meters), land status, milepost, and distance all from centroid of feature.

3.4 Disturbance

The following discussion estimates construction disturbances and lands permanently required for operations, based on best professional judgment and experience with linear transmission projects. Components included in disturbance estimates are: transmission support structures; their associated construction work areas; pulling sites for tensioning conductors; access roads to each structure; multi-use areas; light-duty fly yards; communications stations; and stations. As part of the preliminary design and to aid in the quantification of effects, locations were assigned for all components of the Proposed Route and the alternative routes. Table C-18 shows the estimated amount of land that will be disturbed during construction or required to be permanently converted to operational uses for the Proposed Route. Tables C-19, C-20, C-21, and C-22 show this same information for the four alternative routes. In addition, Table C-23 details the approximate acres of forest clearing required for the Project. Facility locations are shown in Attachments C-1, C-2, and C-3.

Table C-18. Proposed Route – Acres of Land Disturbed during Construction and Operation

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Morrow County		
Access Roads – New or Substantial Improvements	155.1	99.3
Communication Station(s), including Distribution Lines (if needed)	0.2	0.1
Multi-use Areas	100.8	0.0
Station – Longhorn	24.4	19.6
Structure and Other Work Areas	352.9	9.3
Morrow County – Total	633.5	128.3
Umatilla County		
Access Roads – New or Substantial Improvements	184.8	105.9
Communication Station(s), including Distribution Lines (if needed)	0.5	0.3
Multi-use Areas	139.7	0.0
Structure and Other Work Areas	388.7	8.7
Umatilla County – Total	713.7	114.9
Union County		
Access Roads – New or Substantial Improvements	132.6	87.2
Communication Station(s), including Distribution Lines (if needed)	1.1	0.6
Multi-use Areas	156.3	0.0
Structure and Other Work Areas	407.2	9.0
Union County – Total	697.2	96.8

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Baker County		
Access Roads – New or Substantial Improvements	304.4	176.5
Communication Station(s), including Distribution Lines (if needed)	2.7	1.5
Multi-use Areas	111.8	0.0
Structure and Other Work Areas	621.0	15.5
Baker County – Total	1,039.9	193.5
Malheur County		
Access Roads – New or Substantial Improvements	381.8	203.2
Communication Station(s), including Distribution Lines (if needed)	1.7	1.0
Multi-use Areas	176.2	0.0
Structure and Other Work Areas	782.2	19.2
Malheur County – Total	1,341.8	223.5
Proposed Route		
Access Roads – New or Substantial Improvements	1,299.9	672.1
Communication Station(s), including Distribution Lines (if needed)	6.2	3.5
Multi-use Areas	684.8	0.0
Station – Longhorn	24.4	19.6
Structure and Other Work Areas	2,552.0	61.7
Proposed Route – Total	4,567.3	756.9

Note: Acreages are rounded and may not sum exactly.

1 **Table C-19. West of Bombing Range Road Alternative 1 – Acres of Land Disturbed**
2 **during Construction and Operation**

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Morrow County		
Access Roads – New or Substantial Improvements	6.5	4.7
Communication Station(s), including Distribution Lines (if needed)	0.0	0.0
Multi-use Areas	0.0	0.0
Structure and Other Work Areas	25.1	0.4
Morrow County – Total	31.7	5.1

Note: Acreages are rounded and may not sum exactly.

1 **Table C-20. West of Bombing Range Road Alternative 2 – Acres of Land Disturbed**
 2 **during Construction and Operation**

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Morrow County		
Access Roads – New or Substantial Improvements	5.2	3.1
Communication Station(s), including Distribution Lines (if needed)	0.0	0.0
Multi-use Area	0.0	0.0
Structure and Other Work Areas	17.1	0.3
Morrow County – Total	22.4	3.4

Note: Acreages are rounded and may not sum exactly.

3 **Table C-21. Morgan Lake Alternative – Acres of Land Disturbed during**
 4 **Construction and Operation**

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Malheur County		
Access Roads – New or Substantial Improvements	78.2	48.2
Communication Station(s), including Distribution Lines (if needed)	0.6	0.3
Multi-use Area	97.8	0.0
Structure and Other Work Areas	190.5	4.5
Union County – Total	367.1	53.0

Note: Acreages are rounded and may not sum exactly.

5 **Table C-22. Double Mountain Alternative – Acres of Land Disturbed during**
 6 **Construction and Operation**

County/ Project Component	Land Affected During Construction (acres)	Land Permanently Converted to Operations (acres)
Malheur County		
Access Roads – New or Substantial Improvements	51.7	25.7
Communication Station(s), including Distribution Lines (if needed)	0.9	0.5
Multi-use Area	31.4	0.0
Structure and Other Work Areas	72.9	2.0
Malheur County – Total	156.9	28.2

Note: Acreages are rounded and may not sum exactly.

1 **Table C-23. Estimated Forest Clearing for All Project Features**

County	Forest Clearing (acres)
Umatilla County	TBD
Union County	TBD
Total	TBD

Note: The operation area used to estimate forest clearing is a 250-foot corridor and all Project features outside of the centerline corridor and a 30-foot buffer for proposed new road. This estimate is approximate and preliminary in nature and is not intended to serve as a forest inventory. Clearing estimate was based on field survey data (see Exhibit BB).

2 **3.5 Site Boundary**

3 The Site Boundary is the area within which IPC will locate all facilities. The requested Site
4 Boundary size varies based on the specific facility component as listed in Table C-24.

5 **Table C-24. Site Boundary and Average Temporary/Permanent Disturbance Areas**
6 **by Project Component**

Component	Length or Count	Site Boundary ¹	Construction Disturbance	Operations Disturbance
Transmission Lines				
Single-Circuit 500-kV	270.8 miles (Proposed)/ 33.3 miles (Alternatives)	500 feet (width)	— ²	— ²
Single-Circuit 230-kV	0.9 mile (Proposed)	500 feet (width)	— ²	— ²
Single-Circuit 138-kV	1.1 miles (Proposed)	500 feet (width)	— ²	— ²
Transmission Structures				
500-kV Lattice	1,085 (Proposed)/ 118 (Alternative)	— ³	250 x 250 feet (1.4 acres)	50 x 50 feet (0.06 acre)
500-kV H-Frame (NWSTF area)	73 (Proposed)/ 34 (Alternative)	— ³	250 x 90 feet (0.5 acres) on NWSTF / 250 x 150 feet (0.9 acres) off NWSTF	10 x 40 feet (0.001 acre)
500-kV H-Frame (Birch Creek area)	6 (Proposed)	— ³	250 x 250 feet (1.4 acre)	10 x 40 feet (0.001 acre)
500-kV Y-Frame	8 (Alternative)	— ³	Varies (0.4 acres)	8 x 8 feet (0.001 acre)
500-kV 3-Pole Dead- end (NWSTF area)	1 (Proposed)/ 2 (Alternative)	— ³	250 x 90 feet (0.5 acre)	10 x 90 feet (0.02 acre)
500-kV 3-Pole Dead- end (Birch Creek area)	3 (Proposed)	— ³	250 x 250 feet (1.4 acre)	10 x 90 feet (0.02 acre)
500-kV H-Frame Dead-end (NWSTF area)	3 (Alternative)	— ³	250 x 90 feet (0.5 acre)	10 x 50 feet (0.01 acre)
230-kV H-Frame	5 (Proposed)	— ³	250 x 100 feet (0.6 acre)	25 x 5 feet (0.01 acre)
230-kV H-Frame (Removal)	9 (Proposed)	— ³	150 x 100 feet (0.3 acre)	— ⁴

Component	Length or Count	Site Boundary ¹	Construction Disturbance	Operations Disturbance
230-kV 3-Pole Dead-end	4 (Proposed)	— ³	250 x 150 feet (0.6 acre)	40 x 130 feet (0.1 acre)
138-kV H-Frame	8 (Proposed)	— ³	150 x 250 feet (0.9 acre)	16.5 x 5 feet (0.001 acre)
138-kV H-Frame (Removal)	10 (Proposed)	— ³	100 x 100 feet (0.2 acre)	— ⁴
138-kV 3-Pole Dead-end	3 (Proposed)	— ³	250 x 150 feet (0.9 acre)	30 x 130 feet (0.09 acre)
69-kV H-Frame (Removal)	94 (Proposed)	— ³	90 x 90 feet (0.2 acre)	— ⁴
Stations				
Longhorn	1	188.9 acres	24.4 acres	19.6 acres
Access Roads⁵				
Existing Road, Moderate Improvements (21-70%)	148.8 miles (Proposed)/ 13.2 miles (Alternatives)	100 feet (width)	16 feet (width)	14 feet (width)
Existing Road, Extensive Improvements (71-100%)	73.4 miles (Proposed)/ 6.3 miles (Alternatives)	100 feet (width)	30 feet (width)	14 feet (width)
New, Bladed	88.8 miles (Proposed)/ 12.8 miles (Alternatives)	200 feet (width)	35 feet (width)	14 feet (width)
New, Primitive	117.5 miles (Proposed)/ 12.8 miles (Alternatives)	200 feet (width)	16 feet (width)	10 feet (width)
Permanent Facilities				
Communication Station	10 (Proposed)/ 2 (Alternative)	— ²	100 x 100 feet (0.2 acre)	75 x 75 feet (0.1 acre)
Distribution Power Lines to Communication Station ⁷	7 (Proposed)/ 2 (Alternative)	50 feet (width)	25 feet (width)	14 feet (width)
Temporary Facilities				
Multi-use Areas	31 (Proposed)/ 4 (Alternative)	Mapped Area Outside of Transmission Line Site Boundary	23 acres	—
Light Duty Fly Yards	4 (Proposed)	Mapped Area Outside of Transmission Line Site Boundary	5 acres	—

Component	Length or Count	Site Boundary ¹	Construction Disturbance	Operations Disturbance
Pulling and Tensioning Sites	299 (Proposed)/ 32 (Alternative)	Mapped Area Outside of Transmission Line Site Boundary	4 acres	–

¹ Site Boundary size may be less than indicated in specific areas to avoid impacts to protected areas or for other reasons.

² No temporary or permanent disturbance expected along centerline, other than for specific Project features indicated below.

³ Component will be sited entirely within centerline site boundary.

⁴ No permanent disturbance expected once existing towers are removed.

⁵ See the Road Classification Guide and Access Control Plan (Exhibit B, Attachment B-5) for more information about road types.

⁶ Existing roads with no substantial improvements are defined as existing roads that require improvements along 20% or less of the entire road segment. These roads have minimal to no temporary or permanent disturbance impacts beyond their existing road surface/profile, are not included in site boundary.

⁷ IPC will construct distribution lines to communication stations within their service territory.

1 **4.0 CONCLUSIONS**

2 Exhibit C includes the information required by OAR 345-021-0010(1)(c) and the Amended
3 Project Order regarding the location of the Project.

4 **5.0 COMPLIANCE CROSS-REFERENCES**

5 Table C-25 identifies the location within the application for site certificate of the information
6 responsive to the application submittal requirements in OAR 345-021-0010(c) and the relevant
7 Amended Project Order provisions.

8 **Table C-25. Compliance Requirements and Relevant Cross-References**

Requirement	Location
OAR 345-021-0010(c)	
Exhibit C. Information about the location of the proposed facility, including:	
(A) A map or maps showing the proposed locations of the energy facility site, all related or supporting facility sites and all areas that might be temporarily disturbed during construction of the facility in relation to major roads, water bodies, cities and towns, important landmarks and topographic features, using a scale of 1 inch = 2000 feet or smaller when necessary to show detail.	Exhibit C, Section 1.0, Attachment C-1, Attachment C-2, and Attachment C-3

Requirement	Location
<p>(B) A description of the location of the proposed energy facility site, the proposed site of each related or supporting facility and areas of temporary disturbance, including the total land area (in acres) within the proposed site boundary, the total area of permanent disturbance, and the total area of temporary disturbance. If a proposed pipeline or transmission line is to follow an existing road, pipeline or transmission line, the applicant shall state to which side of the existing road, pipeline or transmission line the proposed facility will run, to the extent this is known.</p>	<p>Exhibit C, Section 3.2, Section 3.3, Section 3.4, Section 3.5, Attachment C-1, Attachment C-2, and Attachment C-3</p>
<p>(C) For energy generation facilities, a map showing the approximate locations of any other energy generation facilities that are known to the applicant to be permitted at the state or local level within the study area as defined in OAR 345-001-0010 for impacts to public services.</p>	<p>Not Applicable</p>
<p>Amended Project Order, Section III(c)</p>	
<p>Maps shall indicate the “site boundary” as defined in OAR 345-001-0010(55). Maps shall provide enough information for property owners potentially affected by the facility to determine whether their property is within or adjacent to the site boundary. Major roads should be named. The application for a site certificate should include identification of lands enrolled in the Conservation Reserve Program and lands currently zoned for Exclusive Farm Use. IPC should include maps drawn to a scale of 1 inch = 2,000 feet or smaller when necessary to show detail. The Department requests that IPC share GIS data for the proposed facility in a format that is compatible with current Department software programs; accurate GIS data will help streamline the application review process for the Department and reviewing agencies.</p>	<p>Exhibit C, Attachment C-1, Attachment C-2, and Attachment C-3; Conservation Reserve Program lands are not available to be publicly disclosed. Exclusive Farm Use zoned lands are discussed and shown in Exhibit K, Section 4.0.</p>
<p>Maps shall clearly show the boundaries of the proposed corridor within which the transmission line would be constructed, and should include familiar landmarks such as roads and existing power lines that reviewing agencies and affected landowners may use to identify the proposed route. Aerial photographs with all roads identified are helpful for public interpretation and review. The site boundaries of all proposed related or supporting facilities, including but not limited to access roads, temporary laydown areas, switching stations/substations, must also be identified. Maps showing access roads included as related or supporting facilities should clearly depict where existing roads or road segments are proposed to be modified. Please clearly identify the county and city jurisdictions in which facility components are proposed to be located. All county and city jurisdictions in which facility components are proposed to be located must be appointed as Special Advisory Groups (SAGs) by the EFSC..</p>	<p>Exhibit C, Attachment C-1, Attachment C-2, and Attachment C-3</p>

Requirement	Location
Exhibit C shall contain a table listing the approximate land areas for both temporary disturbance associated with construction and permanent footprint of structures associated with facility operation for each type of disturbance or structure. This information needs to be consistent with information provided in other exhibits.	Exhibit C, Table C-18 through Table C-24

1 **6.0 REFERENCES**

- 2 ABB (Ventyx). 2016. *Electric Transmission Lines*. Boulder, Colorado.
- 3 BLM (United States Department of Interior, Bureau of Land Management). 2002. Southeastern
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10 [d=%7B61A6C242-63C2-4E5C-8EE7-A3A068047465%7D](http://spatialdata.oregonexplorer.info/geoportal/catalog/search/resource/details.page?uuid=%7B61A6C242-63C2-4E5C-8EE7-A3A068047465%7D)
- 11 OPRD (Oregon Parks and Recreation Department). 2011a. Blue Mountain Forest State Scenic
12 Corridor [Internet]. Available online at: http://www.oregonstateparks.org/park_237.php
- 13 OPRD. 2011b. Hilgard Junction State Park [Internet]. Available online at:
14 http://www.oregonstateparks.org/park_20.php
- 15 USFS (United States Forest Service). 1990. Wallowa-Whitman National Forest Land and
16 Resource Management Plan. April. Available online at
17 [http://www.fs.usda.gov/detail/wallowa-](http://www.fs.usda.gov/detail/wallowa-whitman/landmanagement/planning/?cid=stelprdb5259879)
18 [whitman/landmanagement/planning/?cid=stelprdb5259879](http://www.fs.usda.gov/detail/wallowa-whitman/landmanagement/planning/?cid=stelprdb5259879).

**ATTACHMENT C-1
PROPOSED STATION LOCATION**

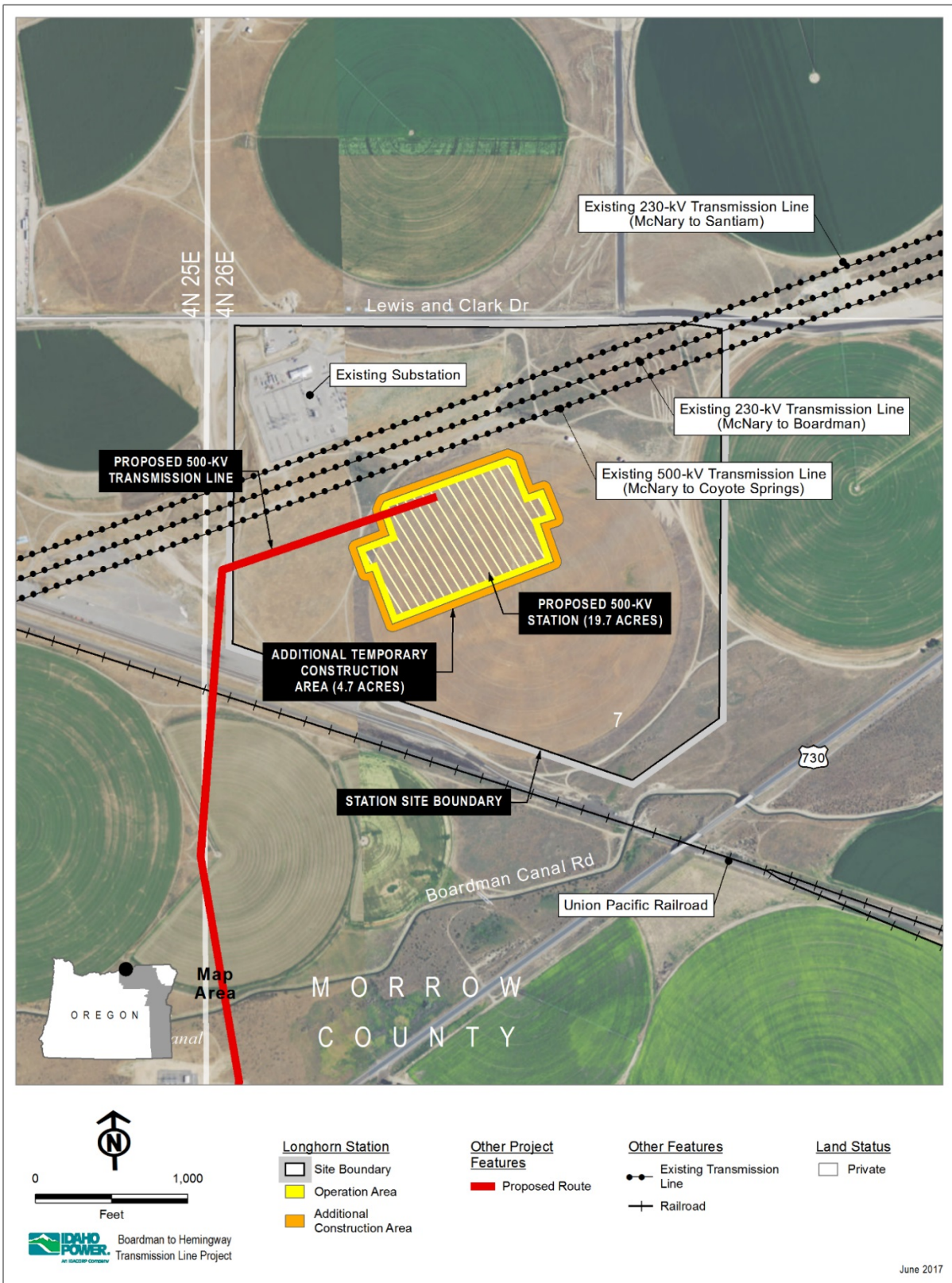


Figure C-1. Proposed Longhorn Station

ATTACHMENT C-2
PROPOSED ROUTE LOCATION

ATTACHMENT C-3
ALTERNATIVE ROUTE LOCATIONS
