

Exhibit P2 Greater Sage-Grouse

Boardman to Hemingway Transmission Line Project



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Amended Preliminary Application for Site Certificate

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- Attachment P2-2. Greater Sage-Grouse Lek Locations
- Attachment P2-3. Greater Sage-Grouse Habitat Mitigation Plan

ACRONYMS AND ABBREVIATIONS

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)
ASC	Application for Site Certificate
BLM	Bureau of Land Management
CAP	Community Advisory Process
FWS	U.S. Fish and Wildlife Service
GPS	Global Positioning System
HQT	Sage-Grouse Habitat Quantification Tool
IDFG	Idaho Department of Fish and Game
IPC	Idaho Power Company
km	kilometer
kV	kilovolt
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Division
OAR	Oregon Administrative Rule
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ORBIC	Oregon Biodiversity Information Center
PAC	Priority Area of Concern
Project	Boardman to Hemingway Transmission Line Project
USFS	United States Forest Service

1 **Exhibit P2**
2 **Greater Sage-Grouse**

3 **1.0 INTRODUCTION**

4 Exhibit P2 describes the potential impacts of the Boardman to Hemingway Transmission Line
5 Project (Project) on Greater sage-grouse (*Centrocercus urophasianus*, hereafter “sage-grouse”)
6 and its habitat, as well as the steps Idaho Power Company (IPC) will take to avoid, minimize,
7 and mitigate those impacts. Further, Exhibit P2 shows the Project will be consistent with the
8 Oregon Department of Fish and Wildlife’s (ODFW) fish and wildlife goals and standards, and
9 ODFW’s Greater Sage-Grouse Conservation Strategy.

10 **2.0 APPLICABLE RULES AND AMENDED PROJECT ORDER**
11 **PROVISIONS**

12 **2.1 General Standards for Siting Facilities**

13 The Fish and Wildlife Habitat Standard at Oregon Administrative Rule (OAR) 345-022-0060
14 states:

15 *For the Council to issue a site certificate, it must find that the design, construction, and*
16 *operation of the facility, taking into account mitigation, are consistent with the fish and*
17 *wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of*
18 *September 1, 2000.*

19 **2.2 Fish and Wildlife Habitat Mitigation Policy**

20 ODFW’s Fish and Wildlife Habitat Mitigation Policy at OAR 635-415-0025(7) states:

21 *For proposed developments subject to this rule with impacts to greater sage-grouse*
22 *habitat in Oregon, mitigation shall be addressed as described in OAR 635-140-0000*
23 *through 635-140-0025, except that any energy facility that has submitted a preliminary*
24 *application for site certificate pursuant to ORS 469.300 et seq. on or before the effective*
25 *date of this rule is exempt from fulfilling the avoidance test contained in 635-140-0025,*
26 *Policy 2, subsections (a), (b), (c) and (d)(A). Other mitigation provisions contained in*
27 *635-140-0025, Policy 2, subsections (d)(B) and (e), and Policies 3 and 4 remain*
28 *applicable.*

29 **2.3 Greater Sage-Grouse Conservation Strategy for Oregon**

30 Policy 2 and 3 of Oregon’s Greater Sage-Grouse Conservation Strategy at OAR 635-140-
31 0025(2) and (3), respectively, provide:

32 *Policy 2. The Department may approve or recommend approval of mitigation for impacts*
33 *from a large-scale development permitted by a county; or development actions permitted*
34 *by a state or federal government entity on public land, within sage-grouse habitat only*
35 *after the following mitigation hierarchy has been addressed by the permitting entity, with*
36 *the intent of directing the development action away from the most productive habitats*
37 *and into the least productive areas for sage-grouse (in order of importance: core area,*
38 *low density, general, and non-habitat).*

1 . . .¹

2 (d) *Minimization. If after exercising the above avoidance tests, the permitting*
3 *entity finds the proposed development action cannot be moved to non-habitat or*
4 *into a habitat category that avoids adverse direct and indirect impacts to a habitat*
5 *category of greater significance (i.e., core or low density), then the next step*
6 *applied in the mitigation hierarchy will be minimization of the direct and indirect*
7 *impacts of the proposed development action. Minimization consists of how to*
8 *best locate, construct, operate and time (both seasonally and diurnally) the*
9 *development action so as to avoid or minimize direct and indirect impacts on*
10 *important sage-grouse habitat and sage-grouse.*

11 . . .²

12 (B) *Minimizing impacts from development actions in general habitat shall*
13 *include consultation between the development proponent and the*
14 *Department that considers and results in recommendations on how to*
15 *best locate, construct, or operate the development action so as to avoid*
16 *or minimize direct and indirect impacts on important sage-grouse habitat*
17 *within the area of general habitat.*

18 (e) *Compensatory Mitigation. If avoidance and minimization efforts have been*
19 *exhausted, compensatory mitigation to address both direct and indirect impacts*
20 *will be required as part of the permitting process for remaining adverse impacts*
21 *from the proposed development action to sage-grouse habitat, consistent with*
22 *the mitigation standard in (3) Policy 3 below.*

23 *Policy 3. The standard for compensatory mitigation of direct and indirect habitat impacts*
24 *in sage-grouse habitat (core low density, and general areas) is to achieve net*
25 *conservation benefit for sage-grouse by replacing the lost functionality of the impacted*
26 *habitat to a level capable of supporting greater sage-grouse numbers than that of the*
27 *habitat which was impacted. Where mitigation actions occur in existing sage-grouse*
28 *habitat, the increased functionality must be in addition to any existing functionality of the*
29 *habitat to support sage-grouse. When developing and implementing mitigation measures*
30 *for impacts to core, low density, and general sage-grouse habitats, the project*
31 *developers shall:*

32 (a) *Work directly with the Department and permitting entity to obtain approval to*
33 *implement a mitigation plan or measures, at the responsibility of the developer,*
34 *for mitigating impacts consistent with the standard in OAR 635 140 0025 (3) or,*

35 (b) *Work with an entity approved by the Department to implement, at the*
36 *responsibility of the developer, "in-lieu fee" projects consistent with the standard*
37 *in OAR 635 140 0025 (3).*

38 (c) *Any mitigation undertaken pursuant to (a) or (b) above must have in place*
39 *measures to ensure the results of the mitigation activity will persist (barring*
40 *unintended natural events such as fire) for the life of the original impact. The*

¹ Pursuant to OAR 635-415-0025(7), the Project is exempt from OAR 635-140-0025(2)(a), (b), (c), and (d)(A) (as explained in more detail below in Section 3.7.3). The provisions in OAR 635-140-0025(2)(d)(B) and (e), and OAR 635-140-0025(3) and (4), remain applicable.

² *Id.*

1 Department will engage in mitigation discussions related to development actions
2 in a manner consistent with applicable timelines of permitting entities.

3 **2.4 Site Certificate Application Requirements**

4 OAR 345-021-0010(1)(p) requires Exhibit P2 include, as applicable, the following information
5 about sage-grouse and its habitat:

6 (A) A description of biological and botanical surveys performed that support the
7 information in this exhibit, including a discussion of the timing and scope of each survey.

8 (B) Identification of all fish and wildlife habitat in the analysis area, classified by the
9 habitat categories as set forth in OAR 635-415-0025 and a description of the
10 characteristics and condition of that habitat in the analysis area, including a table of the
11 areas of permanent disturbance and temporary disturbance (in acres) in each habitat
12 category and subtype.

13 (C) A map showing the locations of the habitat identified in (B).

14 (D) Based on consultation with the Oregon Department of Fish and Wildlife (ODFW) and
15 appropriate field study and literature review, identification of all State Sensitive Species
16 that might be present in the analysis area and a discussion of any site-specific issues of
17 concern to ODFW.

18 (E) A baseline survey of the use of habitat in the analysis area by species identified is
19 performed according to a protocol approved by the Department and ODFW.

20 (F) A description of the nature, extent and duration of potential adverse impacts on the
21 habitat identified in (B) and species identified in (D) that could result from construction,
22 operation and retirement of the proposed facility.

23 (G) A description of any measures proposed by the applicant to avoid, reduce or mitigate
24 the potential adverse impacts described in (F) in accordance with the ODFW mitigation
25 goals described in OAR 635-415-0025 and a discussion of how the proposed measures
26 would achieve those goals.

27 (H) A description of the applicant's proposed monitoring plans to evaluate the success of
28 the measures described in (G).

29 **2.5 Amended Project Order Provisions**

30 The Amended Project Order requires Exhibit P2 to include, as applicable, the following specific
31 information:

32 The applicant has proposed a "phased survey" approach for data collection during the
33 site certificate review process. The Department understands that the entirety of the site
34 boundary for the proposed facility may not yet have been surveyed, mapped for
35 vegetation types, and categorized under ODFW's habitat categorization guidance.
36 Nevertheless, Exhibit P shall include as much information as possible about the results
37 of the field surveys conducted to date for biological resources and the schedule for
38 future surveys.

39 Exhibit P shall include analysis of how the evidence provided supports a finding by the
40 Council that the proposed facility meets the Council's fish and wildlife habitat standard.
41 Exhibit P must include the results of all surveys for fish and wildlife habitat in the analysis

1 area. Exhibit P must also identify all state sensitive species that may be present in the
2 analysis area and include the results of surveys for state sensitive species. Please also
3 include the survey methodology, including scope and timing of each survey. Surveys
4 must be performed by qualified survey personnel during the season or seasons
5 appropriate to the detection of the species in question. The applicant must also include
6 in Exhibit P its habitat categorization and tables depicting the estimated temporary and
7 permanent impacts, broken down by habitat categories.

8 If particular fish and/or wildlife habitat or state sensitive species are identified within the
9 analysis area that could be adversely affected as a result of the proposed facility, the
10 applicant shall include description of the nature, extent and duration of potential adverse
11 impacts and a description of any proposed mitigation measures. Fish and Wildlife
12 Habitat Mitigation Policy (OAR Chapter 635, Division 415) classifies six habitat
13 categories and establishes a mitigation goal for each category. The applicant for a site
14 certificate must identify the appropriate habitat category for all areas affected by the
15 proposed facility and provide the basis for each category designation, subject to ODFW
16 review. The applicant must show how it would comply with the habitat mitigation goals
17 and standards by appropriate monitoring and mitigation.

18 As a result of the access timing issues for this proposed facility, please also provide
19 proposed site certificate conditions for the Council's consideration related to
20 requirements for the applicant to complete all unfinished surveys within the project's site
21 boundary prior to construction. The proposed site certificate conditions should also
22 address submittal requirements for reporting future survey results, adjustment of
23 previously calculated impact areas (if necessary), and the applicant's proposed
24 approach to document approval of final results by agencies or the Council prior to
25 commencing construction activities.

26 (Amended Project Order, Section III(p)).

27 **3.0 ANALYSIS**

28 **3.1 Analysis Area**

29 The analysis area for Exhibit P2 includes all areas within the Site Boundary, which is defined as
30 "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all
31 temporary laydown and staging areas, and all corridors and micro-siting corridors proposed by
32 the applicant" (OAR 345-001-0010(55)). The Site Boundary encompasses the following facilities
33 in Oregon:

- 34 • The Proposed Route, consisting of 270.8 miles of new 500-kilovolt (kV) electric
35 transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of
36 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV
37 transmission line;
- 38 • Four alternatives that each could replace a portion of the Proposed Route, including the
39 West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road
40 Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain
41 Alternative (7.4 miles);
- 42 • One proposed 20-acre station (Longhorn Station);
- 43 • Ten communication station sites of less than ¼-acre each and two alternative
44 communication station sites;

- 1 • Permanent access roads for the Proposed Route, including 206.3 miles of new roads
2 and 223.2 miles of existing roads requiring substantial modification, and for the
3 Alternative Routes including 30.2 miles of new roads and 22.7 miles of existing roads
4 requiring substantial modification; and
- 5 • Thirty-one temporary multi-use areas and 299 pulling and tensioning sites of which four
6 will have light-duty fly yards within the pulling and tensioning sites.

7 The Project features are fully described in Exhibit B, and the location of the Project features and
8 the Site Boundary is described in Exhibit C and Table C-24.

9 **3.2 Surveys**

10 OAR 345-021-0010(1)(p): The applicant shall include: (A) A description of biological and
11 botanical surveys performed that support the information in this exhibit, including a
12 discussion of the timing and scope of each survey.

13 **3.2.1 Phased Study Approach**

14 IPC has employed a phased study approach, comprising three phases of field surveys and data
15 collection (see Exhibit P1, Attachment P1-2).³ During Phase 1, IPC compiled existing biological
16 information relevant to the Site Boundary. In Phase 2, IPC completed field surveys of those
17 portions of the Site Boundary where access was available. Phase 3 has not yet occurred, but
18 will include field surveys in previously unsurveyed areas and all preconstruction surveys that
19 may be necessary to identify special status species locations for avoidance and mitigation.

20 Survey methods for sage-grouse and other species were developed in coordination with
21 applicable federal and state agencies. An initial meeting was held on August 22, 2008, in Baker
22 City, Oregon, with land managers and biologists from the ODFW, Idaho Department of Fish and
23 Game (IDFG), United States Forest Service (USFS), U.S. Fish and Wildlife Service (FWS),
24 National Oceanic and Atmospheric Administration Fisheries Division (NOAA Fisheries), and the
25 Bureau of Land Management (BLM). The purpose of this meeting was to establish an
26 interagency/ intergovernmental working group that would determine the list of species that could
27 potentially occur near the Project, as well as to identify the surveys and protocols that would be
28 required to identify wildlife species, rare plant species, wetlands, vegetation, and general
29 habitats in the analysis area. Subsequent meetings with ODFW biologists were held in Baker
30 City on September 30, 2008, and in Pendleton, Oregon, on October 17, 2008. A meeting with
31 IDFG was held in Boise, Idaho, on February 9, 2009. As a result of these meetings, IPC
32 prepared a draft Biological Survey Work Plan, which contained the proposed biological surveys
33 and their protocols. This plan was submitted to agency specialists on February 10, 2009. On
34 February 17, 2009, IPC met to discuss the plan with the Oregon Department of Energy (ODOE),
35 ODFW, USFS, FWS, NOAA Fisheries, and BLM.

36 Shortly after meeting with the agencies to discuss the Biological Survey Work Plan, IPC initiated
37 the Community Advisory Process (CAP) to develop a broader range of possible routes for the
38 Project. Following completion of the CAP, a second interagency meeting was held on
39 October 26, 2010, with representatives of ODFW, BLM, USFS, ODOE, NOAA Fisheries, and
40 FWS to obtain additional input on species and habitats within the Site Boundary. Input from
41 agency specialists was used to identify the special status species that could occur within the

³ Note that the original dates of the phased survey effort proposed in the Biological Survey Work Plan (i.e., Attachment P1-2) do not always directly correspond to the dates in which these surveys were actually conducted; many of the surveys outlined in the Biological Survey Work Plan were conducted earlier (i.e., in an earlier year) than proposed in Attachment P1-2. Table P2-1 provides a list of dates in which surveys were completed.

1 area, those that would require field surveys, and the species targeted during concurrent field
 2 surveys. The Revised Final Biological Survey Work Plan (dated April 2011) contains a list of all
 3 agency required biological surveys, as well as a detailed description of the final protocols used
 4 (Attachment P1-2). Following approval of the Revised Final Biological Survey Work Plan, IPC
 5 continued to coordinate informally with agencies regarding continued field efforts. Coordination
 6 is ongoing as needed, and has included requesting comments on survey areas and protocols
 7 prior to conducting additional field surveys.

8 **3.2.2 Phase 1 – Desktop Review**

9 Existing data regarding greater sage-grouse were initially researched to determine the
 10 preliminary list of species that could potentially occur within the analysis area. Databases and
 11 literature from the Oregon Biodiversity Information Center⁴ (ORBIC; 2016), StreamNet (2016),
 12 ODFW (2005, 2012, 2015, 2016), Oregon Department of Agriculture (ODA; 2016), Oregon
 13 Department of Forestry (ODF; 2013), USFS (2015), BLM (2015), watershed basin plans, the
 14 Geographic Biotic Observation (GeoBOB) database (BLM 2016), the Natural Resource
 15 Information System database (USFS 2016), Federal Register notifications, Bonneville Power
 16 Administration and Northwest Power and Conservation Council reports, and the National
 17 Oceanic and Atmospheric Administration Fisheries Division (NOAA Fisheries; 2009) were
 18 reviewed for information on the species that could occur within the analysis area. Moreover, in
 19 recognition of the fact that species might occur in an area even in the absence of documented
 20 occurrence, local agency experts were consulted and field surveys were conducted, to better
 21 identify the list of species that could potentially occur within the analysis area. Sage-grouse was
 22 one of the species identified during Phase 1 that occurs in the analysis area and therefore
 23 would require field surveys.

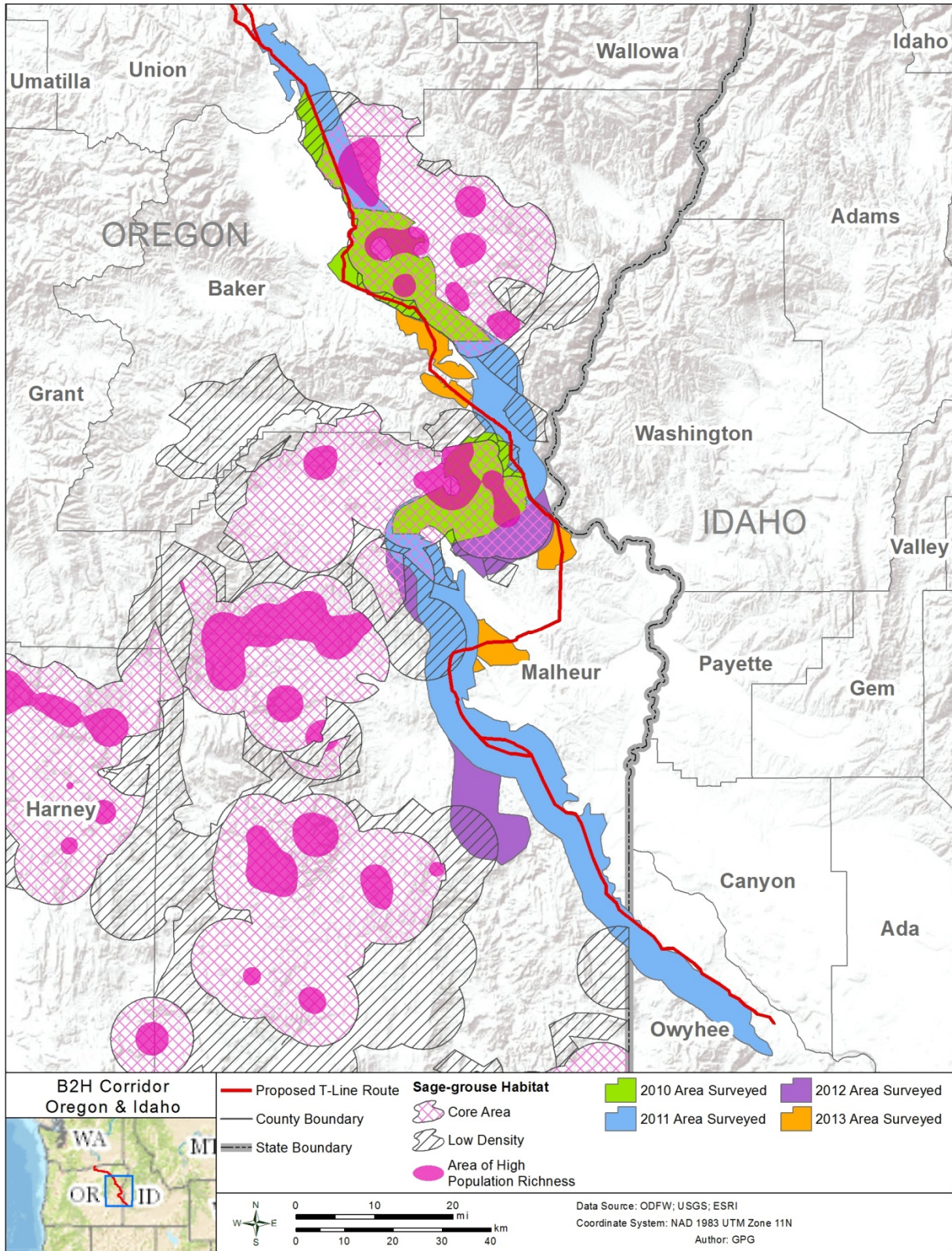
24 **3.2.3 Phase 2 – Initial Field Surveys**

25 Table P2-1 lists the sage-grouse surveys that were conducted, the survey protocols that were
 26 used, the dates of the surveys, the approximate acreage of area requiring surveys, the total
 27 acreage that has been surveyed to date, and the strategy that will be followed in order to
 28 complete a 100 percent survey coverage of the necessary area. These areas are shown in
 29 Figures P2-1.

30 **Table P2-1. Sage-Grouse Surveys**

Survey Name	Protocol Used	Total Area Requiring Surveys	Date That Surveys Were Completed	Compliance Strategy
Sage-grouse	ODFW Greater Sage-Grouse Conservation Assessment and Strategy for Oregon (Hagen 2005)	693,130 acres; see Figure P2-1	April 2013	Aerial Surveys Completed

⁴ ORBIC requested that rare species occurrence locations be kept confidential; upon request, they may be available from the Oregon Department of Energy with approval from ORBIC.



1
2

Figure P2-1. Sage-Grouse Survey Areas 2010, 2011, 2012, 2013

1 The protocols used during the sage-grouse surveys followed the survey methods described in
2 the ODFW *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon* (Hagen
3 2005). The exact details and justifications for these methods are provided in the Revised Final
4 Biological Survey Work Plan (Exhibit P1, Attachment P1-2). The following is a brief summary of
5 the timing and scope of these surveys.

6 The approach to delineating survey areas for sage-grouse began by identifying where the
7 Project intersected sage-grouse habitat. This process was initially completed using known
8 species distribution and vegetation data. A 3-mile buffer on each side of the Project's centerline
9 was incorporated, with an additional mile to allow IPC flexibility in making siting adjustments if
10 needed. Meetings with both state and federal biologists prior to the 2010 survey effort further
11 refined the survey area based on the agency biologist's familiarity with the species and the
12 quality of habitats within their management districts (see Exhibit P1, Attachment P1-2).

13 The surveys were designed to be completed over a 2-year period in 2010 and 2011. The 2010
14 survey area included sections of the Project that were adjacent to known occupied leks. The
15 2011 survey area included the remainder of potential sage-grouse habitat within the Site
16 Boundary not surveyed in 2010, and covered areas with lower anticipated occupied lek
17 densities. Additional surveys were conducted in 2012 to complete surveys in locations where
18 changes had been made to the Site Boundary. Given the current Project alignment, sage-
19 grouse lek surveys are considered completed.

20 The survey areas were flown by helicopter in transects spaced ¼-mile apart. The helicopter flew
21 20 to 30 feet above the ground at speeds ranging from 30 to 50 miles per hour. Surveys
22 typically began 15 to 20 minutes before sunrise and continued for 2 hours after sunrise. The
23 survey crew used Global Positioning System (GPS) technology for data collection activities. A
24 Trimble GeoXT resource-grade receiver loaded with Terrasync software was used for
25 navigation within the survey area. Sage-grouse observations were marked using Garmin hand-
26 held GPS units. Corresponding notes were written on ODFW paper flight logs and observation
27 forms. Pictures were taken at each observation site. Aerial lek searches were performed using a
28 Bell 206 Jet Ranger operated by JL Aviation out of Boring, Oregon. The lead observer was Mike
29 Schlegel, a retired regional wildlife biologist with IDFG. Both JL Aviation and Mr. Schlegel have
30 several years of experience flying sage-grouse and other wildlife surveys for ODFW. URS
31 Corporation of Boise, Idaho, coordinated survey efforts and provided a second observer.

32 **3.3 Habitat Categories**

33 OAR 345-021-0010(1)(p)(B): Identification of all fish and wildlife habitat in the analysis area,
34 classified by the habitat categories as set forth in OAR 635-415-0025 and a description of the
35 characteristics and condition of that habitat in the analysis area

36 OAR 635-415-0025(7): For proposed developments subject to this rule with impacts to
37 greater sage-grouse habitat in Oregon, mitigation shall be addressed as described in OAR
38 635-140-0000 through 635-140-0025

39 The site certificate application requirements of OAR 345-021-0010(1)(p)(B) provide that fish and
40 wildlife habitat must be classified using the habitat categories in OAR 635-415-0025.
41 Subsection (7) of OAR 635-415-0025, in turn, provides that sage-grouse impacts are to be
42 addressed under Title 635, Division 140, which includes habitat categories related specifically to

1 sage-grouse. Thus, IPC herein identifies and addresses sage-grouse habitat using the habitat
2 categories in OAR 635-140-0002, which are defined in that rule as follows:

- 3 • **Areas of High Population Richness:** Mapped areas of breeding and nesting habitat
4 within core habitat that support the 75th percentile of breeding bird densities (i.e., the top
5 25%).
- 6 • **Core Area:** Mapped sagebrush types or other habitats that support greater sage-grouse
7 annual life history requirements that are encompassed by areas: a) of very high, high,
8 and moderate lek density strata; b) where low lek density strata overlap local
9 connectivity corridors; or c) where winter habitat use polygons overlap with either low lek
10 density strata, connectivity corridors, or occupied habitat.” Core area maps are
11 maintained by the Department.
- 12 • **Low Density:** Mapped sagebrush types or other habitats that support greater sage-
13 grouse that are encompassed by areas where: a) low lek density strata overlapped with
14 seasonal connectivity corridors; b) local corridors occur outside of all lek density strata;
15 c) low lek density strata occur outside of connectivity corridors; or d) seasonal
16 connectivity corridors occur outside of all lek density strata. Low density area maps are
17 maintained by the Department.
- 18 • **General Habitat:** Occupied (seasonal or year-round) sage-grouse habitat outside core
19 and low density habitats.

20 Table P2-2 identifies the number of acres of the relevant sage-grouse habitats that occur within
21 the Site Boundary.

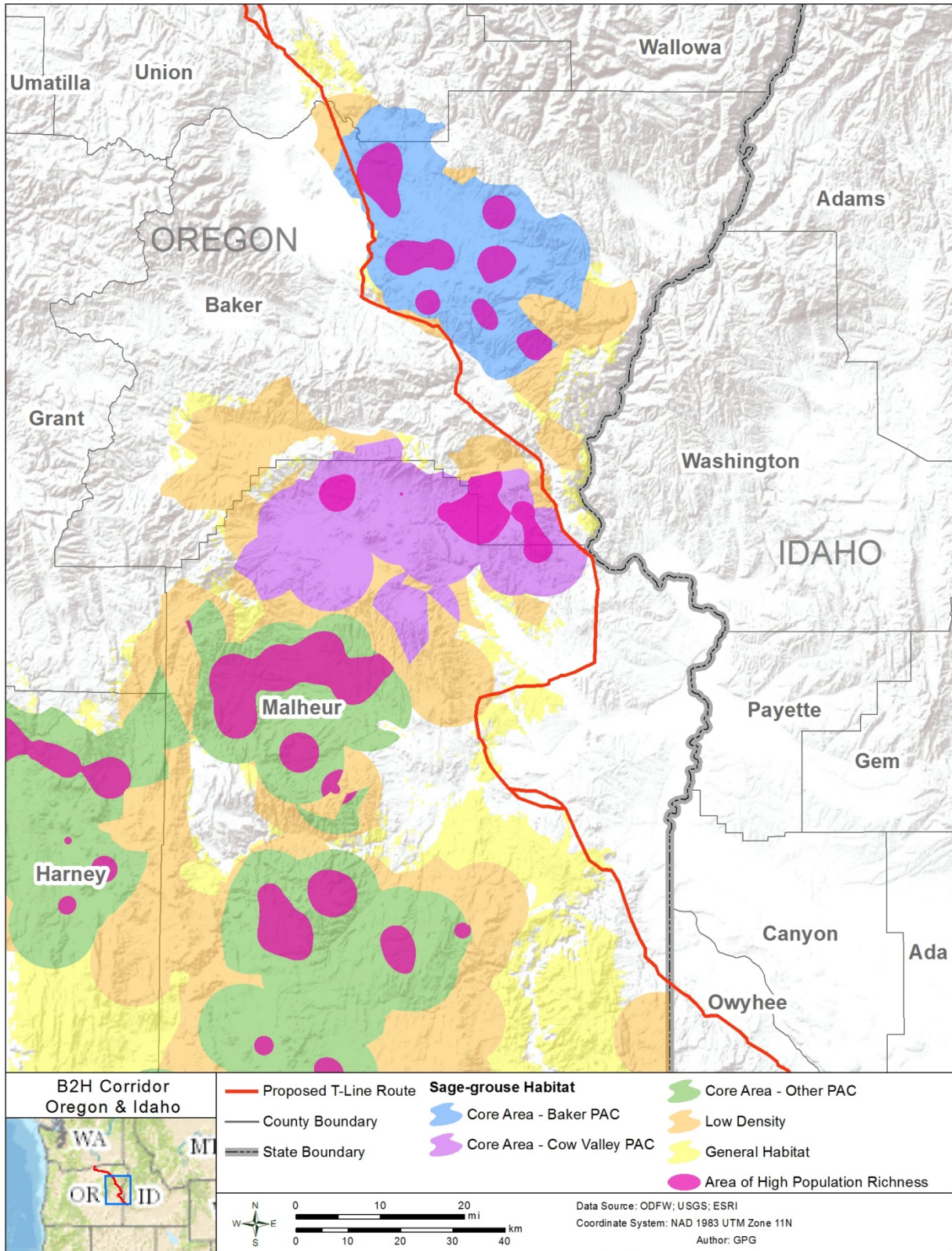
22 **Table P2-2. Sage-Grouse Habitat within the Site Boundary**

Category Type	Acres within the Site Boundary
Areas of High Population Richness	3.39
Core Area	1404.72
Low Density	1729.16
General Habitat	1026.15

23 3.4 Sage-Grouse Habitat Map

24 OAR 345-021-0010(1)(p)(C): A map showing the locations of the habitat identified in (B).

25 Figure P2-2 provides an overview of the sage-grouse habitat near the Project in Oregon.
26 Attachment P2-1 contains a map-book that shows the same at a finer scale.



1
2 **Figure P2-2. Sage-Grouse Habitat Near the Project in Oregon**

1 **3.5 Sage-grouse as a State Sensitive Species**

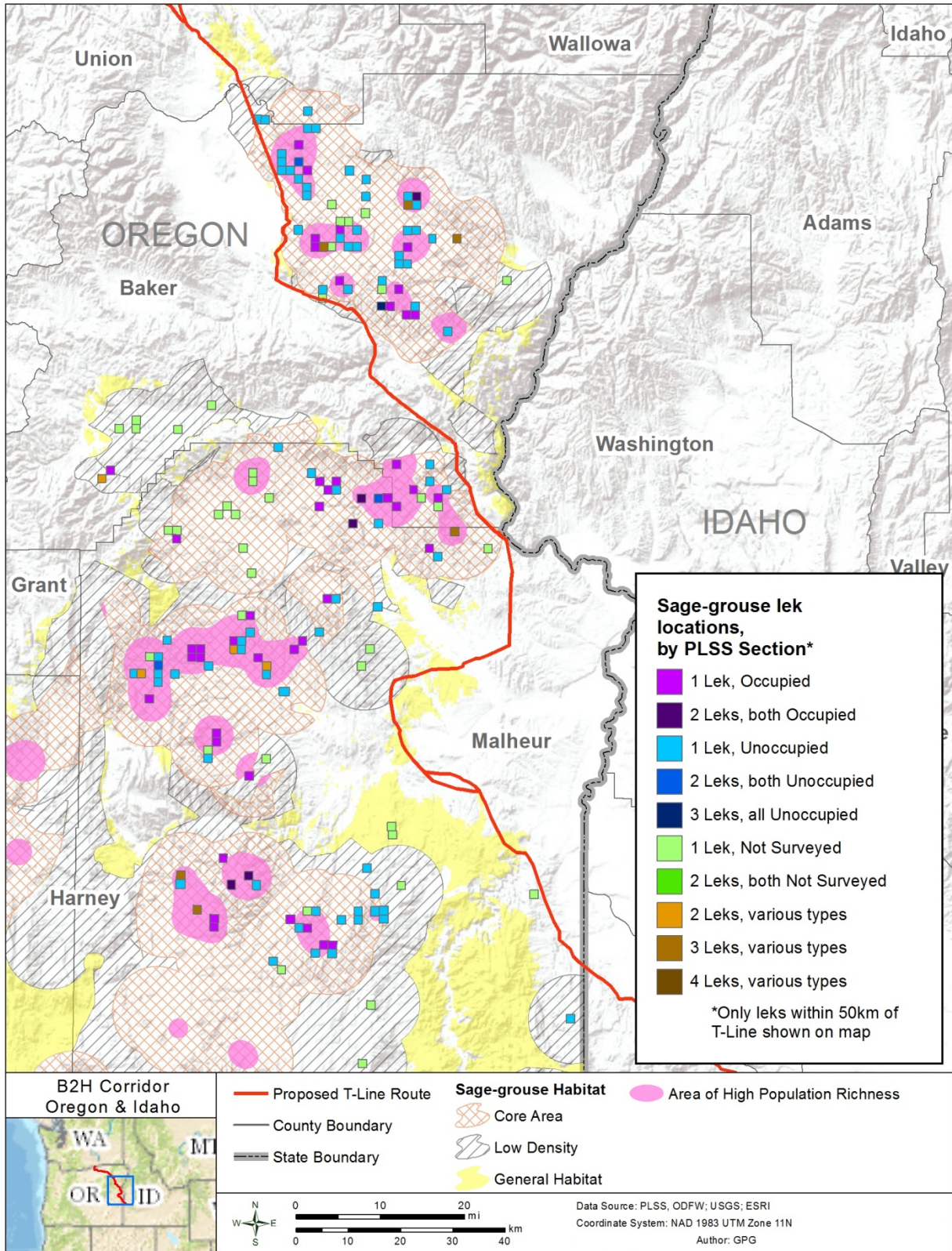
2 OAR 345-021-0010(1)(p)(D): Based on consultation with the Oregon Department of Fish and
3 Wildlife (ODFW) and appropriate field study and literature review, identification of all State
4 Sensitive Species that might be present in the analysis area and a discussion of any site-
5 specific issues of concern to ODFW.

6 State Sensitive Species are defined by ODFW as “naturally-reproducing fish and wildlife
7 species, subspecies, or populations which are facing one or more threats to their populations
8 and/or habitats” (OAR 635-100-0040). ODFW categorizes State Sensitive Species as either
9 Sensitive Critical or Sensitive Vulnerable. A species is considered Sensitive Critical if it is
10 imperiled with extirpation from a specific geographic area because of small population sizes,
11 habitat loss or degradation, and/or immediate threats. A species is considered Sensitive
12 Vulnerable if it faces threats but is not currently imperiled with extirpation (ORBIC 2010).
13 Oregon considers sage-grouse to be a State Sensitive Species that is Sensitive Vulnerable.

14 **3.6 Baseline Surveys**

15 OAR 345-021-0010(1)(p)(E): A baseline survey of the use of habitat in the analysis area by
16 species identified in (D) performed according to a protocol approved by the Department and
17 ODFW.

18 Based on field surveys conducted from 2010–13 and data from ODFW, sage-grouse leks and
19 habitat are known to occur near the Proposed Route. Figure P2-3 shows the location of leks
20 based on data from 2016 as indicated by the township, range, and section where a lek occurs.
21 The number of leks by distance from the proposed alignment is presented in Attachment P2-2.



1
2

Figure P2-3. Sage-Grouse Lek Locations near the Project in Oregon

3.7 Potential Impacts to Sage-grouse Habitat

OAR 345-021-0010(1)(p)(B): . . . a table of the areas of permanent disturbance and temporary disturbance (in acres) in each habitat category and subtype.

OAR 345-021-0010(1)(p)(F): A description of the nature, extent and duration of potential adverse impacts on the habitat identified in (B) and species identified in (D) that could result from construction, operation and retirement of the proposed facility.

3.7.1 Project Features within Sage-Grouse Habitat

3.7.1.1 Proposed Route

Sage-Grouse Areas of High Population Richness

For the Proposed Route, the following Project features will occur in sage-grouse areas of high population richness: substantially modified existing roads (0.28 mile). No transmission line, new access roads, multi-use areas, communication stations, or light-duty fly yards will be located in sage-grouse areas of high population richness.

Sage-Grouse Core Area Habitat

For the Proposed Route, the following Project features will occur in sage-grouse areas of high population richness: transmission line (20.77 line miles), new access roads (12.85 miles), and substantially modified existing roads (12.34 miles). No multi-use areas, communication stations, or light-duty fly yards will be located in sage-grouse core area habitat.

Sage-Grouse Low Density Habitat

For the Proposed Route, the following Project features will occur in sage-grouse low density habitat: transmission line (23.69 line miles), new access roads (16.21 miles), substantially modified existing roads (11.28 miles), two communication stations (CS BA-01 and CS MA-01 ALT), and one light-duty fly yard (LDFY BA-01). No multi-use areas will be located in sage-grouse low-density habitat.

3.7.1.2 Alternatives

None of the Project features associated with the alternative routes are located in sage-grouse habitat.

3.7.2 Duration of Impacts

Impacts may be permanent or temporary. Permanent impacts are defined as those impacts that will exist for the entire life of the Project. Temporary impacts are those impacts that will last for a time less than the life of the Project. The duration of temporary impacts to habitat will vary by vegetation type. For example: the recovery period for agricultural areas that were directly disturbed could be as short as 1 to 3 years; grasslands and herbaceous wetlands generally recover within 3 to 7 years; shrublands may require 30 to 100 years to recover (with the longer recovery periods associated with disturbances in mature sage-brush habitats located in arid regions or for specific sage-brush species; e.g., *Artemisia tridentata* ssp. *wyomingensis*); and forested and woodland areas could take anywhere from 50 to many hundreds of years to reach preconstruction conditions (depending on the condition of the area prior to construction). Arid sites with naturally sparse vegetation, as well as those with saline or alkaline soils, shallow soils, compacted soils, or areas that have a high erosion potential may be difficult to restore and could require special techniques or repeated revegetation efforts by IPC. IPC will restore temporary

1 impacts consistent with the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3).
 2 Additionally, compensatory mitigation for permanent and temporary impacts will be addressed in
 3 the Greater Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).

4 **3.7.3 Direct Impacts**

5 With respect to sage-grouse, direct impacts are defined as those impacts that have “an adverse
 6 effect of a development action upon sage-grouse habitat which is proximal to the physical
 7 footprint of the development action in time and place” (OAR 635-140-0002(4)). Direct impacts
 8 may be permanent or temporary.

9 **3.7.3.1 Permanent Direct Impacts**

10 Table P2-3 summarizes the type, timing, duration, quantification metric, and mitigation
 11 measures related to the Project’s potential permanent direct impacts to sage-grouse habitat.

12 **Table P2-3. Type, Timing, Duration, Quantification Metrics, and Mitigation**
 13 **Measures Related to Permanent Direct Impacts to Sage-Grouse Habitat**

Type of Disturbance	Type of Impact	Timing of Impact	Duration of Impact	Metric to Quantify Effects on Habitat Functionality	Mitigation Measures
Permanent direct impacts from vegetation clearing (transmission line, communication stations, and access roads)	Permanent direct	Construction, Operation	Life of the Project	As calculated by the Institute of Natural Resources on behalf of the State of Oregon	Permanent direct impacts from vegetation clearing will be mitigated as set forth in the Greater Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).
Direct mortality	Permanent direct	Construction, Operation	Life of the Project	Not quantified – no or de minimis impacts expected; there is no reasonable and accepted methodology for quantifying these impacts	Mortality related to Project access roads will be mitigated by implementing speed limits and controlling access on Project roads within sage-grouse habitat, subject to approval by the relevant land management agency or landowner; mortality related to the transmission line will be addressed through avian-safe design measures.

1 **Permanent Direct Impacts from Vegetation Clearing**

2 Vegetation clearing to accommodate Project features required for operation will result in
3 permanent direct impacts to fish and wildlife habitat through habitat loss. Permanent loss of
4 habitat will occur within the operations disturbance areas for transmission structures, the
5 Longhorn Station, communication stations, and access roads; the dimensions of these areas
6 are summarized in Exhibit C, Section 3.4.

7 With respect to the permanent direct impacts specifically from access road construction and
8 modification, details on road construction activities and methods, including types of
9 improvements to existing roads and projected traffic volumes, are provided in Exhibit B,
10 Attachment B-5 (Road Classification Guide and Access Management Plan), Exhibit U, and
11 Attachment U-2 (Traffic and Transportation Management Plan). Access to construction sites will
12 require both improvements to existing unpaved roads, as well as construction of new access
13 roads. For existing roads that require substantial modification, proposed repair and/or
14 construction activities will increase the width of the existing road prism, change the existing road
15 alignment, use materials inconsistent with the existing road surface, and/or change the existing
16 road profile, as well as meet additional criteria detailed in Exhibit B, Attachment B-5. New roads
17 proposed to be constructed include both primitive and bladed roads. Primitive roads, commonly
18 called “two track” or “overland travel” roads, will be created by direct vehicle use with little or no
19 grading. Bladed roads will be constructed using heavy equipment and designed to support
20 vehicular traffic; bladed road features typically include cuts and/or fills to construct a smooth
21 travel surface and manage surface water drainage.

22 IPC will provide mitigation for permanent direct impacts resulting from construction and
23 installation of Project features as set forth in the Sage-Grouse Habitat Mitigation Plan
24 (Attachment P2-3). As discussed in the plan, Oregon is developing a Sage-Grouse Habitat
25 Quantification Tool (HQT), which will estimate direct and indirect impacts to sage-grouse
26 habitat resulting from transmission lines and roads (see below Section 3.4.7). ODFW has
27 indicated that, pursuant to Executive Order No. 15-18 and ODFW’s Greater Sage-Grouse
28 Conservation Strategy, IPC is required to account for direct and indirect impacts using the HQT.
29 Consistent with that direction, IPC proposes that the Council include the following conditions in
30 the site certificate providing that IPC will run the Project through the HQT to identify the related
31 direct and indirect impacts:

32 ***Fish and Wildlife Condition 8:*** *Prior to construction, the site certificate holder*
33 *shall finalize, and submit to the department for its approval, a final Sage-Grouse*
34 *Habitat Mitigation Plan.*

35 *a. The site certificate holder shall provide to the department the information*
36 *necessary for the State of Oregon to calculate the amount of sage-grouse habitat*
37 *compensatory mitigation required for the facility using Oregon’s Sage-Grouse*
38 *Habitat Quantification Tool.*

39 *b. The final Sage-Grouse Habitat Mitigation Plan shall address the potential*
40 *sage-grouse habitat impacts through mitigation banking, an in-lieu fee program,*
41 *development of mitigation projects by the site certificate holder, or a combination*
42 *of the same.*

43 *i. To the extent the site certificate holder shall develop its own mitigation*
44 *projects, the final Sage-Grouse Habitat Mitigation Plan shall:*

45 *1. Identify the location of each mitigation site, including a map of*
46 *the same;*

47 *2. Identify the number of credit-acres that each mitigation site will*
48 *provide for the site certificate holder;*

1 3. Include a site-specific mitigation management plan for each
2 mitigation site that provides for:

- 3 A. A baseline ecological assessment;
4 B. Conservation actions to be implemented at the site;
5 C. An implementation schedule for the baseline ecological
6 assessment and conservation actions;
7 D. Performance measures;
8 E. A reporting plan; and
9 F. A monitoring plan.

10 ii. To the extent the site certificate shall utilize a mitigation bank or in-lieu
11 fee program, the final Sage-Grouse Habitat Mitigation Plan shall:

- 12 1. Describe the nature, extent, and history of the mitigation bank
13 or in-lieu fee program; and
14 2. Identify the number of credit-acres that each mitigation site will
15 provide for the site certificate holder.

16 c. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate
17 the amount of sage-grouse habitat compensatory mitigation required for the
18 facility and the number of credit-acres that each mitigation site will provide for the
19 site certificate holder.

20 d. The Sage-Grouse Habitat Mitigation Plan may be amended from time to time
21 by agreement of the site certificate holder and the department. Such
22 amendments may be made without amendment to the site certificate. The
23 Council authorizes the department to agree to amendments of the plan and to
24 mitigation actions that may be required under the plan; however, the Council
25 retains the authority to approve, reject, or modify any amendment of the plan
26 agreed to by the department.

27 **Fish and Wildlife Condition 21:** During construction, the site certificate holder
28 shall commence implementation of the conservation actions set forth in the final
29 Sage-Grouse HMP referenced in Fish and Wildlife Condition 8.

30 **Fish and Wildlife Condition 25:** During the third year of operation, the site
31 certificate holder shall provide to the department the information necessary for
32 the State of Oregon to calculate the final amount of sage-grouse habitat
33 compensatory mitigation required for the facility using Oregon's Sage-Grouse
34 Habitat Quantification Tool. After receiving the calculations from the State, the
35 site certificate holder shall provide to the department a report demonstrating that
36 sage-grouse habitat mitigation shall be commensurate with the final
37 compensatory mitigation calculations.

38 a. The final calculations shall be based on the as-constructed footprint of the
39 facility.

40 b. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate
41 the amount of sage-grouse habitat compensatory mitigation required for the
42 facility, and the information from the pre- and post-construction traffic studies
43 shall be used in the calculation.

44 **Direct Mortality**

45 **Traffic-Related Mortality**

46 Direct mortality to sage-grouse individuals may occur as a result of collisions with Project-
47 related vehicles during construction or operation of the Project. IPC expects this risk to be very
48 low, as sage-grouse will likely avoid the work sites and vehicles. The risk of traffic-related direct

1 mortality can be avoided or minimized by having Project vehicles reduce their speed to a level
2 sufficient to anticipate and avoid striking sage-grouse individuals. Accordingly, to avoid or
3 minimize direct mortality to sage-grouse, IPC proposes that the Council include the following
4 conditions in the site certificate establishing speed limits on access roads where possible:

5 ***Fish and Wildlife Condition 16:*** During construction, the site certificate holder
6 shall employ a speed limit of 25 miles per hour on facility access roads, unless
7 the applicable land-management agency or landowner has designated an
8 alternative speed limit.

9 ***Fish and Wildlife Condition 26:*** During operation, the site certificate holder shall
10 employ a speed limit of 25 miles per hour on facility access roads, unless the
11 applicable land-management agency or landowner has designated an alternative
12 speed limit.

13 Additionally, vehicle-wildlife collisions on Project access roads can be substantially reduced
14 through controlling use of such roads. IPC will implement access control as set forth in the draft
15 Road Classification Guide and Access Control Plan (Exhibit B, Attachment B-5). Access control
16 may involve fencing, gates, barriers, and/or signage as preferred by the landowner while
17 maintaining effectiveness. To avoid or minimize indirect impacts related to access roads,
18 consistent with the Road Classification Guide and Access Control Plan, IPC proposes that the
19 Council include the following conditions in the site certificate providing that access control will be
20 pursued where possible:

21 ***Fish and Wildlife Condition 27:*** During operation, the site certificate holder shall
22 employ access control on facility access roads within elk habitat (i.e., elk summer
23 range and elk winter range) and sage-grouse habitat (i.e., areas of high
24 population richness, core area habitat, low density habitat, or general habitat),
25 subject to approval by the applicable land-management agency or landowner.

26 **Transmission-Line-Collision Mortality**

27 Direct mortality to individual sage-grouse may occur from collisions with Project structures (e.g.,
28 birds flying into wires). However, IPC expects the risk of mortality from such collisions to be very
29 low. Additionally, the risk of sage-grouse mortalities occurring as a result of electrocutions is
30 negligible for extra high-voltage transmission lines. This is because a bird would need to contact
31 two phases of the line simultaneously to be electrocuted and the spacing between phases of the
32 Project's transmission lines is much larger than the wing span of sage-grouse. Therefore,
33 electrocution due to the transmission line is not considered likely. Even so, IPC is committed to
34 designing and constructing the Project to avoid or minimize direct mortality to avian species by
35 following practices set forth in IPC's Avian Protection Plan and certain other avian protection
36 guidelines. IPC recommends that the Council adopt the following condition regarding the same:

37 ***Fish and Wildlife Condition 22:*** During construction, the site certificate holder
38 shall construct the transmission line to avian-safe design standards consistent
39 with the site certificate holder's Avian Protection Plan (Idaho Power 2015).

1 **3.7.3.2 Temporary Direct Impacts**

2 Table P2-4 summarizes the type, timing, duration, quantification metric, and mitigation
3 measures related to the Project's potential temporary direct impacts to sage-grouse habitat.

4 **Table P2-4. Type, Timing, Duration, Quantification Metrics, and Mitigation**
5 **Measures Related to Temporary Direct Impacts to Sage-Grouse and Their Habitat**

Type of Disturbance	Type of Impact	Timing of Impact	Duration of Impact	Metric to Quantify Effects on Habitat Functionality	Mitigation Measures
Temporary direct impacts from vegetation clearing (construction areas)	Temporary direct	Construction	Construction through re-vegetation	As calculated by the Institute of Natural Resources on behalf of the State of Oregon	Temporary direct impacts from vegetation clearing will be mitigated as set forth in the Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3) and the Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).
Retirement	Temporary direct	Retirement	Retirement	Similar to construction related impacts	Similar to construction-related impacts

6 **Temporary Direct Impacts from Vegetation Clearing**

7 To provide for construction-related activities and installation of certain Project features,
8 vegetation providing habitat for sage-grouse may be cleared within the Project's right-of-way. In
9 most areas, IPC will have a 250-foot-wide right-of-way in which to construct the 500-kV portions
10 of the transmission line and a 100-foot-wide right-of-way to construct the 138-kV portions of the
11 line. Temporary vegetation clearing activities encompass the entire footprint of pulling and
12 tensioning sites, multi-use areas, and light-duty fly yards. Temporary clearing activities will also
13 occur around the perimeter of permanent Project features including transmission structures, the
14 Longhorn station, communication stations, and access roads. Areas cleared for construction
15 activities, and not encompassed by permanent Project features or not needed for normal
16 transmission line operation and maintenance will be reclaimed through measures described in
17 IPC's Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3). To ensure the
18 protective measures set forth in the draft Reclamation and Revegetation Plan are incorporated
19 into the final Reclamation and Revegetation Plan (unless otherwise determined in consultation
20 with relevant government agencies) and to ensure compliance with the final Reclamation and
21 Revegetation Plan, IPC proposes that the Council include the following conditions in the site
22 certificate providing for the same:

- 23 • **Fish and Wildlife Condition 4:** *Prior to construction, the site certificate holder*
24 *shall finalize, and submit to the department for its approval, a final Reclamation*
25 *and Revegetation Plan. The protective measures described in the draft*
26 *Reclamation and Revegetation Plan in ASC Exhibit P1, Attachment P1-3, shall*
27 *be included and implemented as part of the final Reclamation and Revegetation*
28 *Plan, unless otherwise approved by the department.*

1 ***Fish and Wildlife Condition 17:*** *During construction, the site certificate holder*
2 *shall conduct all work in compliance with the final Reclamation and Revegetation*
3 *Plan referenced in Fish and Wildlife Condition 4.*

4 Sage-brush habitat that is cleared for construction will be restored and the duration of the
5 impact will not exceed the life of the Project; thus, clearing vegetation followed by restoration
6 constitutes a temporary impact to sage-grouse habitat. However, restoration of sage-brush can
7 take decades and restoration to pre-construction conditions could span several generations of
8 sage-grouse. Although the impact is temporary, the benefit of restoration might not be realized
9 by sage-grouse in the short term and could constitute a long-term temporary impact. Regardless
10 of the duration of the impact, temporary direct impacts from vegetation clearing will be quantified
11 and mitigated pursuant to the Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).

12 ***Retirement***

13 Retirement of the Project would involve activities and equipment similar to those that would be
14 used during construction. Therefore, potential impacts on sage-grouse during retirement of the
15 Project would be similar to the temporary impacts described for construction.

16 ***3.7.3.3 Quantifying Direct Impacts***

17 The State of Oregon, through the Institute for Natural Resources, is developing a Direct Impact
18 Assessment Tool for calculating direct impacts from projects impacting sage-grouse habitat. By
19 letter dated May 9, 2017, the Institute for Natural Resources provided to ODOE and IPC a
20 preliminary analysis of the Project's direct impacts using the draft Direct Impact Assessment
21 Tool. The Institute summarized its methodology as follows:

- 22 1. Identified the area of influence for transmission lines, using the following values: 200 feet
23 for 500-kV lines, 150 feet for 230-kV lines, and 100 feet for 138-kV lines.
- 24 2. Overlaid the buffered Proposed Route and the operation-related project features
25 shapefiles, dissolving the same to get an overall footprint of the Project's permanent
26 components.
- 27 3. Added construction-related Project features shapefiles.
- 28 4. Clipped the Project features to the affected Priority Areas of Concern (PAC).
- 29 5. Calculated the Project area of influence relative to the total acres of each PAC.
- 30 6. Subtracted the calculated Project area of influence from the baseline development
31 shapefiles to get the net area and acres of influence.

32 Access roads were included in the operation-related Project features (see Step 2). The roads
33 were classified into five types based on whether they were existing or new, and the amount of
34 improvement to existing roads. Despite this categorization, all access roads were included in the
35 calculations. Many of the access roads were located under a transmission line, and therefore,
36 the overlapping impacts did not contribute independently to the net area or acres of influence.
37 Table P2-5 summarizes the results of that analysis.

1 **Table P2-5. Direct Impacts to Sage-grouse Habitat in Oregon**

Existing Conditions (acres)	Baker PAC	Cow Valley PAC
Total area	336,415	368,442
Total development	2,938	1,501
Development percent of total	0.87%	0.41%
Project Direct Impacts (acres)	Baker	Cow Valley
Permanent (operations)	347	179
Temporary (construction)	24	30
Overlap with existing baseline	(28)	(9)
Net Project impacts	343	200
Area Remaining for Development after the Project		
Acres remaining to the 3% threshold ¹	6,811	9,352
Percent remaining to the 3% threshold	2.02%	2.54%
Acres remaining to the 1% threshold ²	3,021	3,484
Percent remaining to the 1% threshold	0.90%	0.95%

¹ The 3% disturbance cap is intended to ensure that direct impacts do not exceed 3% of the total area in any Priority Area of Concern (PAC) (see OAR 660-023-0115(17)). The 1% metering threshold provides that the area of direct impact levels in any PAC does not increase by an amount greater than 1% of the total area of the PAC in any ten-year period (see OAR 660-023-0115(16)). The initial period commenced on the effective date of OAR 660-023-0115, which was July 24, 2015.

² The 1% metering threshold provides that the area of direct impact levels in any PAC does not increase by an amount greater than 1% of the total area of the PAC in any ten-year period (see OAR 660-023-0115(16)). The initial period commenced on the effective date of OAR 660-023-0115, which was July 24, 2015.

2 **3.7.4 Indirect Impacts**

3 With respect to sage-grouse, indirect impacts are defined as “adverse effects to sage-grouse
4 and their habitat that are caused by or will ultimately result from implementation of a
5 development action, with such effects usually occurring later in time or more removed in
6 distance as compared to direct effects” (OAR 635-140-0002(6)). Indirect impacts may be
7 permanent or temporary.

8 **3.7.4.1 Permanent Indirect Impacts**

9 Table P2-6 summarizes the type, timing, duration, quantification metric, and mitigation
10 measures related to the Project’s potential permanent indirect impacts to sage-grouse.

1 **Table P2-6. Type, Timing, Duration, Quantification Metrics, and Mitigation**
 2 **Measures Related to Permanent Indirect Impacts to Sage-Grouse and Sage-**
 3 **Grouse Habitat**

Type of Disturbance	Type of Impact	Timing of Impact	Duration of Impact	Metric to Quantify Effects on Habitat Functionality	Mitigation Measures
Permanent indirect impacts from the transmission line	Permanent indirect	Operation	Life of the Project	As calculated by the State of Oregon's Sage-Grouse Habitat Quantification Tool	Permanent indirect impacts from the transmission line will be mitigated as set forth in the Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).
Permanent indirect impacts from the access roads	Permanent indirect	Operation	Life of the Project	As calculated by the State of Oregon's Sage-Grouse Habitat Quantification Tool	Permanent indirect impacts from the access roads will be mitigated by implementing speed limits; controlling access on Project roads within sage-grouse habitat, subject to approval by the relevant land management agency or landowner; and implementing the Sage-Grouse Habitat Mitigation Plan (Attachment P2-3).

4 ***Permanent Indirect Impacts from the Transmission Line***

5 It has been suggested that transmission lines and other tall structures indirectly impact sage-
 6 grouse by offering opportunities for increased predator use thereby generating aversion
 7 behaviors among sage-grouse (Manier et al. 2014; Walters et al. 2014). However, evidence that
 8 sage-grouse instinctively avoid tall structures to avoid predators remains highly debated and
 9 there is a dearth of research addressing the issue (Manier et al. 2014). As described by Walters
 10 et al. (2014), most studies of the effects of development on sage-grouse were not designed to
 11 isolate the effect of tallness of a structure on a response variable. However, despite
 12 experiments to isolate an aspect of development, authors have attributed an observed pattern to
 13 a specific aspect of development. Thus, as stated in the U.S. Geological Survey sage-grouse
 14 conservation buffer document, caution should be used when interpreting the studies of the
 15 effects of development on sage-grouse (Manier et al. 2014). Indeed, findings from some studies
 16 suggest transmission lines result in no or limited indirect impacts on sage-grouse:

- 17 • LeBeau, C.W., J.L. Beck, G.D. Johnson, and M.J. Holloran. 2014. Short-term impacts of
 18 wind energy development on sage-grouse fitness. *Journal of Wildlife Management*
 19 78:522-530 (suggesting that transmission lines were not actively avoided by female
 20 sage-grouse during the nesting and brood-rearing period in the study area).
- 21 • Blomberg, E.J., M.T. Atamian, and J.S. Sedinger. 2007. Greater Sage-Grouse
 22 (*Centrocercus urophasianus*) Nest Success Following Transmission Line Construction in
 23 Northern Nevada [Abstract]. In: Proceedings of the 26th Western Agencies Sage and
 24 Columbian Sharp-tailed Grouse Workshop, Mammoth Lakes, California, June 23-26
 25 (suggesting that presence of a 345-kV transmission line in Nevada did not affect sage-

1 grouse nest success among 13 leks located approximately 0.5 to 15 kilometers [km]
2 from the line).

- 3 • Wisinski, C.L. 2007. Survival and Summer Habitat Selection of Male Greater Sage-
4 Grouse (*Centrocercus urophasianus*) in Southwestern Montana. M.S. Thesis. Montana
5 State University, Bozeman (distance to power line variable was not found to be
6 associated with sage-grouse habitat selection, suggesting that presence of transmission
7 lines did not affect habitat selection by the male sage-grouse monitored during this
8 study).
- 9 • Johnson, D.H., M.J. Holloran, J.W. Connelly, S.E. Hanser, C.L. Amundson, and S.T.
10 Knick. 2011. Influences of environmental and anthropogenic features on Greater Sage-
11 Grouse populations, 1997-2007. Pp. 407-450 in S.T. Knick and J.W. Connelly (editors).
12 *Greater sage-grouse: Ecology and conservation of a landscape species and its habitats.*
13 *Studies in Avian Biology* (vol. 38). University of California Press, Berkeley, CA (presence
14 of power lines within 5 km and 18 km did not affect trends in lek counts).

15 Therefore, that tall structures cause avoidance behavior among sage-grouse is not supported
16 based on the existing data (Walters et al. 2014) because most studies were not designed to
17 isolate an effect of tallness. Among the authors suggesting such a correlation between tall
18 structures and sage-grouse avoidance, there is no definitive methodology for quantifying those
19 impacts.

20 Regardless of IPC's position on the issue, the State of Oregon has concluded that transmission
21 lines have indirect impacts on sage-grouse habitat and Oregon's HQT will account for such
22 indirect impacts. As discussed above, IPC has proposed a site certificate condition providing
23 that IPC will run the Project through the HQT and provide mitigation commensurate with the
24 HQT results (see also the Sage-Grouse Habitat Mitigation Plan (Attachment P2-3)).

25 ***Permanent Indirect Impacts from the Access Roads***

26 New and substantially modified existing access roads are not expected to act as a barrier to
27 sage-grouse movement. However, the introduction of traffic (i.e., motorized on- or off-road
28 vehicles) and the presence of human activity on roads used for the Project potentially will have
29 negative indirect impacts on sage-grouse. The indirect impacts may include reduced utilization
30 of habitat, fragmentation of migration corridors, and the associated disruption of important sage-
31 grouse life processes. Indirect impacts from roads to sage-grouse and sage-grouse habitat will
32 be addressed through implementation of speed limits on Project access roads and controlling
33 access on Project roads within sage-grouse habitat as set forth in the Road Classification Guide
34 and Access Control Plan (Exhibit B, Attachment B-5). Additionally, Oregon's HQT addresses
35 permanent indirect impacts from roads, and again, IPC will provide mitigation commensurate
36 with the HQT results.

37 ***3.7.4.2 Temporary Indirect Impacts***

38 Table P2-7 summarizes the type, timing, duration, quantification metric, and mitigation
39 measures related to the Project's potential temporary indirect impacts in sage-grouse habitat.

1 **Table P2-7. Type, Timing, Duration, Quantification Metrics, and Mitigation**
 2 **Measures Related to Temporary Indirect Impacts to Sage-Grouse and Their**
 3 **Habitat**

Type of Disturbance	Type of Impact	Timing of Impact	Duration of Impact	Metric to Quantify Effects on Habitat Functionality	Mitigation Measures
Temporary indirect impacts from access roads	Temporary indirect	Construction	Construction	Not quantified – no or de minimis impacts expected; there is no reasonable and accepted methodology for quantifying these impacts.	Temporary indirect impacts from access roads will be mitigated by implementing speed limits and controlling access on Project roads within sage-grouse habitat, subject to approval by the relevant land management agency or landowner; and implementing certain seasonal and spatial restrictions, subject to ODOE-approved variances.
Temporary indirect impacts from invasive species	Temporary direct	Construction	Construction through re-vegetation	Not quantified – no or de minimis impacts expected; there is no reasonable and accepted methodology for quantifying these impacts	Temporary indirect impacts from invasive species will be avoided, minimized or mitigated as set forth in the Noxious Weed Plan (Exhibit P1, Attachment P1-5) and Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3).

4 ***Temporary Indirect Impacts from the Access Roads***

5 Construction activities will result in noise, visual disturbance from heavy equipment, traffic and
 6 people, fugitive dust dispersing from the immediate construction area, and small amounts of air
 7 pollution from construction equipment's exhaust. Collectively, these impacts are referred to as

1 surface disturbance and can directly impact sage-grouse in the immediate vicinity of the Project.
2 Individual sage-grouse may be disturbed if they were to occur in the Site Boundary or in close
3 proximity to the Site Boundary, and the habitat near the construction area may temporarily be
4 unsuitable during the construction period. Temporary direct impacts from surface disturbance
5 will be limited to the immediate vicinity of the disturbance.

6 Noise would likely have the farthest-reaching effect (i.e., the effect of noise would extend farther
7 from construction sites than dust or other disturbances). Some construction activities would
8 likely result in sound levels beyond baseline ambient levels, with a maximum instantaneous
9 predicted noise level of 80 to 90 A-weighted decibels at 50 feet from the work site. Increases in
10 noise would be concurrent with any disturbance associated with the presence of humans and
11 their activities (e.g., dust, visual disturbances, etc.). Surface disturbance has been associated
12 with declines in lek attendance and negative population persistence (Johnson et al. 2011;
13 Blickley et al. 2012). Thus, surface disturbance has been shown to affect sage-grouse and
14 reduce the functionality of habitat at varying distances from the disturbance. These disturbances
15 could render habitats unsuitable for a limited period of time, with disturbances ceasing once
16 construction or maintenance activities have ceased. To avoid or minimize these impacts, IPC
17 will implement speed limits and access control on Project roads in sage-grouse habitat, where
18 possible.

19 Further, IPC will comply with certain spatial and timing restrictions near sensitive sage-grouse
20 habitat, which would limit the construction window to time periods when sage-grouse are less
21 sensitive to disturbances. IPC may seek exceptions to said timing restrictions if site conditions
22 allow and subject to ODOE approval. For example, if sage-grouse are not using the sensitive
23 habitat, IPC may request permission to start work in the area sooner than what would normally
24 be allowed. IPC proposes the following site certificate conditions providing for the same:

25 ***Fish and Wildlife Condition 9:*** *Prior to construction, the site certificate holder*
26 *shall instruct all construction personnel on the protection of cultural,*
27 *paleontological, ecological, and other natural resources such as (a) federal and*
28 *state laws regarding antiquities, paleontological resources, and plants and*
29 *wildlife, including collection and removal; (b) the importance of these resources;*
30 *(c) the purpose and necessity of protecting them; and (d) reporting and*
31 *procedures for stop work.*

32 ***Fish and Wildlife Condition 11:*** *During construction, the site certificate holder*
33 *shall not conduct ground-disturbing activities within sage-grouse areas of high*
34 *population richness, core area habitat, low density habitat, or general habitat*
35 *between March 1 to June 30. Upon request by the site certificate holder, the*
36 *department may provide exceptions to this restriction. The site certificate holder's*
37 *request must include a justification for the request, including any actions the site*
38 *certificate holder will take to avoid, minimize, or mitigate impacts to sage-grouse*
39 *in the relevant area.*

40 ***Fish and Wildlife Condition 15:*** *During construction, the site certificate holder*
41 *shall flag the following environmentally sensitive areas as restricted work zones:*
42 *a. State protected plant species;*
43 *b. Wetlands and waterways that are not authorized for construction impacts;*
44 *c. Areas with active spatial and seasonal restrictions; and*
45 *d. Category 1 habitat.*
46 *The site certificate holder shall submit a mapset showing the location of*
47 *environmentally sensitive areas and restricted work zones to the department for*

1 *its approval. The site certificate shall make the mapset available to all*
2 *construction personnel.*

3 IPC will develop a set of maps that depict the extent of spatial and temporal restriction areas
4 within the analysis area. These maps will be maintained at the Project site to ensure
5 construction workers are aware if and when their activities will occur within sage-grouse habitat
6 and that the spatial and temporal restrictions discussed above would apply.

7 ***Temporary Invasive Species Impacts***

8 The initial clearing of vegetation and resulting soil disturbance during construction could create
9 optimal conditions for the establishment of invasive-plant species. The establishment of
10 invasive-plant species can affect the quality of wildlife habitat through competition with, and the
11 eventual replacement of desirable native plant species (Westbrook 1998). The replacement of
12 native plant species can have various environmental effects on wildlife habitat, including
13 changes in fire regime (e.g., increasing the frequency and severity of fires), changes in the
14 nutrient regime of soils (thereby reducing the quality of forage species), increased soil erosion
15 (resulting in additional loss of vegetated areas, as well as sedimentation to aquatic habitats), or
16 reductions in the abundance of important forage species (due to invasive species excluding
17 them from the area). These alterations to habitat quality can extend beyond the area of initial
18 impacts (e.g., fires and/or invasive-plant species can spread to areas far beyond the initial
19 disturbance/ignition). To avoid or minimize the risk of invasive-plant species spread or
20 establishment, IPC will implement the Noxious Weed Plan (Exhibit P1, Attachment P1-5) and
21 Reclamation and Revegetation Plan (Exhibit P1, Attachment P1-3). IPC proposes that the
22 Council include the following conditions in the site certificate regarding the Noxious Weed Plan:

23 ***Fish and Wildlife Condition 6:*** *Prior to construction, the site certificate holder*
24 *shall finalize, and submit to the department for its approval, a final Noxious Weed*
25 *Plan. The protective measures as described in the draft Noxious Weed Plan in*
26 *ASC Exhibit P1, Attachment P1-5, shall be included and implemented as part of*
27 *the final Noxious Weed Plan, unless otherwise approved by the department.*

28 ***Fish and Wildlife Condition 19:*** *During construction, the site certificate holder*
29 *shall conduct all work in compliance with the final Noxious Weed Plan referenced*
30 *in Fish and Wildlife Condition 6.*

31 ***Fish and Wildlife Condition 29:*** *During operation, the site certificate holder shall*
32 *conduct all work in compliance with the final Noxious Weed Plan referenced in*
33 *Fish and Wildlife Condition 6.*

34 3.7.4.3 *Quantifying Indirect Impacts*

35 IPC's concerns with the uncertainty in the science regarding transmission lines indirect impacts
36 aside, as discussed above, Oregon is developing its HQT to measure the quantity and quality
37 (in terms of functional value) of sage-grouse habitat affected by certain development projects
38 (see Oregon's Greater Sage-Grouse Habitat Mitigation Manual [Sage-Grouse Conservation
39 Partnership 2015]). The HQT will capture both direct and indirect impacts. It will draw on both
40 landscape-scale data and site-level information collected at the location of the relevant project.
41 Individual indicators will be combined into themes, which are then summarized into a single
42 functional acre score (see the Greater Sage-Grouse Habitat Mitigation Manual, Section 2.2).
43 The HQT functional acre score will represent the amount of compensatory mitigation required
44 for the relevant development project. The same HQT will be used to measure the benefits of
45 crediting projects.

1 At this time, the HQT continues to be under development. Even so, ODFW has indicated the
2 HQT will be finalized prior to commencement of construction on the Project and ODFW intends
3 that IPC utilize the HQT to calculate the Project's impacts to sage-grouse habitat. Accordingly,
4 in this application, IPC has not quantified indirect impacts or the amount of compensatory
5 mitigation required for the Project related to sage-grouse. Rather, the amount of sage-grouse
6 habitat compensatory mitigation required for the Project will be determined by the HQT prior to
7 commencement of construction.

8 The indirect impacts analysis will also account for temporary direct impacts as the indirect
9 impacts analysis does not remove temporary direct impacts from the indirect impacts
10 calculation. In other words, indirect impacts are analyzed from the feature (e.g., transmission
11 line) and not from the edge of the construction area. Therefore, all temporary indirect effects are
12 included in the debit calculation in the HQT as designed by ODFW.

13 Finally, it is IPC's understanding that the HQT analysis will take into consideration traffic
14 volumes on Project roads. That being so, IPC will conduct a traffic study to evaluate pre- and
15 post-construction traffic on public roads used for the Project. The traffic study will be conducted
16 for one year in the year prior to construction, and for one year during the second year the
17 Project is in operation to most accurately characterize traffic patterns. IPC's approach to
18 identifying which Project road segments are included in the Site Boundary, and accordingly in
19 the impact analysis, is set forth in Attachment B-5 of Exhibit B. To ensure compliance with the
20 traffic monitoring program, IPC proposes that the Council include the following conditions in the
21 site certificate providing that IPC will monitor traffic volumes in sage-grouse habitat:

22 ***Fish and Wildlife Condition 3:*** Prior to construction, the site certificate holder
23 shall conduct a one-year traffic study in elk habitat (i.e., elk summer range and
24 elk winter range) and sage-grouse habitat (i.e., areas of high population richness,
25 core area habitat, low density habitat, or general habitat).

26 ***Fish and Wildlife Condition 23:*** During the second year of operation, the site
27 certificate holder shall conduct a one-year traffic study in elk habitat (i.e., elk
28 summer range and elk winter range) and sage-grouse habitat (i.e., areas of high
29 population richness, core area habitat, low density habitat, or general habitat).

30 ***Fish and Wildlife Condition 25:*** During the third year of operation, the site
31 certificate holder shall provide to the department the information necessary for
32 the State of Oregon to calculate the final amount of sage-grouse habitat
33 compensatory mitigation required for the facility using Oregon's Sage-Grouse
34 Habitat Quantification Tool. After receiving the calculations from the State, the
35 site certificate holder shall provide to the department a report demonstrating that
36 sage-grouse habitat mitigation shall be commensurate with the final
37 compensatory mitigation calculations.

38 a. The final calculations shall be based on the as-constructed footprint of the
39 facility.

40 b. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate
41 the amount of sage-grouse habitat compensatory mitigation required for the
42 facility, and the information from the pre- and post-construction traffic studies
43 shall be used in the calculation.

3.7.5 Measures to Reduce, Avoid, or Mitigate Adverse Effects

OAR 345-021-0010(1)(p)(G): A description of any measures proposed by the applicant to avoid, reduce or mitigate the potential adverse impacts described in (F) in accordance with the ODFW mitigation goals described in OAR 635-415-0025 and a discussion of how the proposed measures would achieve those goals.

OAR 635-415-0025(7): For proposed developments subject to this rule with impacts to greater sage-grouse habitat in Oregon, mitigation shall be addressed as described in OAR 635-140-0000 through 635-140-0025, except that any energy facility that has submitted a preliminary application for site certificate pursuant to ORS 469.300 et seq. on or before the effective date of this rule is exempt from fulfilling the avoidance test contained in 635-140-0025, Policy 2, subsections (a), (b), (c) and (d)(A). Other mitigation provisions contained in 635-140-0025, Policy 2, subsections (d)(B) and (e), and Policies 3 and 4 remain applicable.

OAR 635-415-0025(7) provides that sage-grouse impacts must be addressed under OAR 635-140-0000 through -0025. It also provides that energy facilities that have submitted a preliminary application for a site certificate (ASC) prior to the effective date of the rule are exempt from certain mitigation requirements in OAR 635-140-0025. OAR 635-415-0025(7) was effective on or about October 19, 2105. IPC submitted its preliminary ASC on February 27, 2013. Because IPC submitted its preliminary ASC before the effective date of OAR 635-415-0025(7), the Project is exempt from OAR 635-140-0025(2)(a), (b), (c), and (d)(A). The remaining provisions in OAR 635-140-0025(2)(d)(B) and (e), and in OAR 635-140-0025(3) and (4) remain applicable.

This section describes the avoidance, minimization, and mitigation measures that have been and will be implemented to reduce potential adverse impacts to greater-sage grouse habitat and discusses how the proposed measures achieve ODFW's sage-grouse habitat mitigation goals.

3.7.5.1 Sage-grouse Mitigation Hierarchy

Actions Taken to Avoid and Minimize Impacts to Sage-grouse

OAR 635-140-0025(2) Policy 2. The Department may approve or recommend approval of mitigation for impacts from a large-scale development permitted by a county; or development actions permitted by a state or federal government entity on public land, within sage-grouse habitat only after the following mitigation hierarchy has been addressed by the permitting entity, with the intent of directing the development action away from the most productive habitats and into the least productive areas for sage-grouse (in order of importance: core area, low density, general, and non-habitat). . . . (d) Minimization. If after exercising the above avoidance tests, the permitting entity finds the proposed development action cannot be moved to non-habitat or into a habitat category that avoids adverse direct and indirect impacts to a habitat category of greater significance (i.e., core or low density), then the next step applied in the mitigation hierarchy will be minimization of the direct and indirect impacts of the proposed development action. Minimization consists of how to best locate, construct, operate and time (both seasonally and diurnally) the development action so as to avoid or minimize direct and indirect impacts on important sage-grouse habitat and sage-grouse. . . .

OAR 635-140-0025(2)(d) provides that the project developer should minimize unavoidable impacts by taking measures to locate, construct, operate, and time the development action to avoid or minimize impacts to important sage-grouse and its habitat. The following section discusses the measures IPC has taken to minimize impacts to sage-grouse and its habitat. Further, this section discusses the efforts IPC took to avoid sage-grouse habitat, where

1 possible, even though the Project is exempt from the avoidance requirements of OAR 635-140-
2 0025(2).

3 **History of Siting the Project to Avoid Sage-Grouse Habitat**

4 During initial routing of the Project, IPC avoided to the extent practical sensitive resources
5 related to state sensitive species, including sage-grouse leks. Furthermore, the Project was
6 designed to follow existing developments and utility corridors, such as existing roads and power
7 lines, to the extent practical in order to consolidate impacts of the proposed line in areas that
8 have already been disturbed, as opposed to impacting undisturbed areas.

9 IPC also conducted extensive public outreach in the form of the CAP and consulted with land-
10 managing agencies regarding possible route locations for the Project. A route that completely
11 avoided impacts to all sensitive resources was not possible due to the distribution of sensitive
12 resources across the landscape (e.g., avoiding forested habitats can result in the route passing
13 through more shrubland habitats). Details regarding the siting process and the constraints
14 considered during the development of the Proposed Route and Alternatives are presented in the
15 Project Siting Studies (see Exhibit B, Attachments B-1, B-2, B-4, and B-6 [the 2010, 2012, 2015,
16 and 2017 siting studies, respectively]).

17 It has been extremely challenging to design the Project to avoid impacts to important sage-
18 grouse habitat, in large part because of the dynamic and evolving nature of Oregon's sage-
19 grouse habitat protection policy. In selecting and finalizing its 2010 proposed route, IPC
20 attempted to avoid the most important sage-grouse habitat classified under the ODFW Fish and
21 Wildlife Habitat Mitigation Policy as Category 1 habitat (see OAR 635-415-0025(1)). At that
22 time, ODFW considered Category 1 habitat as comprising all habitat within 2 miles of a lek,
23 unless site-specific habitat conditions, terrain, or existing man-made features potentially would
24 reduce the category level. Consequently, the 2010 proposed route avoided most of the many
25 2-mile lek buffers in the Project vicinity.

26 In October 2012, ODOE and ODFW determined that ODFW's core area approach to
27 categorizing sage-grouse habitat must be applied to the Project, as set forth in the *Greater*
28 *Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and*
29 *Enhance Populations and Habitat* (ODFW 2011) (referred to hereafter as the "2011 Strategy").
30 Applying the 2011 Strategy, ODFW designated "core areas" of sage-grouse habitat and
31 recommended that all mapped core areas be considered Category 1 habitat, subject to site-
32 specific analysis. The proposed route in IPC's 2013 Preliminary ASC avoided most, but not all,
33 Category 1 sage-grouse habitat. To address the remaining Category 1 impacts, IPC worked
34 with ODFW to determine the precise extent of Category 1 sage-grouse habitat within the Site
35 Boundary, and made every effort to micro-site to achieve the least disturbance of Category 1
36 habitat. Concurrently with IPC's siting efforts, BLM developed alternative routes designed to
37 avoid sage-grouse habitat (see Exhibit B, Attachment B-4, 2015 Supplemental Siting Study),
38 and those alternative routes became part of the agency's preferred alternative. To align with
39 BLM, IPC incorporated the agency's preferred sage-grouse avoidance alternatives into the
40 company's proposed route.

41 In July 2015, the Oregon Fish and Wildlife Commission adopted new mitigation policies for
42 addressing impacts to sage-grouse habitat (see OAR 635-140-000, -0002, -0010, -0015, and
43 -0025). The new policies provide mitigation measures for avoiding and minimizing sage-grouse
44 habitat impacts, and for compensating for unavoidable impacts (see OAR 635-140-0025(2)).
45 Governor Brown ordered all state agencies to update their regulatory programs to be consistent
46 with the new ODFW sage-grouse mitigation policies (see Executive Order No. 15-18).
47 Accordingly, the new policies will dictate the Project's sage-grouse mitigation requirements and
48 the Fish and Wildlife Habitat Mitigation Policy habitat categories (e.g., Category 1 habitat) will no

1 longer apply to sage-grouse. Importantly, on October 19, 2015, ODFW filed a rule exempting
2 pending EFSC applications—such as this Project—from the avoidance requirements and
3 certain minimization provisions in ODFW's new sage-grouse policies (see OAR 635-415-
4 0025(7)).⁵

5 Regardless of the exemption, the history of the Project demonstrates that IPC—in response to
6 ODFW and BLM input—has developed routes and has changed the Project numerous times to
7 avoid and minimize impacts to sage-grouse habitat. While the Proposed Route will impact some
8 sage-grouse habitat, there is no reasonable alternative location that would avoid the habitat
9 entirely.

10 **Proposed Site Certificate Conditions Aimed at Protecting Sage-Grouse**

11 IPC has proposed certain site certificate conditions in this Exhibit that are intended to avoid,
12 minimize, and mitigate negative impacts to sage-grouse and their habitat, including certain
13 sage-grouse seasonal and spatial restrictions. Implementation of those conditions will ensure
14 that the Project will be in compliance with ODFW's Greater Sage-Grouse Conservation Strategy
15 and EFSC's Fish and Wildlife Standard.

16 ***Minimizing Impacts in General Habitat***

17 OAR 635-140-0025(d)(B): Minimizing impacts from development actions in general habitat
18 shall include consultation between the development proponent and the Department that
19 considers and results in recommendations on how to best locate, construct, or operate the
20 development action so as to avoid or minimize direct and indirect impacts on important sage-
21 grouse habitat within the area of general habitat.

22 OAR 635-140-0025(2)(d)(B) provides that, where general habitat will be impacted, the project
23 developer will consult with ODFW, and ODFW will provide recommendations on how best to
24 avoid or minimize impacts on important habitat within general habitat areas. Throughout the
25 siting of the Project, IPC has consulted with ODFW on how best to avoid and minimize impacts
26 on sage-grouse habitat. The Proposed Route is the culmination of those efforts. Moreover,
27 ODOE has consulted with ODFW on each of the management plans, and seasonal and spatial
28 restrictions, referenced in IPC's proposed site certificate conditions.

29 ***Compensatory Mitigation***

30 OAR 635-140-0025(2)(e): Compensatory Mitigation. If avoidance and minimization efforts
31 have been exhausted, compensatory mitigation to address both direct and indirect impacts
32 will be required as part of the permitting process for remaining adverse impacts from the
33 proposed development action to sage-grouse habitat, consistent with the mitigation standard
34 in (3) Policy 3 below.

35 (3) Policy 3. The standard for compensatory mitigation of direct and indirect habitat impacts
36 in sage-grouse habitat (core low density, and general areas) is to achieve net conservation
37 benefit for sage-grouse by replacing the lost functionality of the impacted habitat to a level
38 capable of supporting greater sage-grouse numbers than that of the habitat which was
39 impacted. Where mitigation actions occur in existing sage-grouse habitat, the increased
40 functionality must be in addition to any existing functionality of the habitat to support sage-

⁵ In September 2015, BLM amended its southeastern Oregon resource management plans, adopting a suite of new conservation measures aimed at protecting sage-grouse. BLM provided that the new conservation measures would not apply to the Project per se, but that BLM would develop project-specific conservation measures that would be included in the Project authorization. Subsequently, the U.S. Fish and Wildlife Service determined that the sage-grouse did not warrant protection under the U.S. Endangered Species Act.

1 grouse. When developing and implementing mitigation measures for impacts to core, low
2 density, and general sage-grouse habitats, the project developers shall: (a) Work directly
3 with the Department and permitting entity to obtain approval to implement a mitigation plan or
4 measures, at the responsibility of the developer, for mitigating impacts consistent with the
5 standard in OAR 635-140-0025(3) or, (b) Work with an entity approved by the Department to
6 implement, at the responsibility of the developer, "in-lieu fee" projects consistent with the
7 standard in OAR 635-140-0025(3). (c) Any mitigation undertaken pursuant to (a) or (b) above
8 must have in place measures to ensure the results of the mitigation activity will persist
9 (barring unintended natural events such as fire) for the life of the original impact. The
10 Department will engage in mitigation discussions related to development actions in a manner
11 consistent with applicable timelines of permitting entities.

12 OAR 635-140-0025(2)(e) requires project developers to provide compensatory mitigation for
13 unavoidable impacts to sage-grouse habitat. OAR 635-140-0025(3) provides procedures and
14 standards for developing compensatory mitigation. Again, with respect to quantifying
15 compensatory mitigation requirements for the Project, IPC is proposing that the Council include
16 a condition in the site certificate providing that the amount of sage-grouse habitat compensatory
17 mitigation required for the Project will be determined by the HQT prior to commencement of
18 construction. Regarding implementation of compensatory mitigation, IPC's Greater Sage-
19 Grouse Habitat Mitigation Plan (Attachment P2-3) identifies compensatory mitigation for the
20 Project's unavoidable impacts and is consistent with the mitigation standard in
21 OAR 635-140-0025(3).

22 **3.7.6 Monitoring Plan**

23 OAR 345-021-0010(1)(p)(H): A description of the applicant's proposed monitoring plans to
24 evaluate the success of the measures described in (G).

25 OAR 345-021-0010(1)(p)(H) requires the ASC include a monitoring plan to evaluate the success
26 of the proposed mitigation measures. IPC will conduct post-construction surveys for a 3-year
27 period following the conclusion of ground-disturbing activities; if pre-designated success criteria
28 are not met after 3 years, monitoring and any necessary re-vegetation efforts (as applicable) will
29 be conducted until pre-designated success criteria are met. Successful revegetation will be
30 determined by monitoring reclaimed areas and comparing them to preconstruction conditions.
31 Species and relative density will be assessed annually and compared to baseline data collected
32 prior to the start of ground-disturbing activities. Reclamation will be considered successful if the
33 site is within a specified percentage of the mean native species cover of its paired control site. If
34 after a second growing season problem areas have been identified (e.g., seed germination is
35 lower than expected, or there is a prevalence of noxious-weed species present that were not
36 there prior to construction), the area will be treated and re-seeded. Treatment may include
37 additional seedbed preparation, control of noxious- or invasive-plant species, use of soil
38 amendments, and/or use of another appropriate seed mix. The draft Reclamation and
39 Revegetation Plan (Attachment P1-3) contains a description of this monitoring that will be
40 implemented to determine whether post-construction revegetation efforts have been successful.

41 IPC will also monitor mitigation actions to determine if mitigation success criteria have been
42 met. The Greater Sage-Grouse Habitat Mitigation Plan (Attachment P2-3) discusses this
43 monitoring of mitigation for sage-grouse.

4.0 IDAHO POWER'S PROPOSED SITE CERTIFICATE CONDITIONS

IPC proposes the following site certificate conditions to ensure compliance with the EFSC Fish and Wildlife Standard as that standard relates to sage-grouse:

Prior to Construction

Fish and Wildlife Condition 3: *Prior to construction, the site certificate holder shall conduct a one-year traffic study in elk habitat (i.e., elk summer range and elk winter range) and sage-grouse habitat (i.e., areas of high population richness, core area habitat, low density habitat, or general habitat).*

Fish and Wildlife Condition 4: *Prior to construction, the site certificate holder shall finalize, and submit to the department for its approval, a final Reclamation and Revegetation Plan. The protective measures described in the draft Reclamation and Revegetation Plan in ASC Exhibit P1, Attachment P1-3, shall be included and implemented as part of the final Reclamation and Revegetation Plan, unless otherwise approved by the department.*

Fish and Wildlife Condition 6: *Prior to construction, the site certificate holder shall finalize, and submit to the department for its approval, a final Noxious Weed Plan. The protective measures as described in the draft Noxious Weed Plan in ASC Exhibit P1, Attachment P1-5, shall be included and implemented as part of the final Noxious Weed Plan, unless otherwise approved by the department.*

Fish and Wildlife Condition 8: *Prior to construction, the site certificate holder shall finalize, and submit to the department for its approval, a final Sage-Grouse Habitat Mitigation Plan.*

a. The site certificate holder shall provide to the department the information necessary for the State of Oregon to calculate the amount of sage-grouse habitat compensatory mitigation required for the facility using Oregon's Sage-Grouse Habitat Quantification Tool.

b. The final Sage-Grouse Habitat Mitigation Plan shall address the potential sage-grouse habitat impacts through mitigation banking, an in-lieu fee program, development of mitigation projects by the site certificate holder, or a combination of the same.

i. To the extent the site certificate holder shall develop its own mitigation projects, the final Sage-Grouse Habitat Mitigation Plan shall:

1. Identify the location of each mitigation site, including a map of the same;

2. Identify the number of credit-acres that each mitigation site will provide for the site certificate holder;

3. Include a site-specific mitigation management plan for each mitigation site that provides for:

A. A baseline ecological assessment;

B. Conservation actions to be implemented at the site;

C. An implementation schedule for the baseline ecological assessment and conservation actions;

D. Performance measures;

E. A reporting plan; and

F. A monitoring plan.

ii. To the extent the site certificate shall utilize a mitigation bank or in-lieu fee program, the final Sage-Grouse Habitat Mitigation Plan shall:

- 1 1. Describe the nature, extent, and history of the mitigation bank
2 or in-lieu fee program; and
- 3 2. Identify the number of credit-acres that each mitigation site will
4 provide for the site certificate holder.

5 c. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate
6 the amount of sage-grouse habitat compensatory mitigation required for the
7 facility and the number of credit-acres that each mitigation site will provide for the
8 site certificate holder.

9 d. The Sage-Grouse Habitat Mitigation Plan may be amended from time to time
10 by agreement of the site certificate holder and the department. Such
11 amendments may be made without amendment to the site certificate. The
12 Council authorizes the department to agree to amendments of the plan and to
13 mitigation actions that may be required under the plan; however, the Council
14 retains the authority to approve, reject, or modify any amendment of the plan
15 agreed to by the department.

16 **Fish and Wildlife Condition 9:** Prior to construction, the site certificate holder
17 shall instruct all construction personnel on the protection of cultural,
18 paleontological, ecological, and other natural resources such as (a) federal and
19 state laws regarding antiquities, paleontological resources, and plants and
20 wildlife, including collection and removal; (b) the importance of these resources;
21 (c) the purpose and necessity of protecting them; and (d) reporting and
22 procedures for stop work.

23 **During Construction**

24 **Fish and Wildlife Condition 11:** During construction, the site certificate holder
25 shall not conduct ground-disturbing activities within sage-grouse areas of high
26 population richness, core area habitat, low density habitat, or general habitat
27 between March 1 to June 30. Upon request by the site certificate holder, the
28 department may provide exceptions to this restriction. The site certificate holder's
29 request must include a justification for the request, including any actions the site
30 certificate holder will take to avoid, minimize, or mitigate impacts to sage-grouse
31 in the relevant area.

32 **Fish and Wildlife Condition 15:** During construction, the site certificate holder
33 shall flag the following environmentally sensitive areas as restricted work zones:
34 a. State protected plant species;
35 b. Wetlands and waterways that are not authorized for construction impacts;
36 c. Areas with active spatial and seasonal restrictions; and
37 d. Category 1 habitat.

38 The site certificate holder shall submit a mapset showing the location of
39 environmentally sensitive areas and restricted work zones to the department for
40 its approval. The site certificate shall make the mapset available to all
41 construction personnel.

42 **Fish and Wildlife Condition 16:** During construction, the site certificate holder
43 shall employ a speed limit of 25 miles per hour on facility access roads, unless
44 the applicable land-management agency or landowner has designated an
45 alternative speed limit.

46 **Fish and Wildlife Condition 17:** During construction, the site certificate holder
47 shall conduct all work in compliance with the final Reclamation and Revegetation
48 Plan referenced in Fish and Wildlife Condition 4.

1 **Fish and Wildlife Condition 19:** During construction, the site certificate holder
2 shall conduct all work in compliance with the final Noxious Weed Plan referenced
3 in Fish and Wildlife Condition 6.

4 **Fish and Wildlife Condition 21:** During construction, the site certificate holder
5 shall commence implementation of the conservation actions set forth in the final
6 Sage-Grouse HMP referenced in Fish and Wildlife Condition 8.

7 **Fish and Wildlife Condition 22:** During construction, the site certificate holder
8 shall construct the transmission line to avian-safe design standards consistent
9 with the site certificate holder's Avian Protection Plan (Idaho Power 2015).

10 **During the Second Year of Operation**

11 **Fish and Wildlife Condition 23:** During the second year of operation, the site
12 certificate holder shall conduct a one-year traffic study in elk habitat (i.e., elk
13 summer range and elk winter range) and sage-grouse habitat (i.e., areas of high
14 population richness, core area habitat, low density habitat, or general habitat).

15 **During the Third Year of Operation**

16 **Fish and Wildlife Condition 25:** During the third year of operation, the site
17 certificate holder shall provide to the department the information necessary for
18 the State of Oregon to calculate the final amount of sage-grouse habitat
19 compensatory mitigation required for the facility using Oregon's Sage-Grouse
20 Habitat Quantification Tool. After receiving the calculations from the State, the
21 site certificate holder shall provide to the department a report demonstrating that
22 sage-grouse habitat mitigation shall be commensurate with the final
23 compensatory mitigation calculations.

24 a. The final calculations shall be based on the as-constructed footprint of the
25 facility.

26 b. Oregon's Sage-Grouse Habitat Quantification Tool shall be used to calculate
27 the amount of sage-grouse habitat compensatory mitigation required for the
28 facility, and the information from the pre- and post-construction traffic studies
29 shall be used in the calculation.

30 **During Operation**

31 **Fish and Wildlife Condition 26:** During operation, the site certificate holder shall
32 employ a speed limit of 25 miles per hour on facility access roads, unless the
33 applicable land-management agency or landowner has designated an alternative
34 speed limit.

35 **Fish and Wildlife Condition 27:** During operation, the site certificate holder shall
36 employ access control on facility access roads within elk habitat (i.e., elk summer
37 range and elk winter range) and sage-grouse habitat (i.e., areas of high
38 population richness, core area habitat, low density habitat, or general habitat),
39 subject to approval by the applicable land-management agency or landowner.

40 **Fish and Wildlife Condition 29:** During operation, the site certificate holder shall
41 conduct all work in compliance with the final Noxious Weed Plan referenced in
42 Fish and Wildlife Condition 6.

1 5.0 CONCLUSION

2 Exhibit P2 includes the application information provided for in OAR 345-021-0010(1)(p), as it
 3 applies to sage-grouse. Further, the evidence set forth in Exhibit P2 establishes that the design,
 4 construction, and operations of the Project, taking into account mitigation, will be consistent with
 5 ODFW's Greater Sage-Grouse Conservation Strategy (see OAR Chapter 635, Division 140)
 6 and Fish and Wildlife Habitat Mitigation Policy (see OAR 345-022-0060), and in turn, will satisfy
 7 EFSC's Fish and Wildlife Standard (see OAR 345-022-0060).

8 6.0 COMPLIANCE CROSS-REFERENCES

9 Table P2-8 identifies the location within the ASC of the information responsive to the application
 10 submittal requirements in OAR 345-021-0010(1)(p), the Fish and Wildlife Habitat Standard at
 11 OAR 345-022-0060, the Greater Sage-Grouse Conservation Strategy at OAR 635-140-0025,
 12 and the relevant Amended Project Order provisions.

13 **Table P2-8. Compliance Requirements and Relevant Cross-References**

Requirement	Location
OAR 345-022-0060	
To issue a site certificate, the Council must find that the design, construction and operation of the facility, taking into account mitigation, are consistent with: (1) The general fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025(1) through (6) in effect as of February 24, 2017, and (2) For energy facilities that impact sage-grouse habitat, the sage-grouse specific habitat mitigation requirements of the Greater Sage-Grouse Conservation Strategy for Oregon at OAR 635-415-0025(7) and OAR 635-140-0000 through -0025 in effect as of February 24, 2017.	Throughout Exhibit P2; Exhibit P1, Section 3.3 and 3.5 and Attachment P1-6
OAR 635-140-0025	
(2) Policy 2. The Department may approve or recommend approval of mitigation for impacts from a large-scale development permitted by a county; or development actions permitted by a state or federal government entity on public land, within sage-grouse habitat only after the following mitigation hierarchy has been addressed by the permitting entity, with the intent of directing the development action away from the most productive habitats and into the least productive areas for sage-grouse (in order of importance: core area, low density, general, and non-habitat). . . .	Exhibit P2, Section 3.7.5.1
(d) Minimization. If after exercising the above avoidance tests, the permitting entity finds the proposed development action cannot be moved to non-habitat or into a habitat category that avoids adverse direct and indirect impacts to a habitat category of greater significance (i.e., core or low density), then the next step applied in the mitigation hierarchy will be minimization of the direct and indirect impacts of the proposed development action. Minimization consists of how to best locate, construct, operate and time (both seasonally and diurnally) the development action so as to avoid or minimize direct and indirect impacts on important sage-grouse habitat and sage-grouse. . . .	Exhibit P2, Section 3.7.5.1

Requirement	Location
(B) Minimizing impacts from development actions in general habitat shall include consultation between the development proponent and the Department that considers and results in recommendations on how to best locate, construct, or operate the development action so as to avoid or minimize direct and indirect impacts on important sage-grouse habitat within the area of general habitat.	Exhibit P2, Section 3.7.5.1
(e) Compensatory Mitigation. If avoidance and minimization efforts have been exhausted, compensatory mitigation to address both direct and indirect impacts will be required as part of the permitting process for remaining adverse impacts from the proposed development action to sage-grouse habitat, consistent with the mitigation standard in (3) Policy 3 below.	Exhibit P2, Section 3.7.5.1 and Attachment P2-3
(3) Policy 3. The standard for compensatory mitigation of direct and indirect habitat impacts in sage-grouse habitat (core low density, and general areas) is to achieve net conservation benefit for sage-grouse by replacing the lost functionality of the impacted habitat to a level capable of supporting sage-grouse numbers than that of the habitat which was impacted. Where mitigation actions occur in existing sage-grouse habitat, the increased functionality must be in addition to any existing functionality of the habitat to support sage-grouse. When developing and implementing mitigation measures for impacts to core, low density, and general sage-grouse habitats, the project developers shall:	Exhibit P2, Section 3.7.5.1 and Attachment P2-3
(a) Work directly with the Department and permitting entity to obtain approval to implement a mitigation plan or measures, at the responsibility of the developer, for mitigating impacts consistent with the standard in OAR 635-140-0025(3) or,	Exhibit P2, Section 3.7.5.1 and Attachment P2-3
(b) Work with an entity approved by the Department to implement, at the responsibility of the developer, "in-lieu fee" projects consistent with the standard in OAR 635-140-0025(3).	Exhibit P2, Section 3.7.5.1 and Attachment P2-3
(c) Any mitigation undertaken pursuant to (a) or (b) above must have in place measures to ensure the results of the mitigation activity will persist (barring unintended natural events such as fire) for the life of the original impact. The Department will engage in mitigation discussions related to development actions in a manner consistent with applicable timelines of permitting entities.	Exhibit P2, Section 3.7.5.1 and Attachment P2-3
OAR 345-021-0010(1)(p)	
Exhibit P. Information about the fish and wildlife habitat and the fish and wildlife species, other than the species addressed in subsection (q) that could be affected by the proposed facility, providing evidence to support a finding by the Council as required by OAR 345-022-0060. The applicant shall include:	
(A) A description of biological and botanical surveys performed that support the information in this exhibit, including a discussion of the timing and scope of each survey.	Exhibit P2, Section 3.2; Exhibit P1, Section 3.2, Attachments P1-2, P1-7A, and P1-7B

Requirement	Location
(B) Identification of all fish and wildlife habitat in the analysis area, classified by the habitat categories as set forth in OAR 635-415-0025 and a description of the characteristics and condition of that habitat in the analysis area.	Exhibit P2, Section 3.3 and Section 3.7; Exhibit P1, Section 3.3.1 and 3.3.2 and Attachment P1-1
(C) A map showing the locations of the habitat identified in (B).	Exhibit P2, Section 3.4; Exhibit P1, Section 3.3.3 and Attachment P1-8
(D) Based on consultation with the Oregon Department of Fish and Wildlife (ODFW) and appropriate field study and literature review, identification of all State Sensitive Species that might be present in the analysis area and a discussion of any site-specific issues of concern to ODFW.	Exhibit P2, Section 3.5; Exhibit P1, Section 3.4 and Attachments P1-7A and P1-7B
(E) A baseline survey of the use of habitat in the analysis area by species identified in (D) performed according to a protocol approved by the Department and ODFW.	Exhibit P2, Section 3.6; Exhibit P1, Section 3.2, Attachments P1-2 and P1-7A and P1-7B
(F) A description of the nature, extent and duration of potential adverse impacts on the habitat identified in (B) and species identified in (D) that could result from construction, operation and retirement of the proposed facility.	Exhibit P2, Section 3.7; Exhibit P1, Sections 3.5.1, 3.5.2, 3.5.3, 3.5.4, and 3.5.5
(G) A description of any measures proposed by the applicant to avoid, reduce or mitigate the potential adverse impacts described in (F) in accordance with the ODFW mitigation goals described in OAR 635-415-0025 and a discussion of how the proposed measures would achieve those goals.	Exhibit P2, Section 3.7.5; Exhibit P1, Sections 3.5.6, Section 4.0, Attachments P1-3, P1-4, P1-5, P1-6, and P1-9
(H) A description of the applicant's proposed monitoring plans to evaluate the success of the measures described in (G).	Exhibit P2, Section 3.7.6; Exhibit P1, Section 3.5.7, Attachments P1-3, P1-4, P1-5, P1-6, and P1-9
Amended Project Order Provisions, Section III(p)	
The applicant has proposed a "phased survey" approach for data collection during the site certificate review process. The Department understands that the entirety of the site boundary for the proposed facility may not yet have been surveyed, mapped for vegetation types, and categorized under ODFW's habitat categorization guidance. Nevertheless, Exhibit P shall include as much information as possible about the results of the field surveys conducted to date for biological resources and the schedule for future surveys.	Exhibit P2, Section 3.2 and Section 3.6; Exhibit P1, Sections 3.2, 3.3, and 3.4 and Attachments P1-7A, P1-7B, and P1-8

Requirement	Location
Exhibit P shall include analysis of how the evidence provided supports a finding by the Council that the proposed facility meets the Council's fish and wildlife habitat standard.	Exhibit P2, Section 3.0 and Attachment P1-6
Exhibit P must include the results of all surveys for fish and wildlife habitat in the analysis area.	Exhibit P2, Sections 3.2 and 3.6; Exhibit P1, Section 3.2.4 and Attachments P1-7A, P1-7B, and P1-8
Exhibit P must also identify all state sensitive species that may be present in the analysis area and include the results of surveys for state sensitive species.	Exhibit P2, Section 3.5; Exhibit P1, Section 3.2.4 and Attachments P1-7A, P1-7B, and P1-8
Please also include the survey methodology, including scope and timing of each survey. Surveys must be performed by qualified survey personnel during the season or seasons appropriate to the detection of the species in question.	Exhibit P2, Sections 3.2 and 3.6; Exhibit P1, Section 3.2.4, and Attachments P1-7A and P1-7B
The applicant must also include in Exhibit P its habitat categorization and tables depicting the estimated temporary and permanent impacts, broken down by habitat categories.	Exhibit P2, Section 3.3; Exhibit P1, Section 3.5.3.3
If particular fish and/or wildlife habitat or state sensitive species are identified within the analysis area that could be adversely affected as a result of the proposed facility, the applicant shall include description of the nature, extent and duration of potential adverse impacts and a description of any proposed mitigation measures. Fish and Wildlife Habitat Mitigation Policy (OAR Chapter 635, Division 415) classifies six habitat categories and establishes a mitigation goal for each category. The applicant for a site certificate must identify the appropriate habitat category for all areas affected by the proposed facility and provide the basis for each category designation, subject to ODFW review. The applicant must show how it would comply with the habitat mitigation goals and standards by appropriate monitoring and mitigation.	Exhibit P2, Section 3.7; Exhibit P1, Section 3.5, and Attachment P1-6
As a result of the access timing issues for this proposed facility, please also provide proposed site certificate conditions for the Council's consideration related to requirements for the applicant to complete all unfinished surveys within the project's site boundary prior to construction. The proposed site certificate conditions should also address submittal requirements for reporting future survey results, adjustment of previously calculated impact areas (if necessary), and the applicant's proposed approach to document approval of final results by agencies or the Council prior to commencing construction activities.	Exhibit P2, Section 4.0; Exhibit P1, Section 4.0

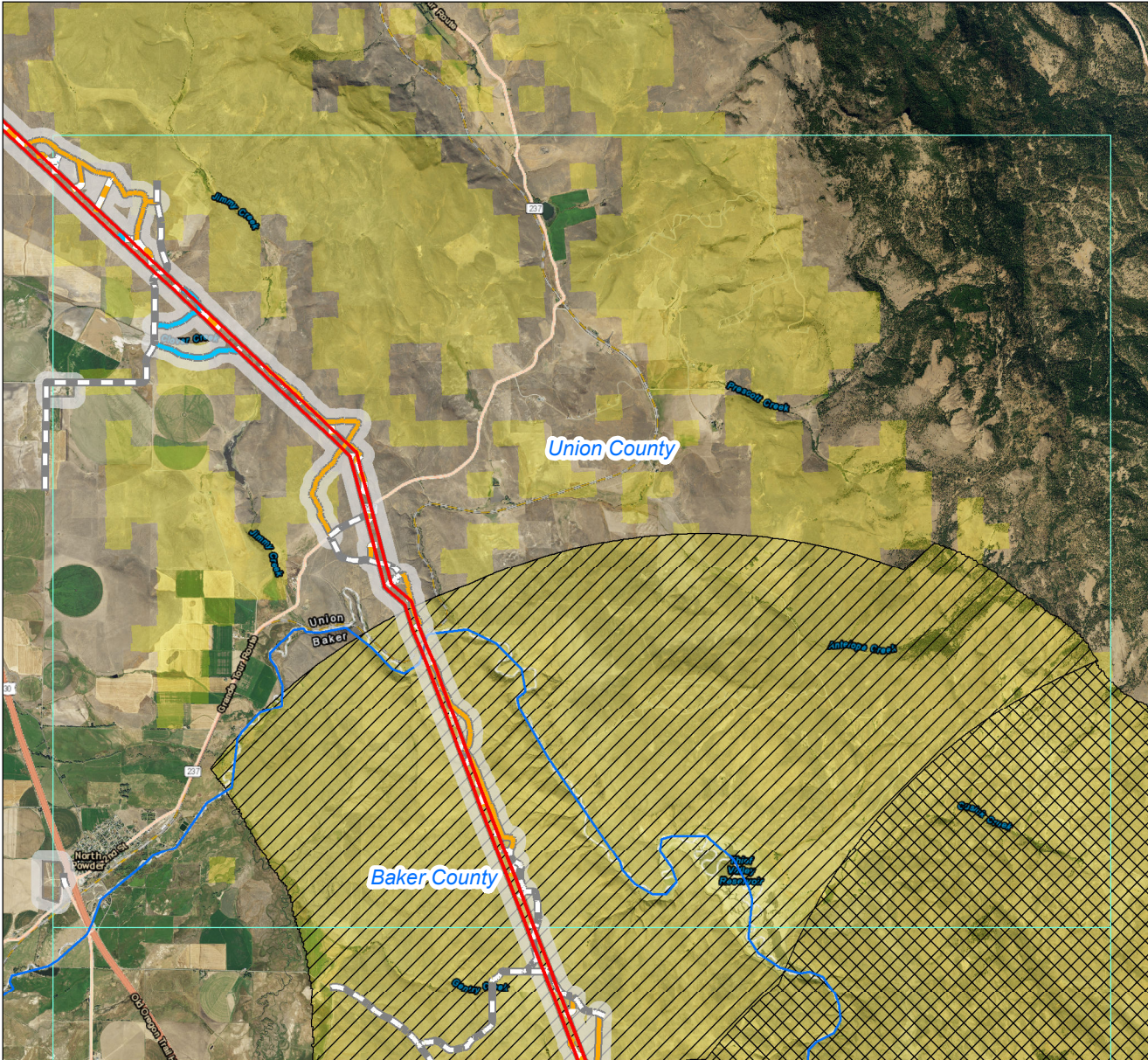
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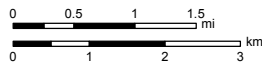
**ATTACHMENT P2-1
GREATER SAGE-GROUSE HABITAT MAPBOOK**

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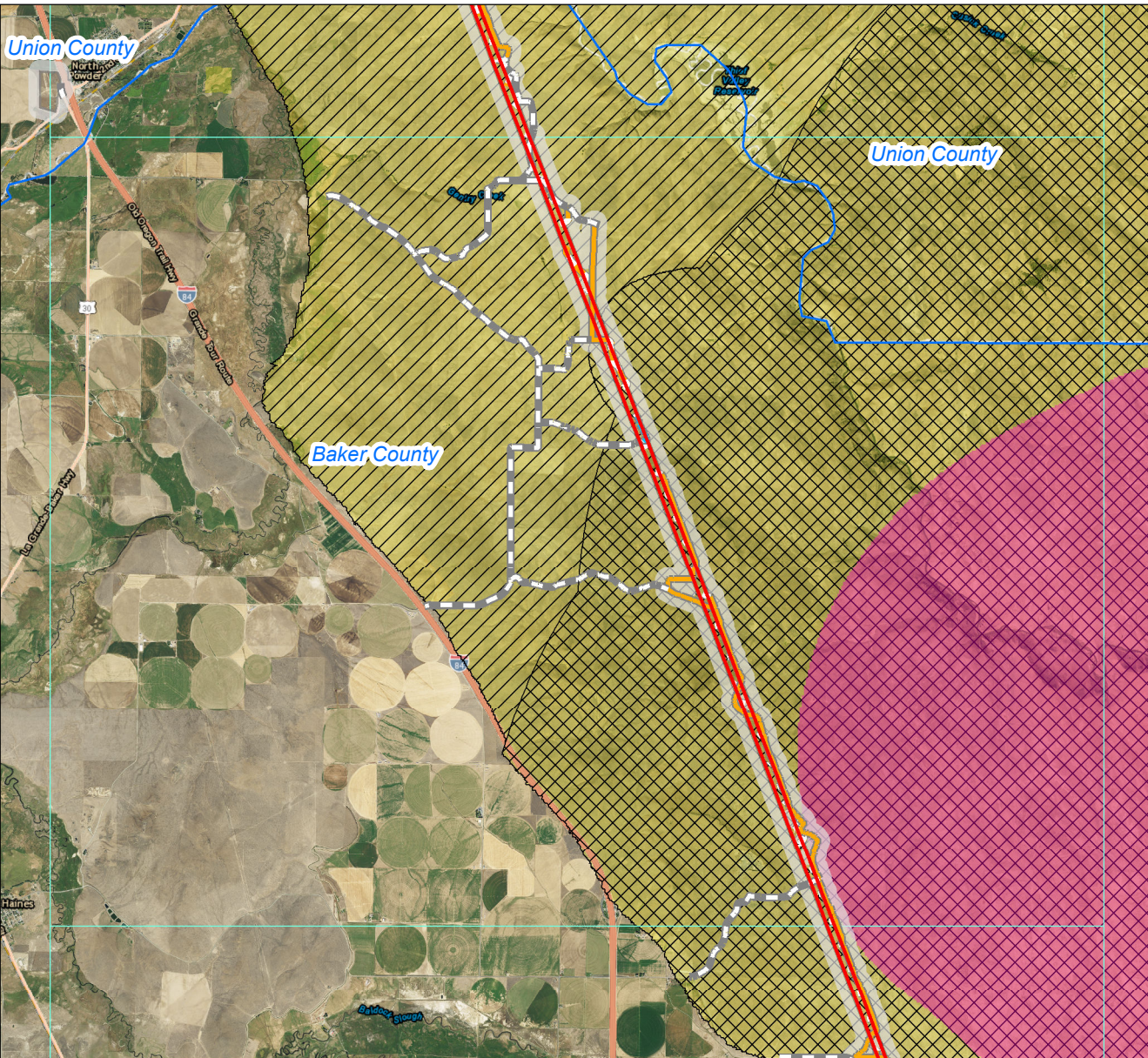
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



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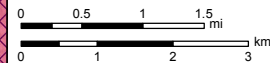
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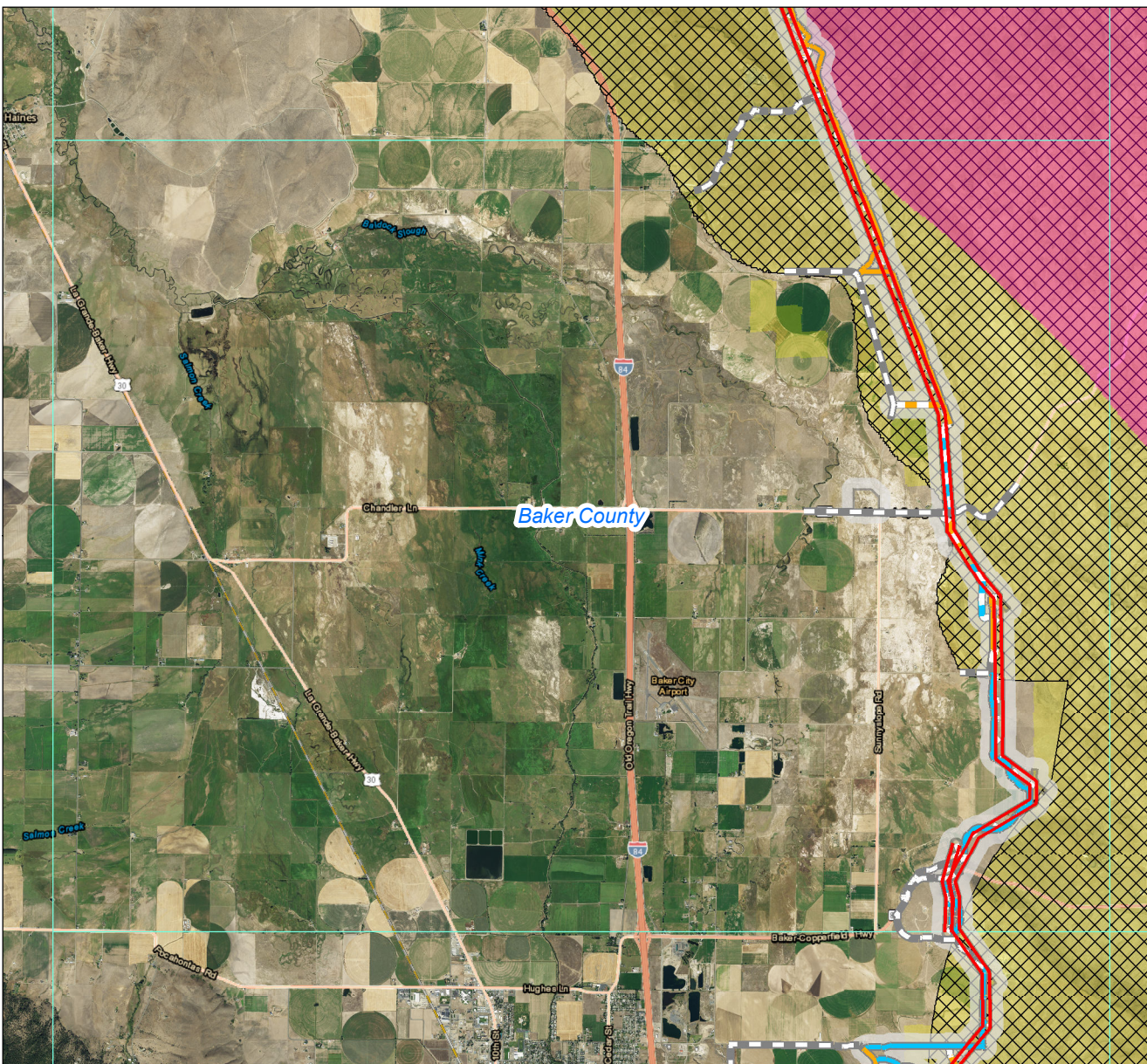
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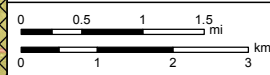
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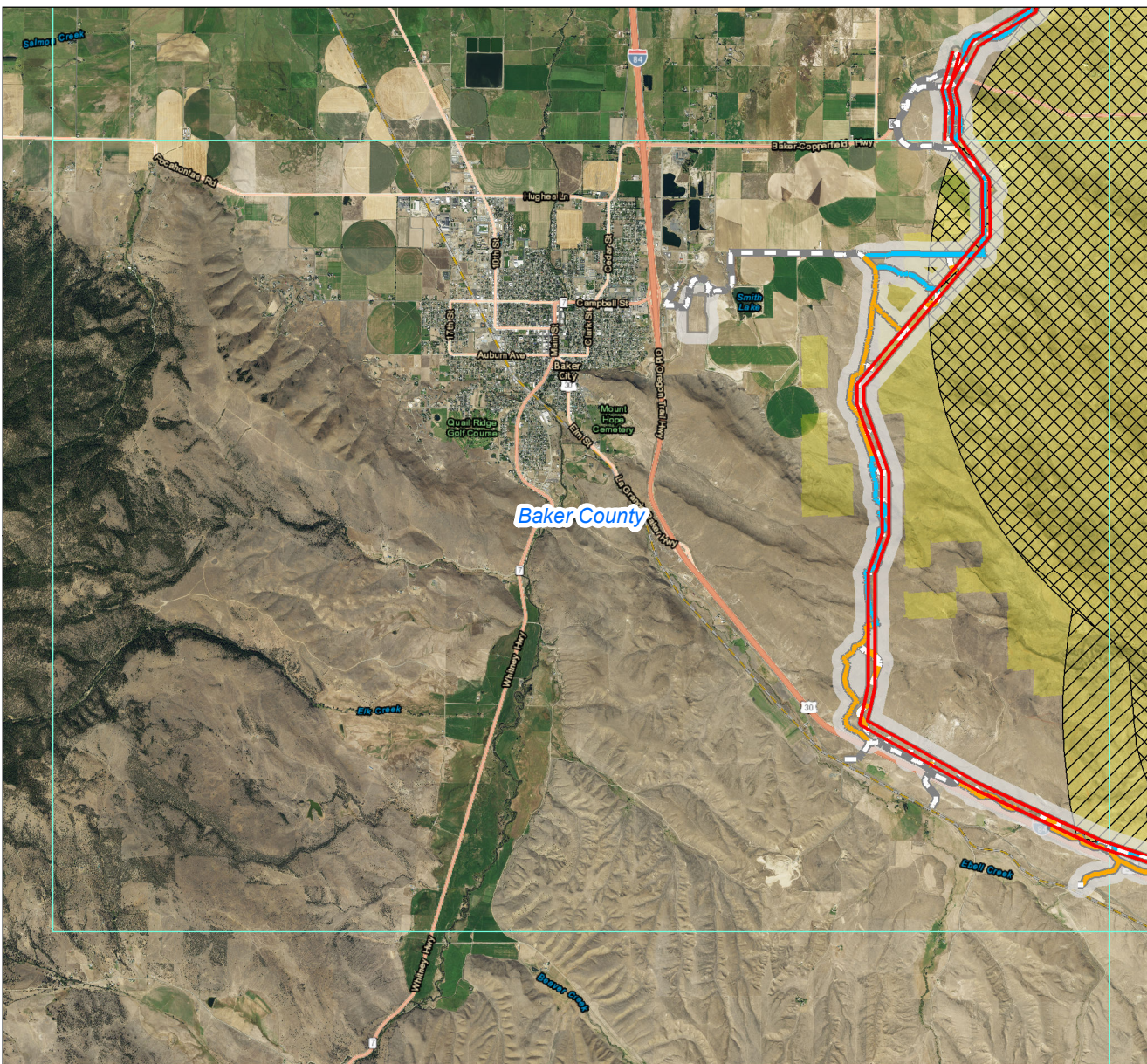


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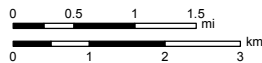
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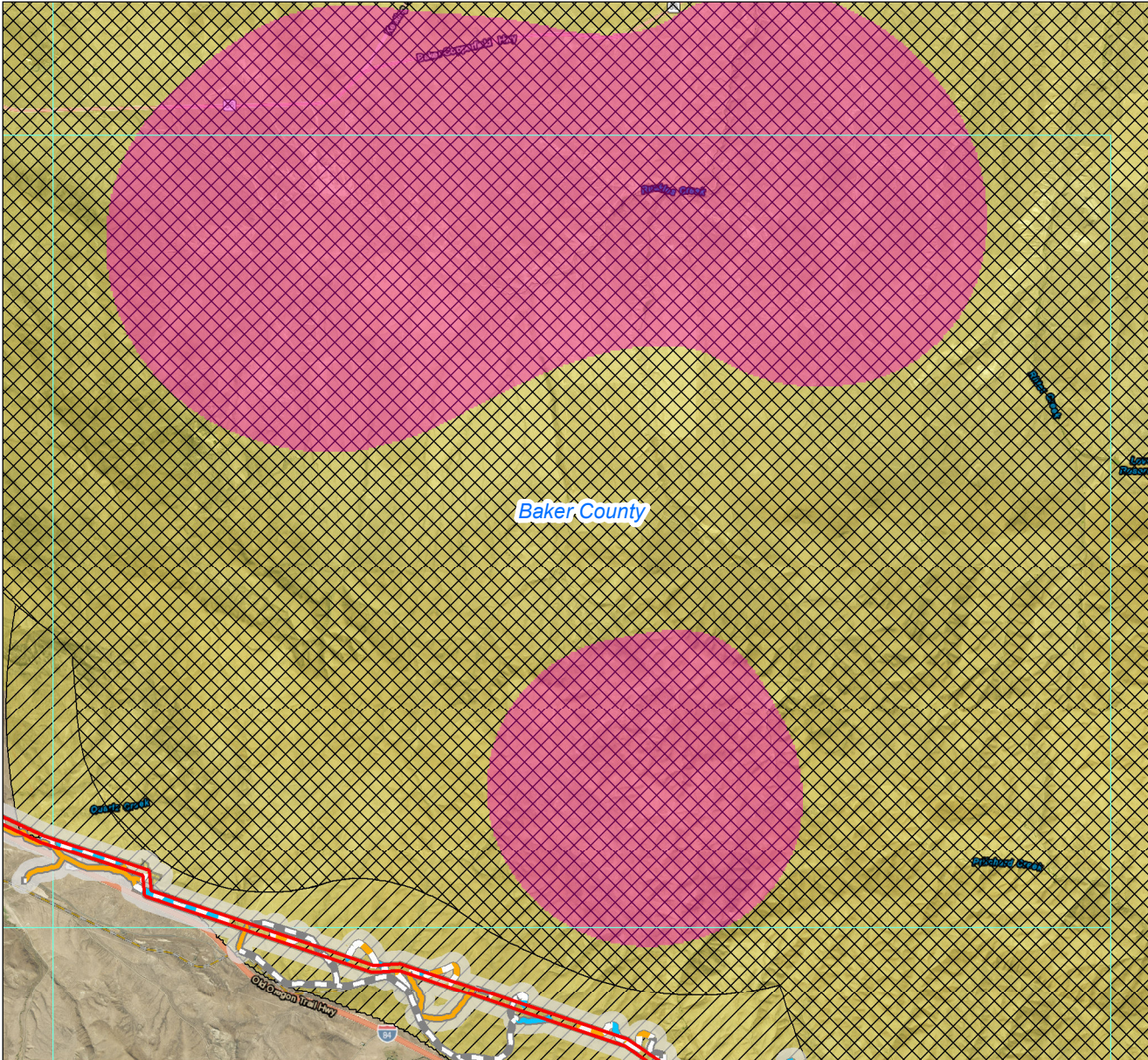
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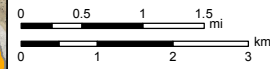


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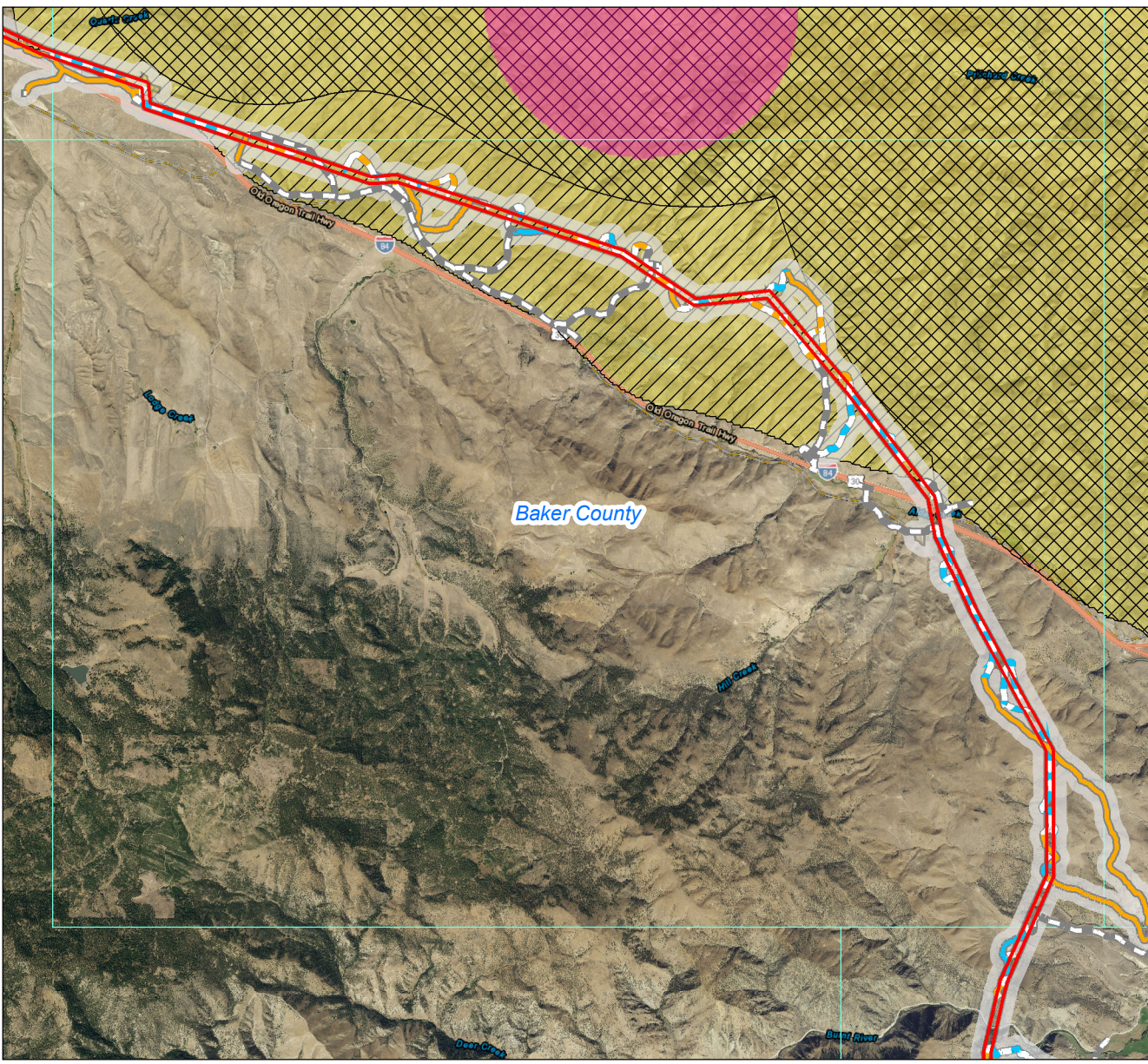
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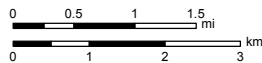
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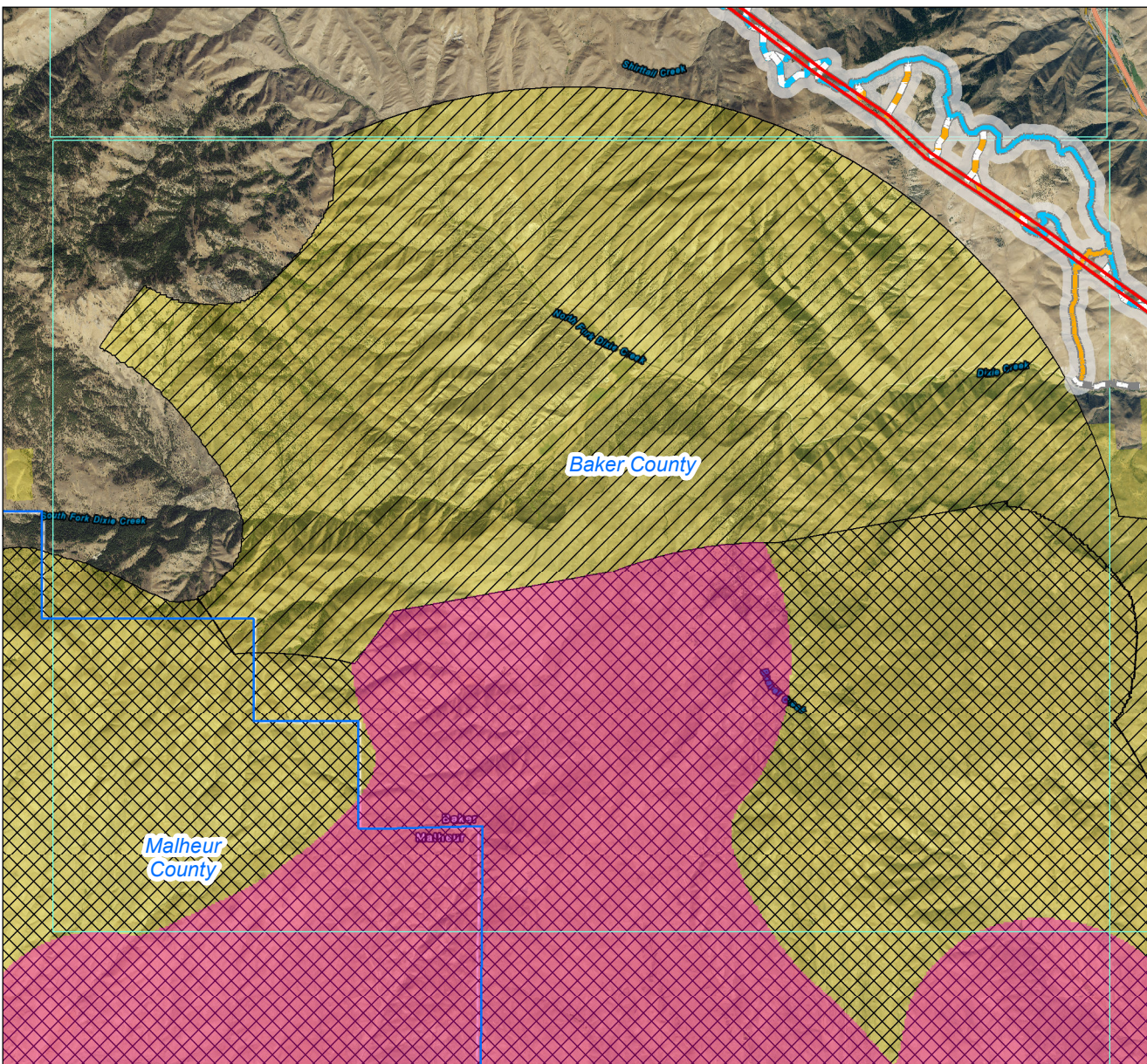


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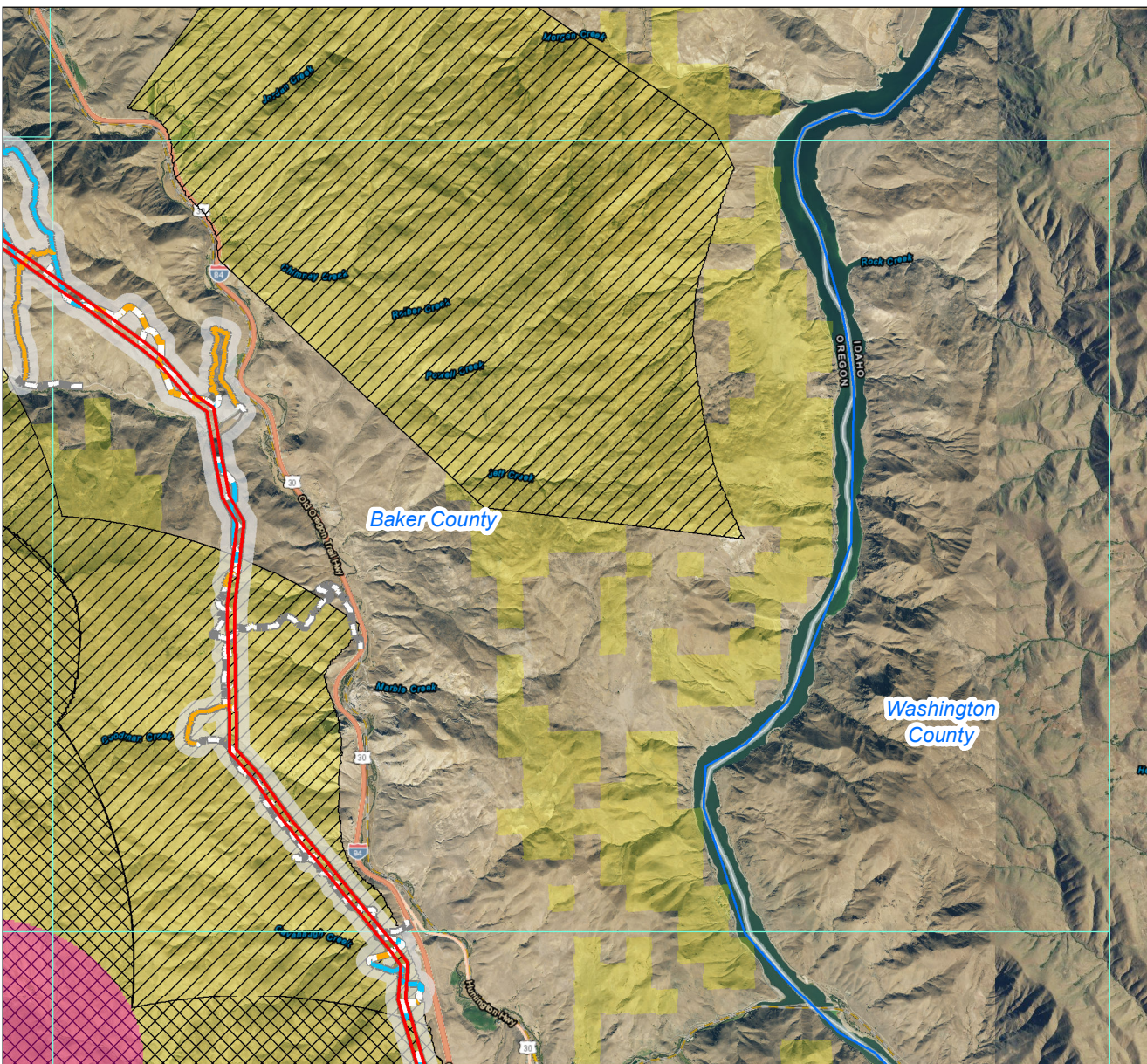


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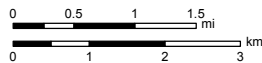


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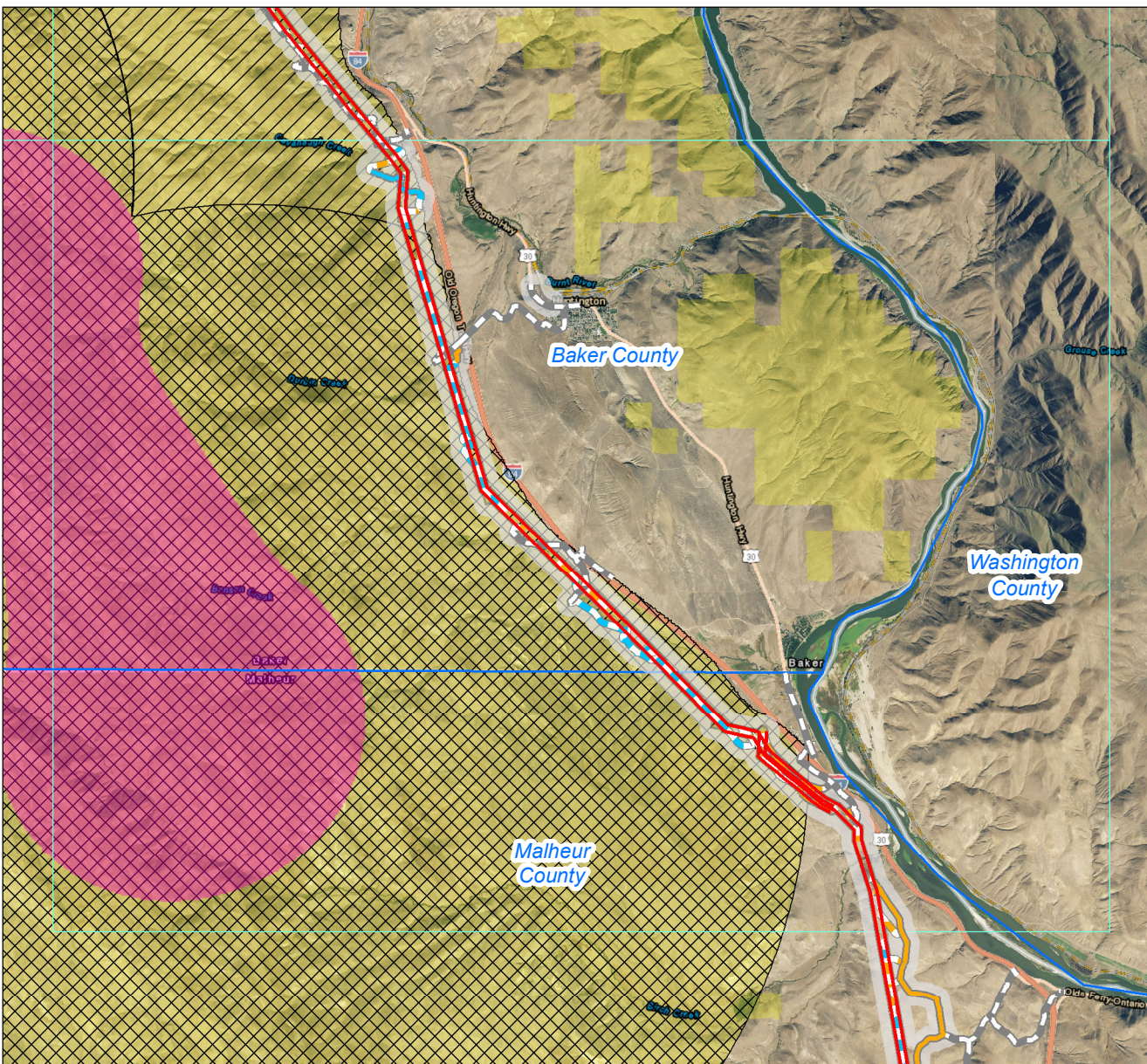


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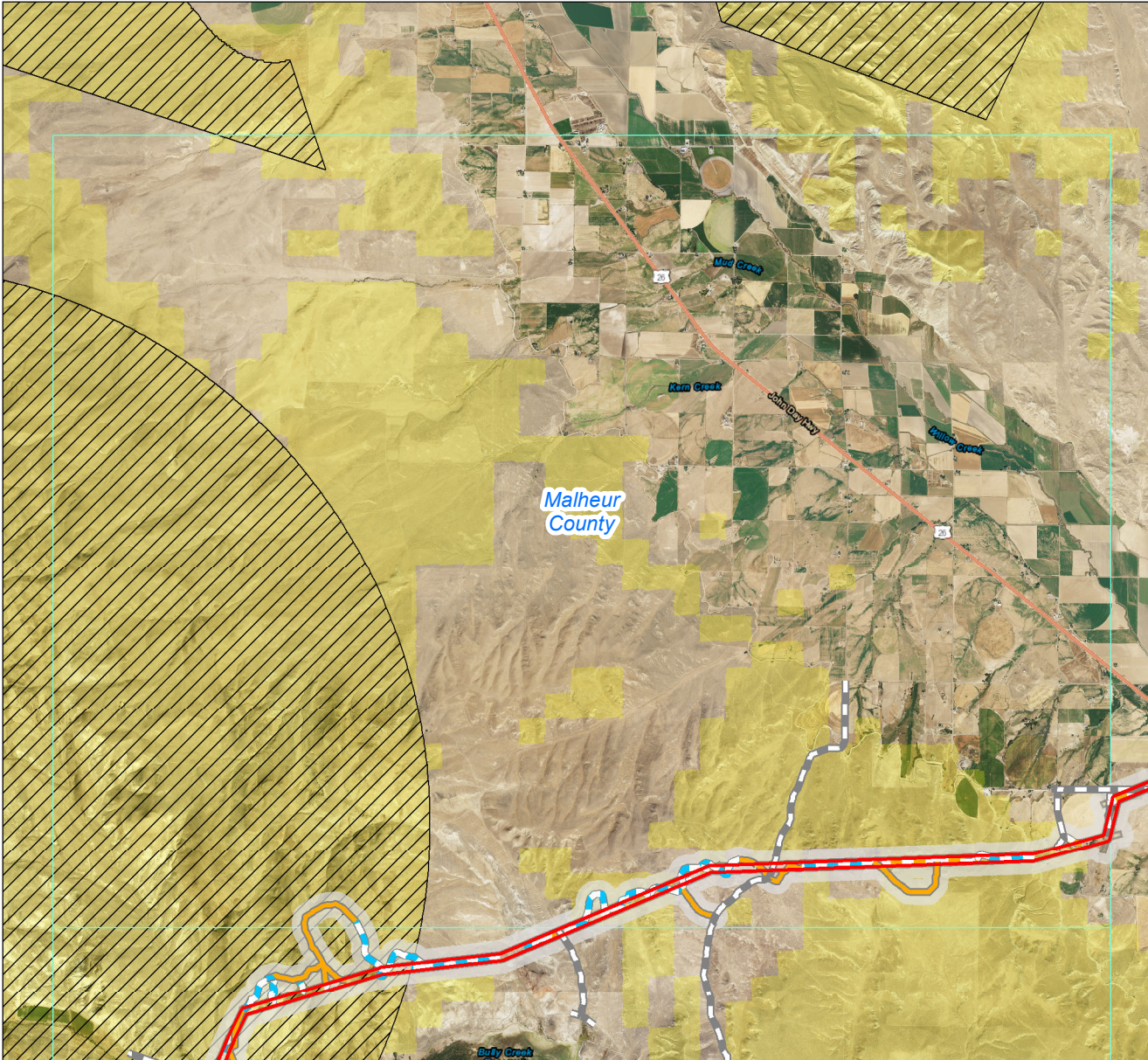


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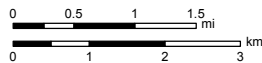


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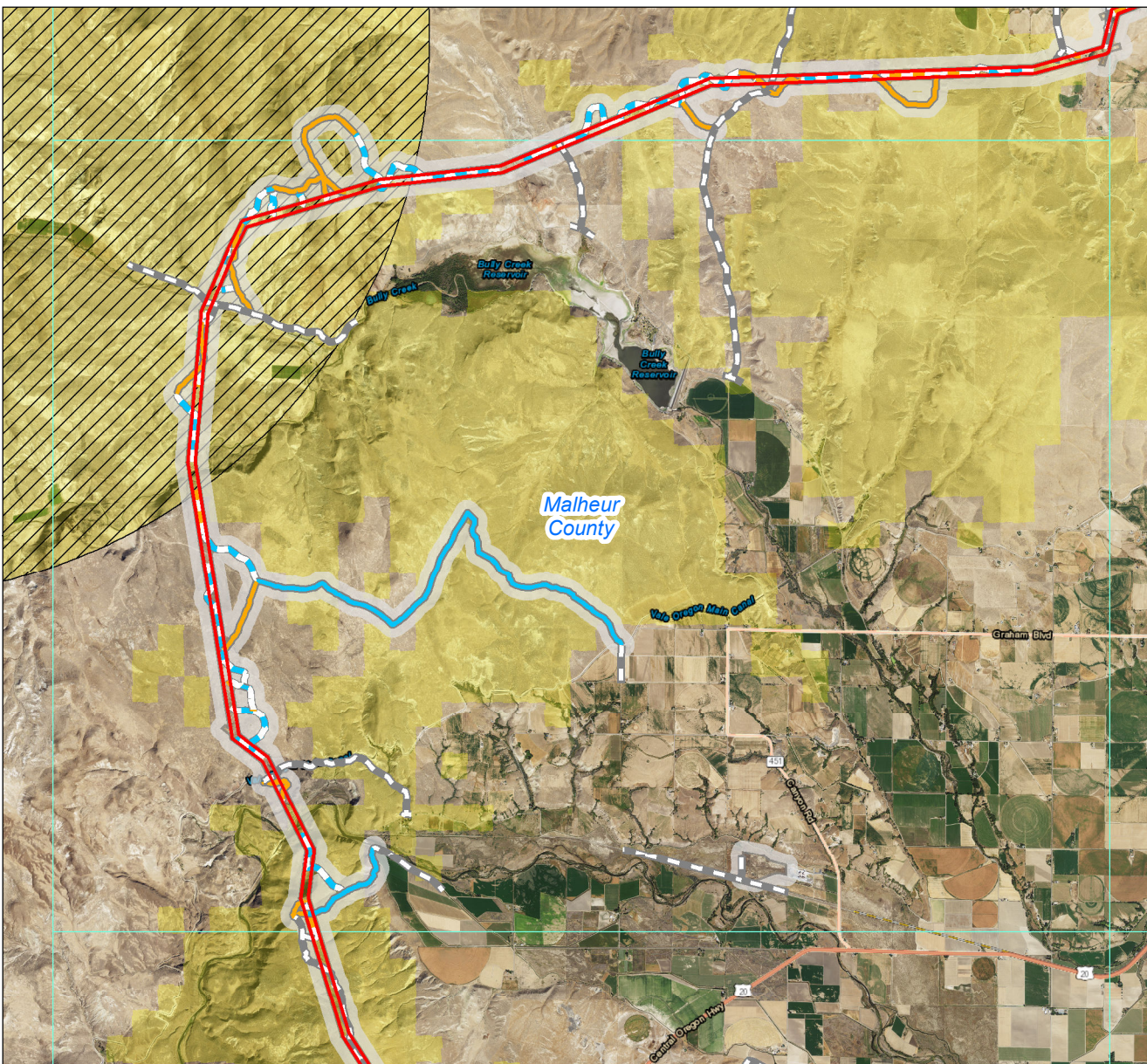
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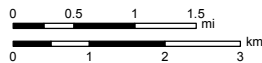


B2H Corridor OR & ID



- Proposed Route
- Access**
- Existing Road, No Substantial Improvements (0-20% Modifications)
- Existing Road, Moderate Improvements (21-70%)
- Existing Road, Extensive Improvements (71-100%)
- New Road, Bladed
- New Road, Primitive
- Site Boundary (Proposed Route)

- GSGR Habitat in Oregon (ODFW)**
- Core
- Low Density
- General Habitat
- Areas of High Population Richness
- County Boundary
- Mapbook page



Source: WAFWA, USGS, USDA, ESRI
Coordinate System:
NAD 1983 UTM Zone 11N
Author: GPG

B2H Corridor OR & ID



- Proposed Route
- Access**
- Existing Road, No Substantial Improvements (0-20% Modifications)
- Existing Road, Moderate Improvements (21-70%)
- Existing Road, Extensive Improvements (71-100%)
- New Road, Bladed
- New Road, Primitive
- Site Boundary (Proposed Route)
- GSGR Habitat in Oregon (ODFW)**
- Core
- Low Density
- General Habitat
- Areas of High Population Richness
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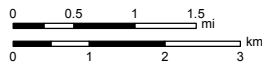
Source: WAFWA, USGS, USDA, ESRI
 Coordinate System:
 NAD 1983 UTM Zone 11N
 Author: GPG

B2H Corridor OR & ID



Malheur
County

- Proposed Route
- Access**
 - Existing Road, No Substantial Improvements (0-20% Modifications)
 - Existing Road, Moderate Improvements (21-70%)
 - Existing Road, Extensive Improvements (71-100%)
 - New Road, Bladed
 - New Road, Primitive
- Site Boundary (Proposed Route)
- GSGR Habitat in Oregon (ODFW)**
 - Core
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 - Mapbook page



Source: WAFWA, USGS, USDA, ESRI
Coordinate System:
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Author: GPG



B2H Corridor OR & ID



- Proposed Route
- Access**
- Existing Road, No Substantial Improvements (0-20% Modifications)
- Existing Road, Moderate Improvements (21-70%)
- Existing Road, Extensive Improvements (71-100%)
- New Road, Bladed
- New Road, Primitive
- Site Boundary (Proposed Route)

- GSGR Habitat in Oregon (ODFW)**
- Core
- Low Density
- General Habitat
- Areas of High Population Richness
- County Boundary
- Mapbook page

Malheur
County



Source: WAFWA, USGS, USDA, ESRI
Coordinate System:
NAD 1983 UTM Zone 11N
Author: GPG



**ATTACHMENT P2-2
GREATER SAGE-GROUSE LEK LOCATIONS**

Table P2-2-1. Number of Greater Sage-grouse Leks with an Occupied³ Status within Varying Distances of the Project Centerline

Facility	County	Leks within 0.5 mile	Leks within 1 mile	Leks within 2 miles	Leks within 4 miles
Proposed Route	Morrow County	0	0	0	0
	Umatilla County	0	0	0	0
	Union County	0	0	0	0
	Baker County	0	0	0	5
	Malheur County	0	0	0	0
Total Lek Count Along Proposed Route¹		0	0	0	5

¹ Where the Proposed Route crosses county lines and intersects a lek buffer, the lek is counted for the portions of the route in each county. These leks are counted only once, regardless of county in the total overall lek count.

² Includes areas related to the new substation footprint.

³ "Occupied Lek": is a regularly visited lek that has had ≥ 1 male counted in the last 7 years (ODFW 2011).

Table P2-2-2. Number of Greater Sage-grouse Leks with an Occupied-Pending³ Status within Varying Distances of the Project Centerline

Facility	County	Leks within 0.5 mile	Leks within 1 mile	Leks within 2 miles	Leks within 4 miles
Proposed Route	Morrow County	0	0	0	0
	Umatilla County	0	0	0	0
	Union County	0	0	0	0
	Baker County	0	0	0	3
	Malheur County	0	0	0	0
Total Along Proposed Route¹		0	0	0	3

¹ Where the Proposed Route crosses county lines and intersects a lek buffer, the lek is counted for the portions of the route in each county. These leks are counted only once, regardless of county in the total overall lek count.

² Includes areas related to the new substation footprint.

³ "Occupied-Pending": is a lek not counted regularly in the last 7 years, but where birds were present at the last visit (ODFW 2011).

Table P2-2-3. Number of Greater Sage-grouse Leks with an Unoccupied-Pending³ Status within Varying Distances of the Project Centerline

Facility	County	Leks within 0.5 mile	Leks within 1 mile	Leks within 2 miles	Leks within 4 miles
Proposed Route	Morrow County	0	0	0	0
	Umatilla County	0	0	0	0
	Union County	0	0	0	0
	Baker County	2	3	10	22
	Malheur County	0	1	2	2
Total Along Proposed Route¹		2	4	12	24

¹ Where the Proposed Route crosses county lines and intersects a lek buffer, the lek is counted for the portions of the route in each county. These leks are counted only once, regardless of county in the total overall lek count.

² Includes areas related to the new substation footprint.

³ "Unoccupied-Pending": is a lek not counted regularly in a 7 year period, but where birds were not present at last visit (ODFW 2011).

Table P2-2-4. Number of Greater Sage-grouse Leks with an Historic Status³ within Varying Distances of the Project Centerline¹

Facility	County	Leks within 0.5 mile	Leks within 1 mile	Leks within 2 miles	Leks within 4 miles
Proposed Route	Morrow County	0	0	0	0
	Umatilla County	0	0	0	0
	Union County	0	0	0	0
	Baker County	0	0	0	0
	Malheur County	0	0	0	0
Total Lek Count Along Proposed Route¹		0	0	0	0

¹ Where the Proposed Route crosses county lines and intersects a lek buffer, the lek is counted for the portions of the route in each county. These leks are counted only once, regardless of county in the total overall lek count.

² Includes areas related to the new substation footprint.

³ "Unoccupied": is a lek that has been counted annually and has had zero birds for 8 or more consecutive years (ODFW 2011).

**ATTACHMENT P2-3
GREATER SAGE-GROUSE HABITAT MITIGATION PLAN**

Greater Sage-Grouse Habitat Mitigation Plan

Boardman to Hemingway Transmission Line Project



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ACRONYMS AND ABBREVIATIONS

Action Plan	Oregon Sage-Grouse Action Plan
HMP	Habitat Mitigation Plan
HQT	habitat quantification tool
IPC	Idaho Power Company
Mitigation Manual	Greater Sage-Grouse Mitigation Manual
OAR	Oregon Administrative Rule
Project	Boardman to Hemingway Transmission Line Project
SSP	site-specific plan

1.0 INTRODUCTION

Oregon's Greater Sage Grouse Conservation Strategy—Chapter 635, Division 140 of the Oregon Administrative Rules (OAR)—requires compensatory mitigation to address unavoidable direct and indirect impacts to greater sage-grouse (*Centrocercus urophasianus*, hereafter sage-grouse) habitat. This Greater Sage-Grouse Habitat Mitigation Plan (HMP) describes how unavoidable impacts to sage-grouse habitat from the Boardman to Hemingway Transmission Line Project (Project) will be mitigated.

Prior to commencement of construction, Idaho Power Company (IPC) will secure the legal authority to conduct the required mitigation actions at compensatory mitigation sites with sufficient credits to offset the impacts of the Project. IPC will evaluate the types and functionality of the habitat at each site through on-the-ground surveying and will develop a comprehensive management plan for each site. In the meantime and in order to show there are mitigation site opportunities sufficient to meet the needs of the Project, IPC identifies potential mitigation sites currently on the market and provides a desktop-level assessment of the credits available at each site (see Appendix A).

2.0 APPLICABLE RULES AND EXECUTIVE ORDER PROVISIONS

2.1 General Standards for Siting Facilities

The Fish and Wildlife Habitat Standard at OAR 345-022-0060 states:

For the Council to issue a site certificate, it must find that the design, construction, and operation of the facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025 in effect as of September 1, 2000.

2.2 Greater Sage-Grouse Conservation Strategy for Oregon

Policy 2 and 3 of Oregon's Greater Sage-Grouse Conservation Strategy at OAR 635-140-0025(2) and (3), respectively, provide:

Policy 2. The Department may approve or recommend approval of mitigation for impacts from a large-scale development permitted by a county; or development actions permitted by a state or federal government entity on public land, within sage-grouse habitat only after the following mitigation hierarchy has been addressed by the permitting entity, with the intent of directing the development action away from the most productive habitats and into the least productive areas for sage-grouse (in order of importance: core area, low density, general, and non-habitat).

...

(e) Compensatory Mitigation. If avoidance and minimization efforts have been exhausted, compensatory mitigation to address both direct and indirect impacts will be required as part of the permitting process for remaining adverse impacts from the proposed development action to sage-grouse habitat, consistent with the mitigation standard in (3) Policy 3 below.

Policy 3. The standard for compensatory mitigation of direct and indirect habitat impacts in sage-grouse habitat (core[,] low density, and general areas) is to achieve net

1 conservation benefit for sage-grouse by replacing the lost functionality of the impacted
 2 habitat to a level capable of supporting greater sage-grouse numbers than that of the
 3 habitat which was impacted. Where mitigation actions occur in existing sage-grouse
 4 habitat, the increased functionality must be in addition to any existing functionality of the
 5 habitat to support sage-grouse. When developing and implementing mitigation measures
 6 for impacts to core, low density, and general sage-grouse habitats, the project
 7 developers shall:

8 (a) Work directly with the Department and permitting entity to obtain approval to
 9 implement a mitigation plan or measures, at the responsibility of the developer,
 10 for mitigating impacts consistent with the standard in OAR 635-140-0025(3) or,

11 (b) Work with an entity approved by the Department to implement, at the
 12 responsibility of the developer, "in-lieu fee" projects consistent with the standard
 13 in OAR 635-140-0025(3).

14 (c) Any mitigation undertaken pursuant to (a) or (b) above must have in place
 15 measures to ensure the results of the mitigation activity will persist (barring
 16 unintended natural events such as fire) for the life of the original impact. The
 17 Department will engage in mitigation discussions related to development actions
 18 in a manner consistent with applicable timelines of permitting entities.

19 2.3 Habitat Classification

20 Oregon's Greater Sage-Grouse Conservation Strategy addresses impacts to the following
 21 habitat types: areas of high population richness; core area habitat; low density habitat; and
 22 general habitat. Table 1 sets forth the definition for each of those habitat types:

23 **Table 1. Sage-Grouse Habitat Types**

Category Type	Definition Provided in OAR 635-140-0002
Areas of High Population Richness	[M]apped areas of breeding and nesting habitat within core habitat that support the 75th percentile of breeding bird densities (i.e., the top 25%).
Core Area	[M]apped sagebrush types or other habitats that support greater sage-grouse annual life history requirements that are encompassed by areas: a) of very high, high, and moderate lek density strata; b) where low lek density strata overlap local connectivity corridors; or c) where winter habitat use polygons overlap with either low lek density strata, connectivity corridors, or occupied habitat." Core area maps are maintained by the Department.
Low Density	[M]apped sagebrush types or other habitats that support greater sage-grouse that are encompassed by areas where: a) low lek density strata overlapped with seasonal connectivity corridors; b) local corridors occur outside of all lek density strata; c) low lek density strata occur outside of connectivity corridors; or d) seasonal connectivity corridors occur outside of all lek density strata." Low density area maps are maintained by the Department.
General Habitat	[O]ccupied (seasonal or year-round) sage-grouse habitat outside core and low density habitats.

24 2.4 Executive Order No. 15-18 and the Oregon Sage-Grouse Action Plan

25 On September 16, 2015, Oregon Governor Kate Brown signed Executive Order No. 15-18,
 26 adopting the Oregon Sage-Grouse Action Plan (Action Plan; Sage-Grouse Conservation
 27 Partnership 2015) as the plan for the conservation of sage-grouse in Oregon. The Plan included

1 as Appendix 6 the Greater Sage-Grouse Mitigation Manual (Mitigation Manual),¹ which provides
2 guidelines and processes for compensating for development impacts to sage-grouse habitat in
3 Oregon.

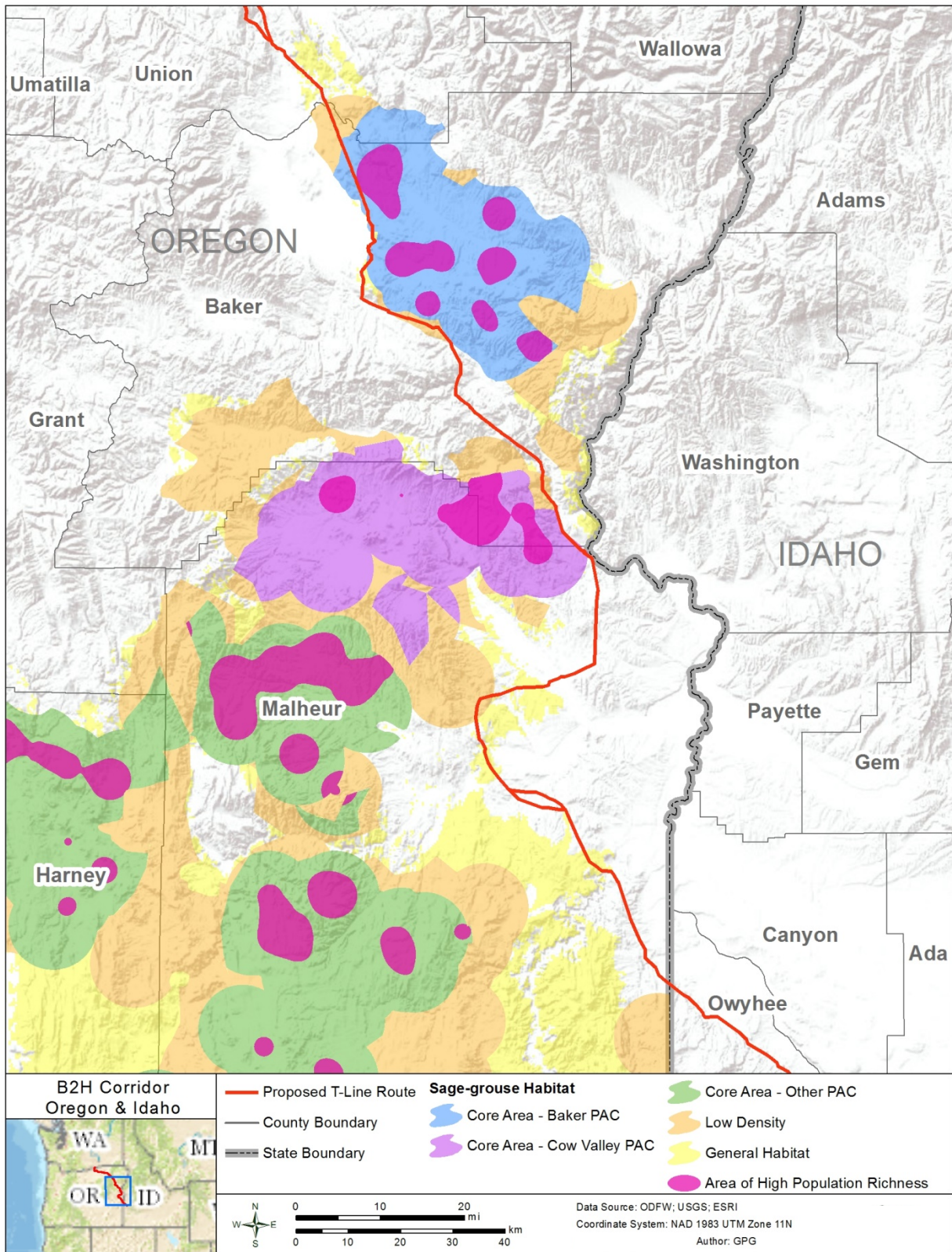
4 **3.0 ANALYSIS**

5 Proponents of large-scale development projects in sage-grouse habitat must first show that
6 impacts to sage-grouse habitat have been avoided and minimized in accordance with Oregon's
7 Greater Sage Grouse Conservation Strategy (see Mitigation Manual, p. 32). In furtherance of
8 that objective, project proponents must provide ODFW with a mitigation plan that outlines
9 avoidance and minimization measures, as well as an estimate of mitigation credits needed to
10 provide a net benefit to sage-grouse and its habitat in accordance with OAR 635-140-0015 and
11 -0025 (see Mitigation Manual, p.31).

12 **3.1 Sage-Grouse Habitat Map**

13 Figure 1 provides an overview of the sage-grouse habitat near the Project in Oregon.
14 Exhibit P2, Attachment P2-1 contains a map-book that shows the same at a finer scale.

¹ To the extent the content of the Mitigation Manual is used or duplicated in this HMP, the following acknowledgement applies: "This content was created in part through the adaptation of procedures and publications developed by Environmental Incentives, LLC, Environmental Defense Fund, and Willamette Partnership, but is not the responsibility or property of any of these entities" (see Mitigation Manual, p. 1) (open content license).



1

2 **Figure 1. Sage-Grouse Habitat Near the Project in Oregon**

1 **3.2 Avoidance**

2 Under OAR 635-415-0025(7), the Project is exempt from the avoidance provisions of Oregon's
3 Greater Sage Grouse Conservation Strategy. Even so, as discussed in Section 3.7.5.1 of
4 Exhibit P2, the history of the Project demonstrates that IPC—in response to ODFW and BLM
5 input—has developed routes and changed the Project numerous times to avoid and minimize
6 impacts to sage-grouse habitat. Although the Proposed Route will impact some sage-grouse
7 habitat, there is no reasonable alternative location that would avoid the habitat.

8 **3.3 Minimization**

9 OAR 635-415-0025(7) exempts the Project from each of the minimization provisions of
10 Oregon's Greater Sage Grouse Conservation Strategy, except for OAR 635-140-0025(2)(d)(B).
11 OAR 635-140-0025(2)(d)(B) provides that, where general habitat will be impacted, the project
12 developer will consult with ODFW, and ODFW will provide recommendations on how best to
13 avoid or minimize impacts on important habitat within general habitat areas. Here, the Project
14 will impact general habitat. As discussed in Section 3.7.5.1 of Exhibit P2, IPC has proposed
15 certain site certificate conditions intended to minimize impacts to sage-grouse and their habitat
16 including certain seasonal and spatial restrictions.

17 **3.4 Compensatory Mitigation**

18 Despite IPC's efforts to avoid and minimize impacts to sage-grouse habitat, certain impacts will
19 be unavoidable. Therefore, compensatory mitigation will be required for large-scale
20 development projects proposed in core and low density habitat. Some uses in other sage-
21 grouse habitat—i.e., general habitat—may also require compensatory mitigation depending on
22 the proximity to sage-grouse lek sites and/or the permitting agency involved (see Mitigation
23 Manual, p.33).

24 **3.4.1 Quantifying Project Impacts**

25 Determining the amount of compensatory mitigation needed to ensure a net conservation
26 benefit for a proposed development project requires a method for measuring the impacts of the
27 debiting project and the benefit of the crediting project (see Mitigation Manual, p.21). Oregon
28 currently is developing a habitat quantification tool (HQT) to quantify debits and credits. The
29 Action Plan provides that Oregon's tool will measure both the quantity of habitat affected by an
30 action and the quality of the affected habitat in terms of functional value to sage-grouse (see
31 Mitigation Manual, p. 21). Oregon's tool will quantify impacts and benefits in terms of functional
32 habitat acres by measuring habitat indicators that reflect the quantity and functional quality of
33 habitat at a particular site. Individual indicators are combined into themes, which will then be
34 summarized into a single functional acre score (see Mitigation Manual, p. 21). Further, Oregon's
35 tool is being designed to consider the habitat indicators at four spatial orders: (1) range-wide
36 distribution scale; (2) population/sub-population scale; (3) local scale; and (4) site scale (see
37 Mitigation Manual, pp. 21-22).

38 At this time, the HQT continues to be under development. Even so, ODFW has indicated the
39 HQT will be finalized prior to commencement of construction on the Project and ODFW intends
40 that IPC utilize the HQT to calculate the Project's impacts to sage-grouse habitat. Accordingly,
41 in this application, IPC has not quantified indirect impacts or the amount of compensatory
42 mitigation required for the Project related to sage-grouse. Rather, the amount of sage-grouse
43 habitat compensatory mitigation required for the Project will be determined by the HQT prior to
44 commencement of construction.

3.4.2 Purchasing Credits to Offset Project Impacts

A large scale development project proponent impacting sage-grouse habitat in Oregon must offset such impacts by either paying an in-lieu fee through the State's in-lieu fee sage-grouse mitigation program or conducting its own compensatory mitigation projects (see OAR 635-140-0025(3)(a), (b)). Here, IPC may offset the impacts of the Project by paying an in-lieu fee through the State's program, if available. In the alternative, IPC will implement a mitigation project or projects sufficient to offset the Project's impacts, as described in more detail below in Section 3.4.3.

3.4.3 Creating Credits by Implementing Mitigation Projects

If IPC chooses to acquire credits through a mitigation project or projects and not through the in-lieu fee program, IPC will secure the necessary mitigation sites prior to commencing construction on the Project. In this section, IPC describes the mitigation site selection process, the mitigation credit score assessment approach, the standards for each mitigation project, and the documentation and verification processes for the mitigation projects. In the HMP appendices, IPC provides a desktop analysis of certain potential mitigation sites that currently are on the market, demonstrating there are mitigation site opportunities sufficient to meet the needs of the Project.

3.4.3.1 Mitigation Project Eligibility Requirements

As set forth in the Mitigation Manual, to help ensure that crediting projects will provide a net conservation benefit to sage-grouse habitat and support the long-term function of sagebrush ecosystems, each mitigation site must meet the eligibility criteria in Table 2 below (see Mitigation Manual, p.17).

Table 2. Eligibility Requirements for Crediting Projects

Eligibility Requirement	Criteria
Conservation actions are additional	<ul style="list-style-type: none"> Exceeds pre-existing legal obligations Avoidance or minimization of existing impacts Use of public conservation funds prohibited from generating credits
Project benefits are durable	<ul style="list-style-type: none"> No imminent threat Benefits expected to meet or exceed duration of impact Legal protection of site Plan and funding for long-term stewardship
Appropriate site selection and conservation actions	<ul style="list-style-type: none"> Projects integrated with state-wide strategic conservation plan All projects include enhancement actions
Conservation actions are additional	<ul style="list-style-type: none"> Exceeds pre-existing legal obligations Avoidance or minimization of existing impacts Use of public conservation funds prohibited from generating credits

1 3.4.3.2 Mitigation Project Documentation

2 **Site-Specific Plan**

3 For each mitigation project, IPC will produce a site-specific plan (SSP), which identifies the
4 extent, type, and description of all proposed conservation actions, including the following:

- 5 • The type and location of ecological states present on the project site;
- 6 • Current and future threats to sage-grouse habitat function for the site; and
- 7 • Specific conservation practices that will be implemented on the site to maintain or
8 improve habitat for the species.

9 **Stewardship Plan, Legal Protections, and Financial Assurances**

10 Crediting projects must be durable—that is, the period of time that mitigation is effective must be
11 equal or greater in duration to the impacts being offset (see Mitigation Manual, p.18).
12 Demonstrating project durability requires that legal protections be put in place to ensure the
13 mitigation project benefits are not disturbed for the life of the credits. Legal protection may be
14 demonstrated through term or permanent conservation easements or through other tools
15 ensuring the protections will last for the duration of the offset impacts (see Mitigation Manual,
16 p.18).

17 Financial assurances must be in place to ensure appropriate management will occur throughout
18 the life of the credits (see Mitigation Manual, p.18). Funding for site management may occur
19 through various mechanisms, provided they ensure management will persist throughout the life
20 of the mitigation project (see Mitigation Manual, pp.18-19).

21 Each proposed crediting project will include a stewardship plan that identifies a long-term
22 steward, stewardship goals and activities, the amount and form of financial assurances
23 necessary to maintain the site, and documentation of the time needed to implement the full
24 stewardship plan.

25 3.4.3.3 Mitigation Project Standards

26 **Service Areas**

27 Mitigation projects must occur on sage-grouse habitat or potential sage-grouse habitat,² and
28 must occur within the same Western Association of Fish and Wildlife Agencies Management
29 Zone impacted by the Project (see Mitigation Manual, pp.34-35). When appropriate and
30 sufficient crediting opportunities are available, IPC will also consider the following criteria in
31 selecting mitigation projects:

- 32 • Impacts to core area habitat should be offset by crediting projects within the same PAC
33 area;
- 34 • Impacts to low-density habitat should be offset by crediting projects within the most
35 proximate PAC;

² Potential habitat is defined as “land areas within the current range of the species that have the potential, based on environmental conditions such as mean annual precipitation, topographic position, etc., to support sagebrush-dominated plant communities or other seasonal natural habitats such as wet meadows. Potential habitat may not currently support sage-grouse at any time during the year” (Mitigation Manual, p.8, Box 1.2).

- 1 • Impacts to general habitat and core and low-density impacts for which PAC specific
2 credits are not available, should be offset by crediting projects within the same
3 population area (see Mitigation Manual, p.35).

4 **Net Conservation Benefit**

5 Each crediting project will provide a net conservation benefit for sage-grouse and its habitat by
6 replacing the lost functionality of the impacted habitat to a level capable of supporting greater
7 sage-grouse numbers than that of the habitat which was impacted (see OAR 635-140-0025(3)).
8 To determine the amount of compensatory mitigation needed to meet that standard, IPC will use
9 its HQT to determine the number and duration of credits needed to meet the net conservation
10 benefit standard as part of a draft mitigation plan (see Mitigation Manual, p.33). The same
11 quantification tool used to calculate the debit score for the Project (see Section 3.4.3.4) will be
12 used to calculate the benefits of the crediting mitigation projects (see Mitigation Manual, p.21)
13 (providing that the relevant quantification tool should measure impacts of both the debiting and
14 crediting projects). Implementation of the quantification tool for calculating credits is discussed
15 in more detail in Section 3.4.3.4 below.

16 **Project Additionality**

17 “Additionality” refers to the requirement that credit-generating benefits from a project must be in
18 addition to what would have happened without participation as a mitigation project and what is
19 required by existing law and legal commitments (see Mitigation Manual, p.17). To meet the
20 mitigation program goal of providing a net benefit for sage-grouse and its habitat, credit-
21 producing projects and conservation actions must be in addition to all existing affirmative
22 obligations (including land use restrictions) relevant to the project site and comply with all
23 applicable federal, state, and local laws (see Mitigation Manual, pp.17-18). Only actions in
24 excess of existing affirmative legal obligations will be creditable (see Mitigation Manual, p.18).

25 **Conservation Actions**

26 Credits may be generated by the following types of conservation actions:

- 27 • **Enhancement:** Measures that increase the quantity and/or quality of sage-grouse
28 habitat and are aimed at transitioning an area of sage-grouse habitat from a less to a
29 more desirable ecological state. Appropriate enhancement measures may vary among
30 sites, depending on the initial and desired future ecological states of a site.
- 31 • **Avoided loss:** Measures that prevent undesirable state changes in areas that are at a
32 demonstrated risk of degradation from threats such as development, wildfire, and
33 invasive species. Depending on the current and anticipated future threats at a given site,
34 appropriate avoided loss activities may include legal protection, fire prevention, and
35 management of invasive species.

36 Specific conservation actions will be developed upon identification of a mitigation site and formal
37 evaluation of site conditions and possible habitat improvement measures. Table 3 below
38 includes a preliminary list of potential enhancement measures that IPC might apply to its
39 mitigation projects. Table 4 includes a preliminary list of avoided loss measures.

1 **Table 3. Enhancement Measures**

STM	Initial State	Desired state outcome	Practices to Implement	Uncertainty	Risk	Likelihood of state change	Time to state change	Duration of benefit/ treatment	Avoided loss (sage- grouse habitat)	Measure of Success	Cost	Comments
Low elevation sagebrush rangeland	B	A	Time/ Sagebrush transplanting	M	Wildfire	M	Long	Long	N/A	Increase shrub cover	\$\$	Poorest success of three types of sites
	C	A	Shrub reduction/Control annuals/Revegetate	H	Moving to state D	M	Moderate	Long	H	Increase perennial bunchgrass density	\$	High uncertainty, difficult to protect from fire
	C	A	Improve grazing management of desired plants	M	Wildfire	M	Moderate-Long	Long	H	Increase perennial bunchgrass density	\$	Reducing grazing pressure may mean more fuel
	C	B	Provide fire-fighting or fire-detection equipment	M	Wildlife	M	Moderate-Long	Long	H	Increase shrub cover	S	Depends on successful use of the equipment
	D	B	Control annuals/Revegetate with natives	L		L	Moderate	Long	N/A, D is non-habitat	Increase perennial bunchgrass density	\$\$\$	High uncertainty, native seeding success is reliably poor, may include prescribed fire for site prep; drill seeding improves probability
	D	B	Control annuals/Revegetate using introduced species such as Crested Wheatgrass	L	Wildfire	M	Moderate	Long	N/A, D is non-habitat	Increase perennial bunchgrass density	\$\$	Crested wheatgrass seeding success is more reliable, may include prescribed fire for site prep
	B	A	Protect from high severity wildfire (fuel breaks)	H	Wildfire	M	Long	Long	M	Increase shrub cover	\$	High uncertainty, difficult to protect from fire
Mid elevation Sagebrush Rangeland	B	A	Time, Sagebrush planting	M		H	Moderate	Long	N/A	Increase shrub cover	\$\$	Intermediate success of sagebrush seeding
	B	A	Time, Protect from wildfire	L	Conversion to C	H	Moderate	Long	M	Increase shrub cover	\$	
	C	A	Cutting/ Mechanical juniper removal	L		H	Immediate	Moderate	N/A, non- habitat as C	Decrease Juniper density/cover	\$\$	Sagebrush usually responds quickly to release from juniper competition
	C	B	Provide fire-fighting or fire-detection equipment	M	Wildlife	M	Moderate-Long	Long	H	Increase shrub cover	S	Depends on successful use of the equipment
	D	B	Cutting/Mechanical juniper removal/ Revegetate understory	M	Conversion to E	M	Moderate	Moderate	N/A, non- habitat as D	Decrease Juniper density/cover & Increase perennial bunchgrass cover	\$\$\$	Consider partial juniper removal initially to gauge understory response
	E or D	B	Cutting/ Mechanical juniper removal/ Control annuals/ Revegetate with native perennial species	H	No perennial grass recovery	L-M	Moderate	Moderate	N/A, non- habitat as D	Increase perennial bunchgrass density	\$\$\$	Lengthy process with multiple steps

STM	Initial State	Desired state outcome	Practices to Implement	Uncertainty	Risk	Likelihood of state change	Time to state change	Duration of benefit/ treatment	Avoided loss (sage- grouse habitat)	Measure of Success	Cost	Comments
Mid elevation Sagebrush Rangeland (continued)	E or D	B	Cutting/Mechanical juniper removal/ Control annuals/ Revegetate with introduced perennial species such as crested wheatgrass	L	No perennial grass recovery	M-H	Moderate	Moderate	N/A , non- habitat as D	Increase perennial bunchgrass density	\$\$	Fire risk reduction strategy
High elevation Sagebrush Rangeland	B	A	Sagebrush seeding	L		M	Moderate	Long	N/A	Increase shrub cover	\$\$	Success much higher here than in mid and especially low elevation sites
	B	A	Time/ Protect from fire	L	Increase in Juniper cover	H	Moderate - long	Long	N/A	Increase shrub cover	\$	Success depends on seed bank and proximity to seed sources
	C	A	Prescribed fire with mosaic effects	L	Decrease shrub cover	H	Immediate	Moderate	avoided loss (sage- grouse habitat)	Decreased juniper, increase mosaic habitats	\$\$	Mosaic burn maintains seed source for sagebrush in unburned islands
	C	B	Prescribed fire with homogenous effects	L	Decrease shrub cover	H	Immediate	Long	N/A, non- habitat as C	Decreased juniper	\$\$	
	C	A	Cutting/ Mechanical juniper removal	L		H	Immediate	Short - moderate	N/A, non- habitat as C	Decreased juniper	\$\$	Moderate cost, but if understory is intact this is a low risk treatment
	D	B	Prescribed fire	M		M	Immediate	Long	N/A, non- habitat as D	Decreased juniper	\$\$	Depends on percent juniper kill and burn coverage
	D	B	Cutting/ Mechanical juniper removal/ Understory restoration	L		H	Immediate	Short- moderate	N/A, non- habitat as D	Decreased juniper	\$\$\$	
	E	B	Cutting/ Mechanical juniper removal/ Understory restoration	M		M	Moderate - long	Short- moderate	N/A, non- habitat as E	Decreased juniper	\$\$\$	Depends on pretreat BG density

1 **Table 4. Avoided Loss Measures**

Practices to Maintain Desired Plant Community - State A						
Practices List	Uncertainty	Risk	Avoided Loss	Measure Success	Cost	Comments
Limit intense and/ or frequent disturbances and/ or stress to desired plants, this can include prescribed grazing practices; low intensity fire; limited equipment use	L	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	Disturbances generally favor undesirable community changes any practice to minimize the intensity or frequency of disturbances will favor desired plants
Create prevention program: Map and delineate priority zones; Identify corridors of spread; action plan for early detection & rapid response and for eradicating infestations Create fuel break if weed infestations are adjacent to desired community	M	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$ to \$\$\$	Comprehensive prevention program ideas are available in the user guide: Establishing a Weed Prevention Area
Increase seed production and dispersal of desired plants	M	L		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	
Limit resource availability by keeping nutrients conserved in desired plants	M	M		Maintenance of desired vegetation, shrub cover, perennial bunchgrass density &/ or cover	\$	
Maintain or increase perennial bunchgrass to reduce invasion potential	M	L		Maintenance of desired	\$\$	

1 3.4.3.4 Calculating Credits

2 Quantifying credits and debits in a similar manner provides an “apples to apples” comparison of
3 the impacts from the Project and mitigation area by accounting for existing disturbances and
4 habitat suitability. Thus, if the enhanced credits are greater than the number of debits, the
5 mitigation site is considered to achieve net conservation benefit for sage-grouse by replacing
6 the lost functionality of the impacted habitat to a level capable of supporting greater sage-
7 grouse numbers than that of the habitat which was impacted.

8 After Oregon’s habitat quantification tool is finalized, IPC transmit spatial data regarding
9 potential mitigation sites to ODFW so conservation action credits can be calculated by ODFW.

10 **Access Road Control**

11 One conservation action to improve habitat quality for sage-grouse is to eliminate or limit traffic
12 activity on roads in sage-grouse habitat. For those mitigation sites where IPC proposes to gain
13 credits for addressing impacts from existing roads by eliminating or limiting access to those
14 roads, IPC will quantify the benefits of the conservation action by comparing the pre-
15 conservation action impacts with the post-conservation action impacts as those impacts are
16 defined in the Mitigation Manual.

17 **Non-Access-Road-Control Conservation Actions**

18 As described in the Mitigation Manual, other conservation actions could be implemented to
19 improve sage-grouse habitat quality including, but not limited to, juniper removal, fence marking,
20 invasive plant species removal. Specific conservation actions will be identified based on the
21 mitigation site selected. For those mitigation sites where IPC proposes conservation actions
22 other than access road control, IPC will determine the number of functional habitat acre credits
23 earned by the Project by running the habitat quantification analysis twice. It will be run first on
24 the current condition of the mitigation site and then again on the future conditions of the site
25 based on the improvements resulting from the proposed conservation actions (see Mitigation
26 Manual, p.34). Credits are quantified based on the estimated post-conservation action number
27 of functional habitat acres within the assessment area, subtracted from the current number of
28 functional habitat acres within the area.

29 3.4.3.5 Verification

30 Monitoring conducted at reclamation sites related to temporarily disturbed areas, and the
31 associated annual reports to the applicable agencies, are discussed in IPC’s draft Reclamation
32 and Revegetation Plan (Exhibit P1, Attachment P1-3). Monitoring conducted as part of the
33 “Wildlife Injury and Mortality Reporting System” is discussed in IPC’s Species Conservation
34 Plan (IPC 2013). The following discussion addresses monitoring related to mitigation sites.

35 **Performance Measures**

36 The criteria used to measure success will depend on the extent of impacts and the final
37 mitigation strategy (e.g., success criteria could be different if mitigation is conducted through
38 payments to a conservation bank as opposed to permittee-responsible mitigation sites). The
39 criteria used to measure mitigation success will be site-specific, will depend on the goals and
40 objectives of the mitigation site, and will need to be developed for each individual mitigation site
41 prior to the onset of mitigation efforts.

1 **Reporting**

2 IPC will document the progress of mitigation efforts to applicable federal and state-management
3 agencies in a progress report that will be provided following the periodic monitoring surveys.
4 These reports will also contain recommendations from IPC regarding any additional remedial
5 actions that may be necessary. It is expected that the applicable federal and state management
6 agencies will provide comments and counter suggestions, or approval of IPC's suggestions if
7 remedial efforts are required (i.e., corrective measures if revegetation or mitigation efforts were
8 not successful). Separate monitoring reports may be prepared for each individual mitigation site.
9 Reports will contain information regarding the mitigation actions taken during the reporting
10 period, the success of these actions (based on predefined success criteria established for that
11 mitigation site), and a description of the methods used to monitor the mitigation site.

12 **4.0 DRAFT MITIGATION SITE ASSESSEMENTS**

13 Prior to commencement of construction, IPC will secure the legal authority to conduct the
14 required mitigation actions at compensatory mitigation sites with sufficient credits to offset the
15 impacts of the Project. In order to show there are mitigation site opportunities sufficient to meet
16 the needs of the Project and to demonstrate how IPC's debiting and crediting approach will be
17 implemented, in the HMP appendices, IPC identifies potential mitigation sites currently on the
18 market and provides a desktop-level assessment of the credits available at each site.

19 **5.0 REFERENCES**

20 IPC (Idaho Power Company). 2013. Draft Species Conservation Plan. Boardman to Hemingway
21 Transmission Line Project. February.

22 Sage-Grouse Conservation Partnership. 2015. The Oregon Sage-Grouse Action Plan.
23 Governor's Natural Resources Office. Salem, Oregon.
24 [http://oregonexplorer.info/content/oregon-sage-grouseaction-](http://oregonexplorer.info/content/oregon-sage-grouseaction-plan?topic=203&ptopic=179)
25 [plan?topic=203&ptopic=179](http://oregonexplorer.info/content/oregon-sage-grouseaction-plan?topic=203&ptopic=179). Print version PDF available at
26 [http://oe.oregonexplorer.info/ExternalContent/SageCon/OregonSageGrouseActionPlan-](http://oe.oregonexplorer.info/ExternalContent/SageCon/OregonSageGrouseActionPlan-Print.pdf)
27 [Print.pdf](http://oe.oregonexplorer.info/ExternalContent/SageCon/OregonSageGrouseActionPlan-Print.pdf)

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**APPENDIX A
HABITAT MITIGATION SITES**

Boardman to Hemingway Transmission Line Project
Desktop Habitat Mitigation Site Assessment Worksheet

Parcel Name: Alder Creek
Landowner: _____

Date of Assessment: 9/11/2014
Parcel Elevation (ft): 3,700 – 4,450

Parcel Size in Acres: 3,081

Within Mitigation Service Area?: Yes

Location Description

(County, miles and direction from known location, TRS, UTM, other):

Baker County, approximately 20 miles northwest of Brogan, 20 miles southwest of Durkee.
 T13S R40E Sections 14, 15, 16, 21, 22, 23, 26, 27, 28 (**Figure 1**)

Vegetation Cover Classes (GAP ¹ , Figure 2)	HMP Habitat Category ² and Type	HMP General Vegetation Type	Acres	% of Parcel	Wildlife Habitat ³
		Category 1		0	0
	Category 2		0	0	-
	Shrub-Steppe with Big Sage	Shrub/Grass	1,452.3	49.3	RMEWR
	Shrub-Steppe with Big Sage	Shrub/Grass	294.1	10.0	RMEWR, MDWR
	Introduced Upland Vegetation	Shrub/Grass	258.1	8.8	RMEWR
	Introduced Upland Vegetation	Shrub/Grass	233.7	7.9	RMEWR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	213.7	7.3	RMEWR
	Shrub-Steppe without Big Sage	Shrub/Grass	171.6	5.8	RMEWR, MDWR
	Native Grasslands	Shrub/Grass	41.2	1.4	RMEWR
	Native Grasslands	Shrub/Grass	27.0	0.9	RMEWR, MDWR
	Bare Ground Cliffs Talus	Bare Ground	5.6	0.2	RMEWR
	Bare Ground Cliffs Talus	Bare Ground	1.3	0.0	RMEWR, MDWR
	Emergent Wetland	Wetland	3.4	0.1	RMEWR
	Emergent Wetland	Wetland	13.5	0.5	RMEWR, MDWR
	Desert Shrub	Shrub/Grass	0.4	0.0	RMEWR
	Desert Shrub	Shrub/Grass	12.2	0.4	RMEWR, MDWR
	Forested Wetland	Wetland	0.2	0.0	RMEWR
	Forested Wetland	Wetland	0.7	0.0	RMEWR, MDWR
	Western Juniper	Forest/Woodland	13.8	0.5	RMEWR, MDWR
	Ponderosa Pine	Forest/Woodland	4.4	0.2	RMEWR, MDWR
	Scrub-Shrub Wetland	Wetland	1.1	0.0	RMEWR, MDWR
	Rocky Mountain Aspen	Forest/Woodland	0.2	0.0	RMEWR, MDWR
	Mixed Grand Fir / Douglas Fir	Forest/Woodland	0.2	0.0	RMEWR, MDWR
	Category 3		0	0	-
	Category 4		0	0	-
	Category 5		0	0	-
	Category 6		198.3	6.7	
	Agriculture	Agriculture/ Developed	194.5	6.6	RMEWR
	Developed	Agriculture/ Developed	3.8	0.1	RMEWR
	Total⁴	NA	2,947.1	100	-

¹ USGS Gap Analysis Project (GAP) GIS data for ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in Exhibit P1, Attachment P1-1 Habitat Categorization Matrix.
² Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.
³ RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.
⁴ Total acres of habitat type may not match actual parcel size due to resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

<p>Hydrologic Features Present (SteamNet, NWI, NHD)</p>	<p>One perennial (Alder Creek) and four intermittent streams (NHD). Some spring and emergent wetlands not associated with the NHD streams are identified in the NWI dataset.</p>
<p>Adjacent land ownership, use, and condition</p>	<p>Property is bordered by both BLM and private lands. Land use is mostly rangeland with some agricultural developments. A majority of the adjacent landscape is classified as intermountain basins big sagebrush-steppe by GAP.</p>
<p>Infrastructure Density within or Near the Parcel (Qualitative Description)</p>	<p>Per the real estate listing, the property contains dwellings, shop, multiple large hay sheds, center pivot irrigation, and a livestock processing facility. HWY 26 and an existing transmission line are 5 miles to the south; state route 245 is approximately 4 miles to the north. Otherwise, the landscape is open rangeland.</p>
<p>Soil type, soil temperature and moisture regime (NRCS 2014)</p>	<p>Detailed SSURGO data is not available for this portion of Malheur County. STATSGO2 identifies the property is within the Rucklick-Ruckles-Lookout mapunit. Ruckles soils are shallow. They have a surface layer of very dark grayish brown very stony clay loam and a subsoil of dark brown very stony clay. These soils are on south- and west-facing slopes of 2 to 70 percent. Rucklick soils are moderately deep. They have a surface layer of very dark grayish brown very cobbly silt loam and a subsoil of dark brown very cobbly and extremely cobbly clay. These soils are on all aspects of the terrain at a slope of 2 to 70 percent. Lookout soils are moderately deep to a duripan. They have a surface layer mainly of very dark grayish brown very cobbly silt loam and a subsoil of dark yellowish brown clay over a duripan. In some areas the surface layer is silt loam. These soils are on hilltops and benches with slopes of 2 to 12 percent.</p> <p>The soils in this unit are used mainly for livestock grazing. The unit also provides habitat for many kinds of wildlife. In the areas used for livestock grazing, the main limitations are the very cobbly or very stony surface layer and the slope of the Ruckles and Rucklick soils.</p> <p>The temperature regime is Mesic and the moisture regime is Aridic bordering on Xeric (Warm/Dry bordering on Moist). This area is identified as having low relative resilience and resistance to disturbances (drought, fire, invasive species).</p>
<p>NRCS. 2014. Sage Grouse Management Zones Soil Taxonomic Temperature and Moisture Regimes. GIS Dataset.</p>	
<p>Summary</p>	<p>The property is in sage-grouse core area within the Cow Valley PAC. According to Alternative D of the Oregon Sub-Region SAGR FEIS (Chapter 2, Figure 2-4), this property is located within or immediately adjacent to three proposed Sage-Grouse Strategic Areas: Climate Change Consideration Area – identified as higher elevation areas of high quality habitat likely to provide habitat over the long-term; Restoration Opportunity Area – within existing habitat where restoration would increase habitat quality and connectivity; and High-density Breeding Area – high quality habitat with a high density of active lek sites.</p> <p>The property is also completely within elk winter range and elk summer range and the northern 1/3 of the property is within mule deer winter range. Year-round springs, perennial stream (Alder Creek), and emergent wetlands increase the value of the property to wildlife in the arid landscape as well as provide potential for watershed improvement projects. GAP data indicates that introduced upland vegetation is present on site and could provide upland habitat restoration opportunities.</p> <p>Weed treatment and revegetation opportunities are available across the entire property but are abundant in areas currently in agricultural production and where livestock congregate. Opportunity areas generally coincide with habitat identified as Agriculture and/or Introduced Upland Vegetation by the GAP dataset (Figure 2). Western juniper woodlands are encroaching into sagebrush habitats on the parcel.</p>
<p>Pass/Fail Assessment?</p>	<p>Pass</p>

Boardman to Hemingway Transmission Line Project

Consideration of Property as a Potential Mitigation Site

Mitigation Function	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on both Category 1 and category 2 sage-grouse core area habitat and Category 2 elk and mule deer winter range within the shrub/grass general vegetation type. Areas where sage-grouse habitat and big game winter range overlap are typically shrub-steppe and native grassland types with a continuous or mosaic big sagebrush component.</p> <p>The mitigation site contains important habitat features with ample opportunities to provide durable ecological uplift through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse and big game (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
Mitigation Site Manager	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust
Mitigation Actions	<p>The following are mitigation actions that IPC may consider implementing at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods and be conducted as necessary to maintain desired habitat conditions throughout the life of the Project impacts. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> • <i>Juniper/Conifer Removal</i> – There are approximately 300-450 acres of shrub-steppe and introduced upland vegetation where juniper encroachment is occurring (Figure 3). The juniper stands appear to be Phase I consisting of early successional young trees at very low density. Opportunity for spot-treating single trees occurs throughout the property. • <i>Modification of Livestock Grazing</i> – this would benefit a majority of the mitigation site as grazing has reduced native plant cover and has likely been a contributor to dispersal of non-native/invasive plant species across the site. In addition, livestock grazing may be incompatible with the short-term success of some of the mitigation actions identified, such as seeding of native plant species. Long-term maintenance of the mitigation site may consider domestic livestock grazing as a management tool. • <i>Fence Removal/Marking/Upgrade</i> – the mitigation site has approximately 60,000 feet of cross fencing (Figure 3) that can be removed. Fence removal would reduce the potential for wildlife injuries/mortalities from collisions. Fencing acts as a source of weed establishment through accumulation of windblown weeds. Fences provide perching opportunity for raptors and corvids. Marking of perimeter fencing in areas of concern would allow sage-grouse and other wildlife to more effectively visualize the fence and avoid collisions. Fences maintained on the mitigation site can be upgraded to a more wildlife friendly design that reduces the likelihood of significant injury during crossing events. • <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Opportunities likely exist in areas identified for native seeding (Figure 3), along fence lines, within livestock handling facilities, near the residence, and other outbuildings/haysheds etc.

Mitigation Actions (cont.)

- *Native seeding/revegetation* – opportunity exists to seed native plant species in areas currently in agriculture and lowland areas adjacent to drainages where cattle have congregated. These areas cover approximately 300 acres of the mitigation site (**Figure 3**). Other seeding opportunities are available throughout the mitigation site.
- *Wetland/Spring/Riparian Improvement* – drainages and riparian/wetland areas on the mitigation site are currently lacking native vegetation components. Opportunities exist to modify/improve water resources (channel modification, erosion control, vegetation treatment/plantings) on the mitigation site to reflect a more natural state and to provide water to mitigation action areas as needed to ensure success. There is approximately 3-8 miles of riparian corridor within the mitigation site and several acres of wetlands.

Monitoring

A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

Success Criteria

Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of weed reduction.
- Natural recruitment of sagebrush into areas currently in Agriculture or Introduced Upland Vegetation that were seeded to native plant species.
- Successful juniper removal and continued control of encroachment onto the mitigation site for the life of the project.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

Financial Outline

This financial outline provides estimated figures and data for informational purposes only. These estimates are meant to provide an overview of the potential and commercially reasonable costs of acquiring and implementing mitigation on this mitigation site. The financial outline does not guarantee the final sales price and costs for the acquisition, and the price offering is subject to prior sale, price change, correction, amendment or withdrawal.

- Initial purchase of the mitigation site: \$2,750,000
- Juniper removal: \$80 - \$200 per acre
- Fence removal: \$1.88 per foot
- Fence marking: \$0.11 per foot of fence (\$581 per mile)
- Weed treatment: \$20 - \$200 per acre
- Native Seeding:
 - Site preparation (mowing/discing) \$500 per acre
 - Broadcast/Drill seed: \$100 - \$250 per acre
- Hydroseeding: \$792 per acre

Financial Outline (cont.)

- Wetland/Spring/Riparian Improvement
 - Complex Restoration: \$2,400 per acre
 - Riparian Herbaceous Cover
 - Broadcast Seeding: \$687 per acre
 - Pollinator Cover: \$1,303 per acre
 - Plug Planting: \$13,730 per acre
 - Combo Seeding and Plug Planting: \$6,947 per acre
 - Riparian Forest Buffer
 - Hand Plant, bare root: \$768 per acre
 - Cuttings, small to medium: \$867 per acre
 - Seeding: \$106 per acre

Estimated Budget for the Alder Creek Mitigation Site

Action	Cost per Unit	Units	Years	Expense
One-time Costs				
Acquisition of mitigation site	\$2,750,000	1	-	\$2,750,000
Juniper Removal	\$100	450	-	\$45,000
Grazing Modification	-	-	-	-
Removal of cross fencing	\$2	60,000	-	\$120,000
Marking of perimeter fence	-	-	-	-
Weed Treatment	\$20-\$200	75	-	\$15,000
Native Seeding	\$750	300	-	\$225,000
50-year Operation and Management Costs				
O&M ¹	\$30	3,081	50	\$4,621,500
Total		-		\$7,776,500 (\$2,524/acre) ²

¹ This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

² Cost per acre here includes cost of acquisition and initial mitigation actions and long-term O&M for 50 years.

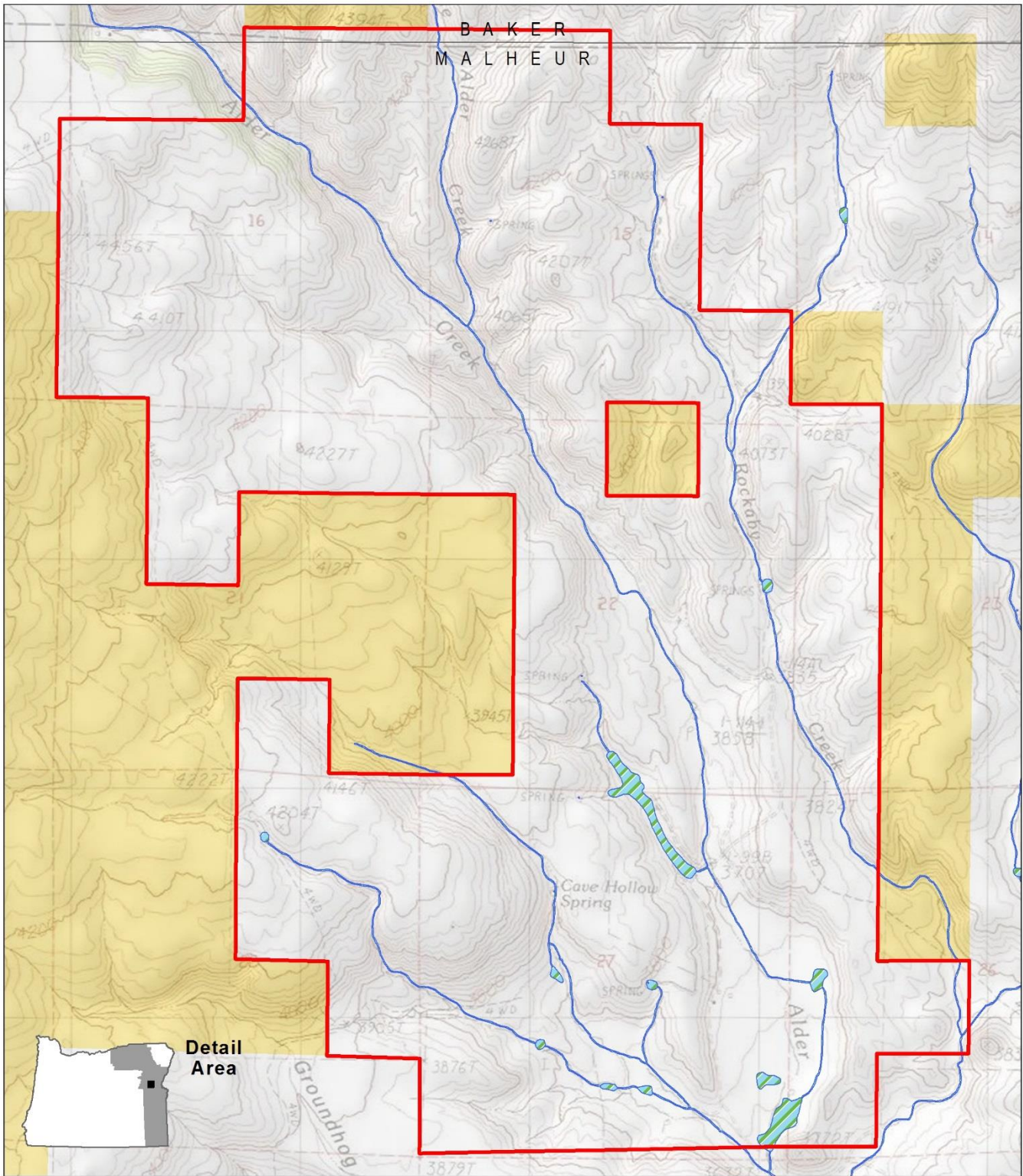
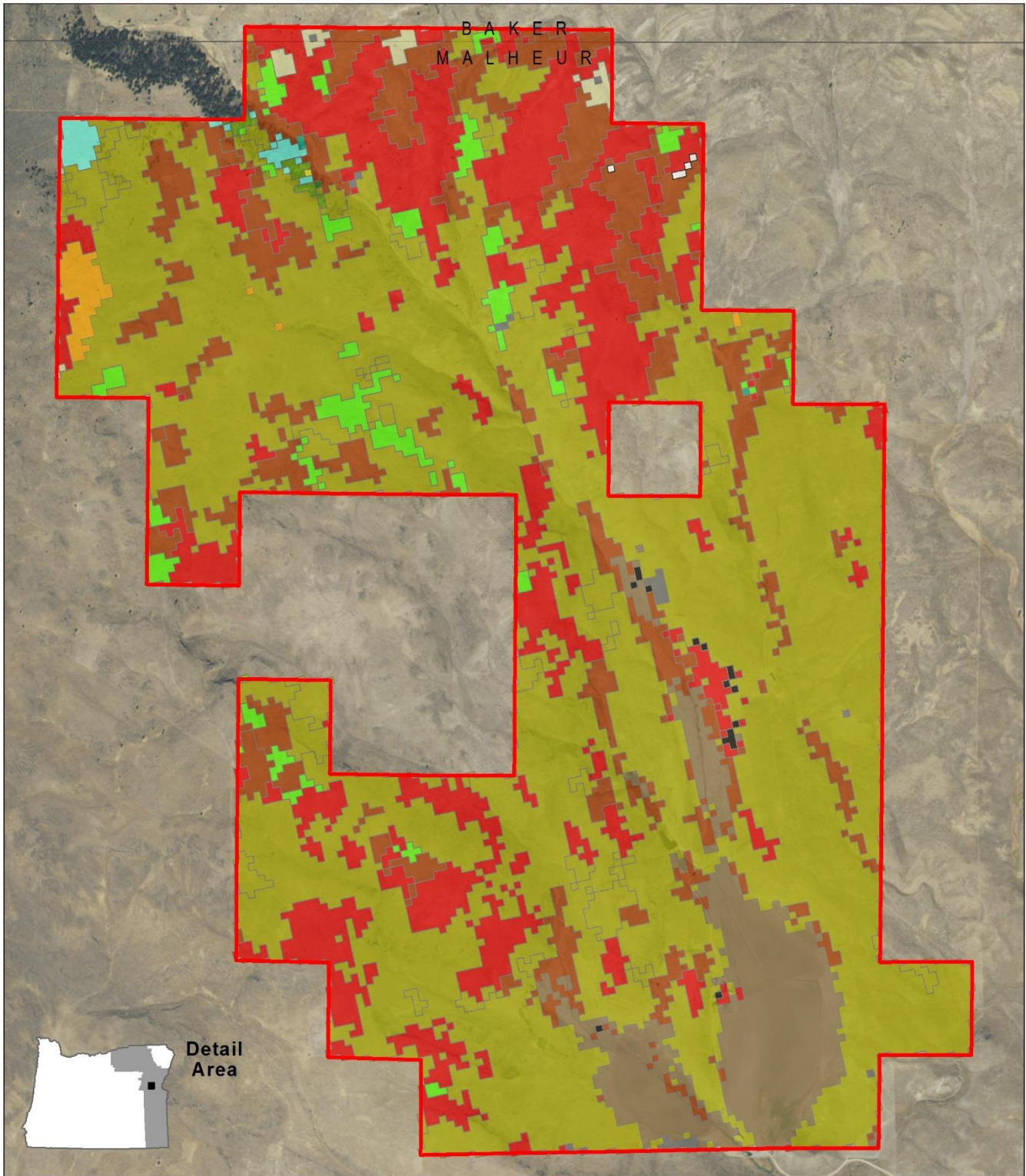
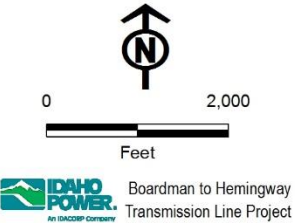


Figure 1. Alder Creek Ownership and Water



Detail Area



IDAHO POWER
AN IACORP COMPANY

Boardman to Hemingway
Transmission Line Project

<u>Mitigation Features</u>		■ Developed	■ Introduced Upland Vegetation	■ Shrub-Steppe without Big Sage
□ Alder Creek	■ Emergent Wetland	■ Forested Wetland	■ Ponderosa Pine	■ Western Juniper/Mountain Mahogany Woodland
<u>Habitat Type</u>		■ Mixed Grand Fir/Douglas Fir	■ Rocky Mountain Aspen	
■ Agriculture	■ Native Grasslands	■ Bare Ground Cliffs	□ Scrub-Shrub Wetland	
■ Desert Shrub		■ Talus	■ Shrub-Steppe with Big Sage	

Figure 2. Alder Creek Ranch Habitat Types

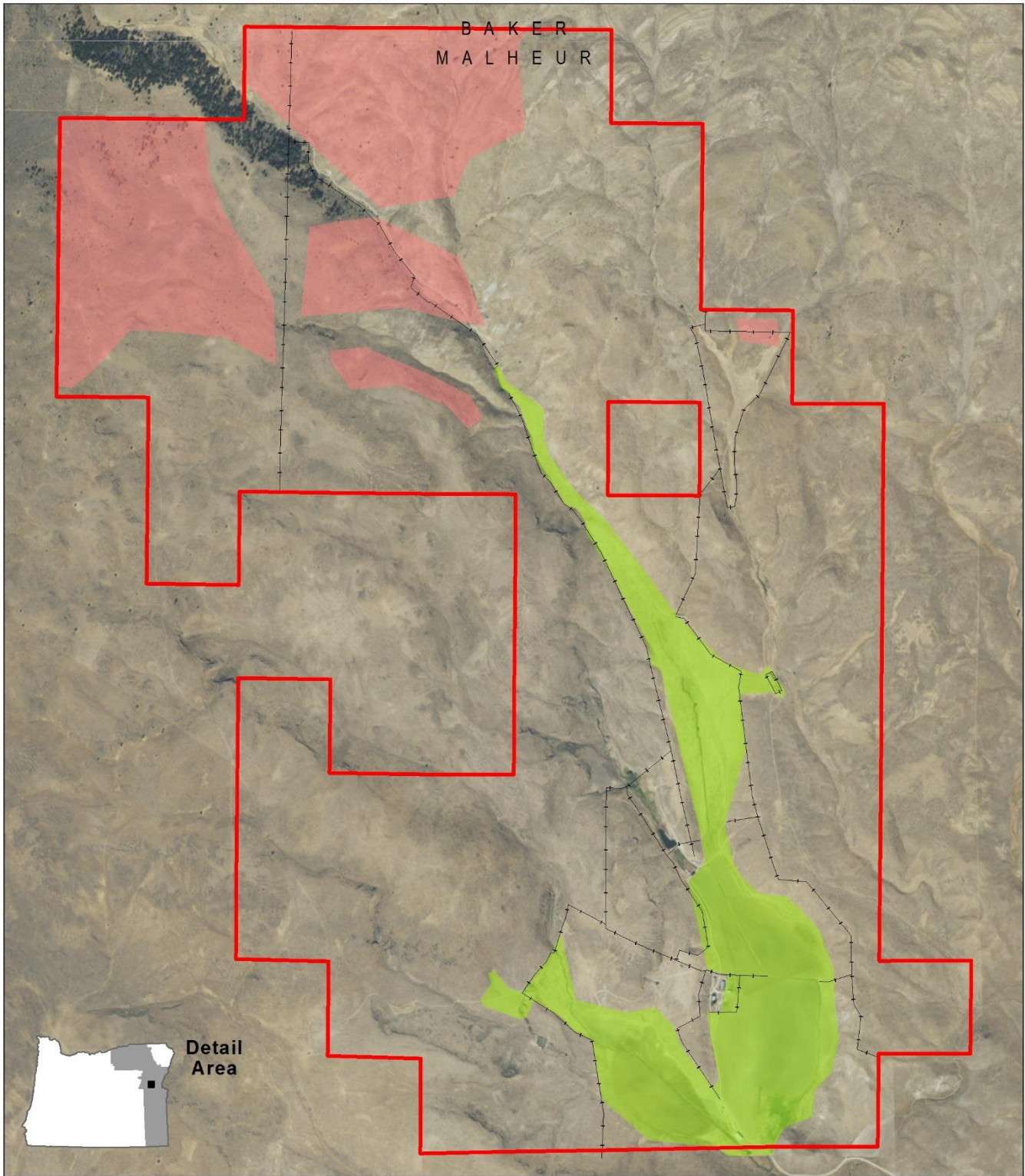


Figure 3. Alder Creek Potential Mitigation Action Areas

**Boardman to Hemingway Transmission Line Project
Desktop Habitat Mitigation Site Assessment Worksheet**

Parcel Name: Glasgow (Figure 1)
Landowner: _____

Date of Assessment: 10/13/2014
Parcel Elevation (ft): 3,000 – 4,600

Parcel Size in Acres: 1,438

Within Mitigation Service Area?: Yes

Location Description

(County, miles and direction from known location, TRS, UTM, other):

Baker County, 10 miles southeast of Keating.
T9S R43E Sections 11, 12, 13, 14, 23, 24

Vegetation Cover Classes (GAP ¹ , Figure 2)	HMP Habitat Category ² and Type	HMP General Vegetation Type	Acres	% of Total	Wildlife Habitat ³
	Category 1		0	0	
	Category 2				-
	Shrub-Steppe with Big Sage	Shrub/Grass	675.9	47.0	MDWR
	Shrub-Steppe with Big Sage	Shrub/Grass	364.9	25.4	MDWR, RMEWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	25.9	1.8	MDWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	6.2	0.4	RMEWR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	76.0	5.3	MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	159.9	11.1	MDWR, RMEWR, RMESR
	Shrub-Steppe without Big Sage	Shrub/Grass	10.5	0.7	MDWR, RMEWR
	Native Grasslands	Shrub/Grass	39.6	2.7	MDWR, RMEWR, RMESR
	Native Grasslands	Shrub/Grass	35.6	2.5	MDWR
	Native Grasslands	Shrub/Grass	1.7	0.1	MDWR, RMESR
	Mixed Grand Fir/Douglas Fir	Forest/Woodland	23.8	1.7	MDWR, RMEWR, RMESR
	Western Juniper/Mountain Mahogany Woodland	Forest/Woodland	4.4	0.3	MDWR, RMEWR, RMESR
	Rocky Mountain Aspen	Forest/Woodland	1.6	0.1	MDWR, RMEWR, RMESR
	Introduced Upland Vegetation	Shrub/Grass	8.0	0.6	MDWR
	Ponderosa Pine	Forest/Woodland	0.9	0.1	MDWR, RMEWR, RMESR
	Forested Wetland	Wetland	1.1	0.1	MDWR
	Emergent Wetland	Wetland	0.7	0.0	MDWR
	Remaining	-	2.2	0.2	-
	Category 3		0	0	-
	Category 4		0	0	-
	Category 5		0	0	-
	Category 6		0	0	-
	Total		1,438.9	100	-

¹USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in the Habitat Categorization Matrix (Attachment P1-1 of Exhibit P1).

²Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.

³RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.

⁴Total acres of habitat type may not match actual parcel size due to the resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

Soil types

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soils were identified on the property (**Figure 3**):

Ateron very stony loam (84 acres). Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

Brownscombe silt loam (389 acres). Brownscombe soils consist of moderately deep, well drained soils found on hills at elevations of 2,400 to 3,600 feet. Brownscombe soils are used for range, dryland winter wheat, and wildlife habitat. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass and arrowleaf balsamroot.

Hibbard gravelly silty clay loam (143 acres). Hibbard soils consist of moderately deep to a duripan, well drained soils found on fan terraces at elevations of 3,000 to 3,700 feet. Hibbard soils are used for rangeland. The native vegetation is bluebunch wheatgrass, Idaho fescue and big sagebrush.

Lookout very cobbly silt loam (85 acres). Lookout soils consist of moderately deep to a duripan, well drained soils found on hills at elevations of 2,800 to 3,600 feet. Lookout soils are mainly rangeland. Small acreage is irrigated for alfalfa, hay, pasture and small grain. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, buckwheat, and big sagebrush.

Ruckles-Ruclick complex (20 acres). Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

Skullgulch silty clay loam (196 acres). Skullgulch soils consist of very deep, well drained soils in concave positions on north-facing side slopes on terraces and on fans with elevations ranging from 4,000 to 5,400 feet. Skullgulch soils are used for rangeland. The native vegetation in MLRA 10 is Idaho fescue, bluebunch wheatgrass, prairie junegrass, mountain big sagebrush, and green rabbitbrush. The native vegetation in MLRA 9 is Idaho fescue, bluebunch wheatgrass and prairie junegrass.

Snell-Ateron complex (468 acres). Snell series consists of moderately deep, well drained soils found on hills, plateaus, mountains and on canyon walls at elevations of 2,000 to 6,800 feet. Snell soils are used for livestock grazing and wildlife habitat. Potential native vegetation is bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

Virtue very gravelly silt loam (53 acres). Virtue soils consist of moderately deep to a duripan well drained soils found on fans and terraces at elevations of 2,300 to 4,000 feet. Virtue soils are used for rangeland, irrigated small grain, hay and pasture. The native vegetation is bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, Thurber needlegrass and Wyoming big sagebrush.

Hydrologic Features Present (SteamNet, NWI, NHD)	Two perennial streams and one intermittent stream within the property boundary (NHD). NWI identifies a couple of emergent wetlands, a scrub-shrub wetland, and three cold water springs in addition to riparian areas associated with NHD data.
Adjacent land ownership, use, and condition	The northern boundary of the property connects to a very large tract of BLM land that connects many of the uplands above the Lower Powder Valley; including Spring Creek and Goose Creek areas to the north of State Route 86; Love Creek, Ritter Creek and Ruckles Creek south of State Route 86; and areas extending into the upper Lower Powder Valley including Crews Creek and portions of the Powder River north of State Route 203 to the Union/Baker County line. However, a majority of the property is immediately adjacent to private properties. Adjacent land use is rangeland that appears to be heavily grazed.
Infrastructure Density within or Near the Parcel (Qualitative Description)	Property is approximately 1 mile south of State Route 86 and contains some fencing and two-track trails; otherwise, the property is open rangeland absent of development.
Summary	The entire property is within a sage-grouse Core Area that is well-studied by ODFW. Nesting sage-grouse have been documented on the property. The property contains both elk and mule deer winter ranges and is heavily utilized by pronghorn in the spring. The property is grazed every other year, and has been managed in this manner for the last 10 years. Landowner explained that since this grazing rotation was implemented, he has seen an upward trend in desirable vegetation (Idaho fescue especially). The property is mostly Wyoming big sagebrush with islands of invasive species (Japanese brome was mentioned) that would need treatment. Landowner believes that ten years of rest from grazing and some treatments would get the property to a state where, barring fire or some other unexpected event, habitat would contain enough native desirable vegetation that few management actions would be needed to maintain the quality of habitat.
Pass/Fail Desktop Assessment?	Pass

Boardman to Hemingway Transmission Line Project

Consideration of Property as a Potential Mitigation Site

Mitigation Function	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 Rocky Mountain elk winter range and mule deer winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, & 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse, elk, and deer (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
Mitigation Site Manager	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
Mitigation Actions	<p>The following are mitigation actions that may be implemented at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> • <i>Modification of Livestock Grazing</i> – this property has been grazed every other year for the past ten years, allowing for re-establishment of native vegetation. Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions. • <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing. • <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation (specifically Japanese brome) were noted on the property in cattle congregation areas. • <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time. • <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed.
Monitoring	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

Success Criteria

Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of a reduction in weeds and non-native invasive plant species.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

Financial Outline**Estimated Budget for the Glasgow Mitigation Site**

Action	Cost per Unit	Units	Years	Expense
One-time Costs				
Acquisition	?	1		?
50-year Operation and Management Costs				
O&M ¹	\$30.00	1,438	50	\$2,157,000
Total		-		\$? (\$?) ²

¹This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

²Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.

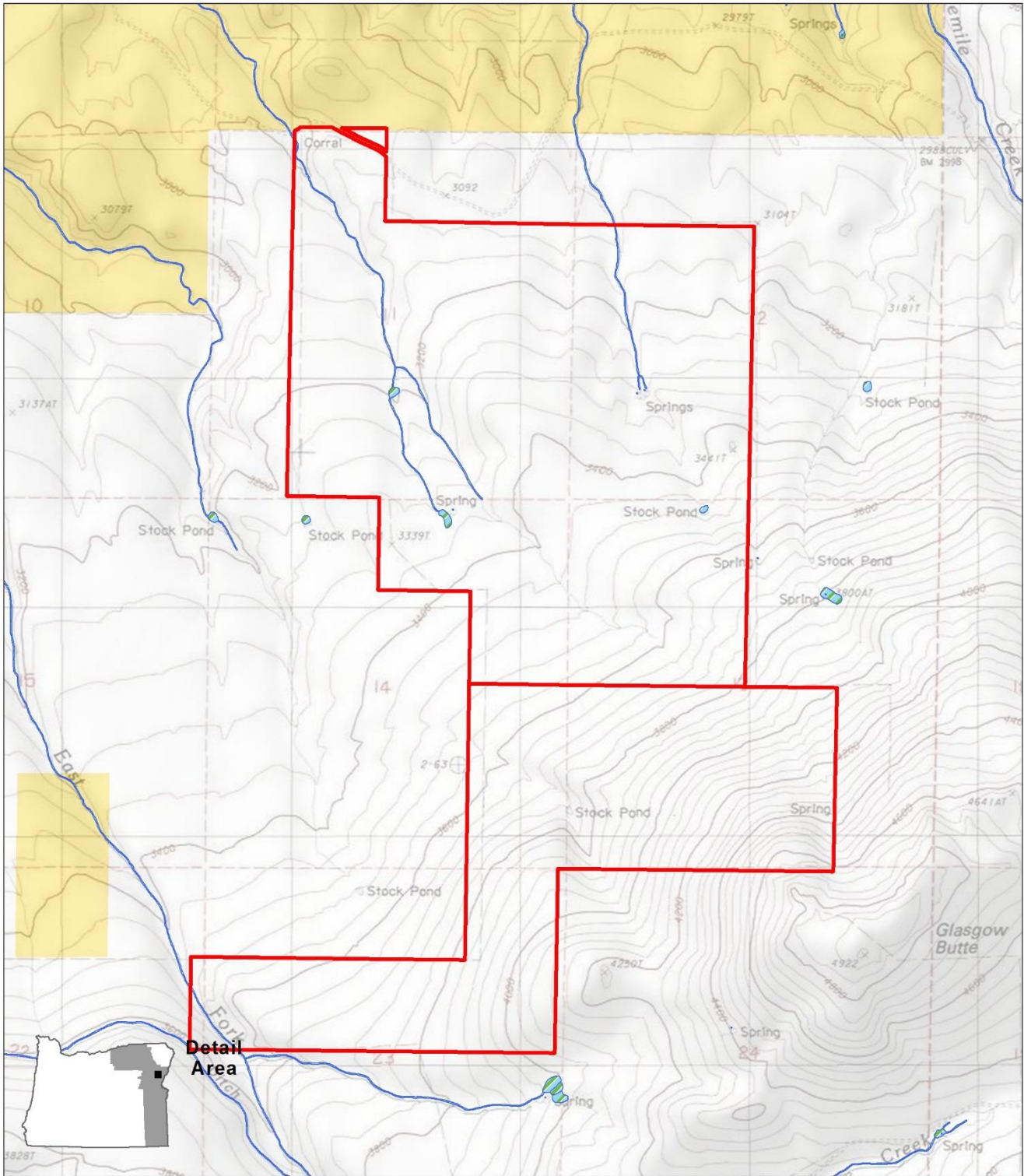


Figure 1. Glasgow Ownership and Water

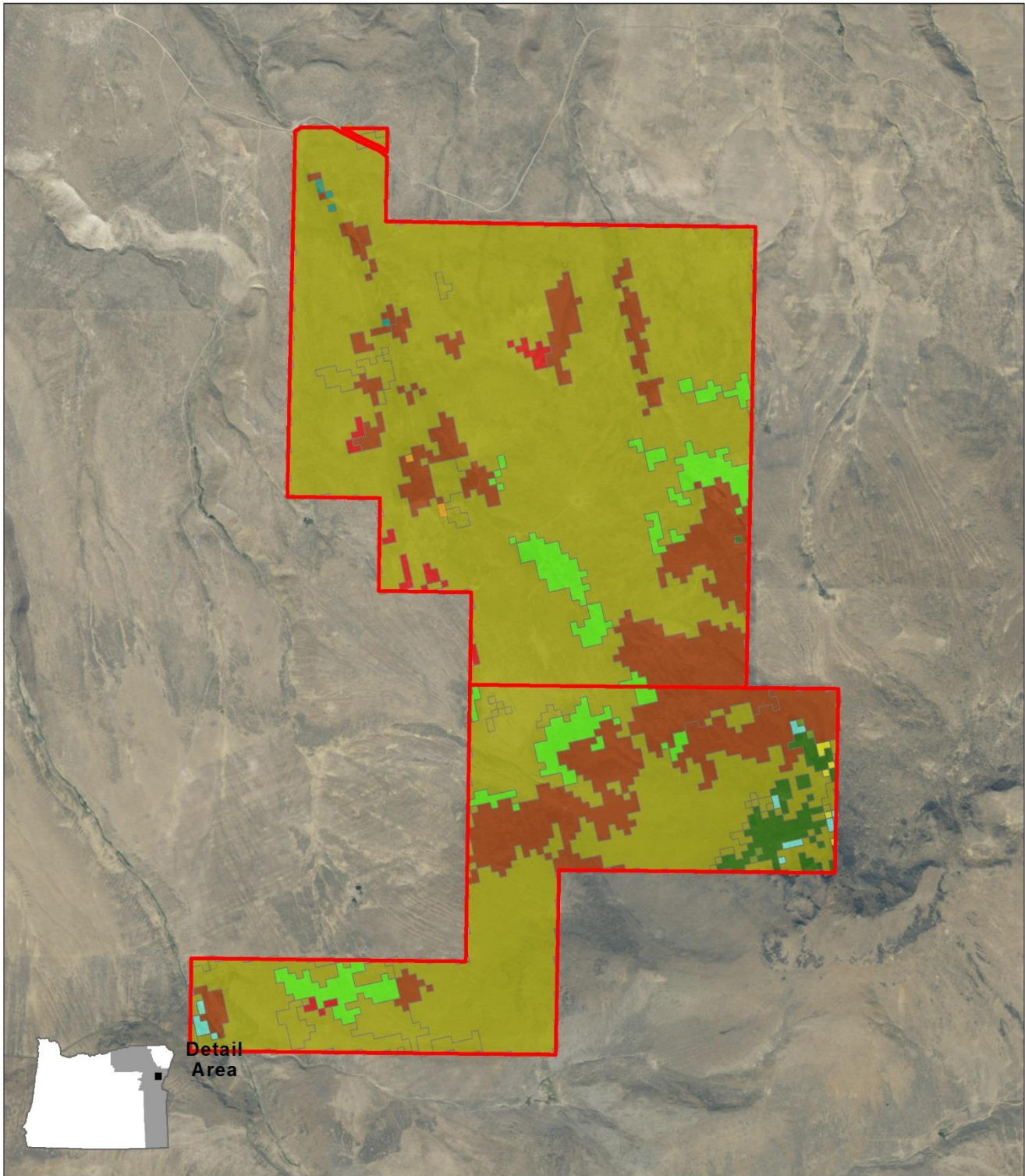


Figure 2. Glasgow Habitat Types

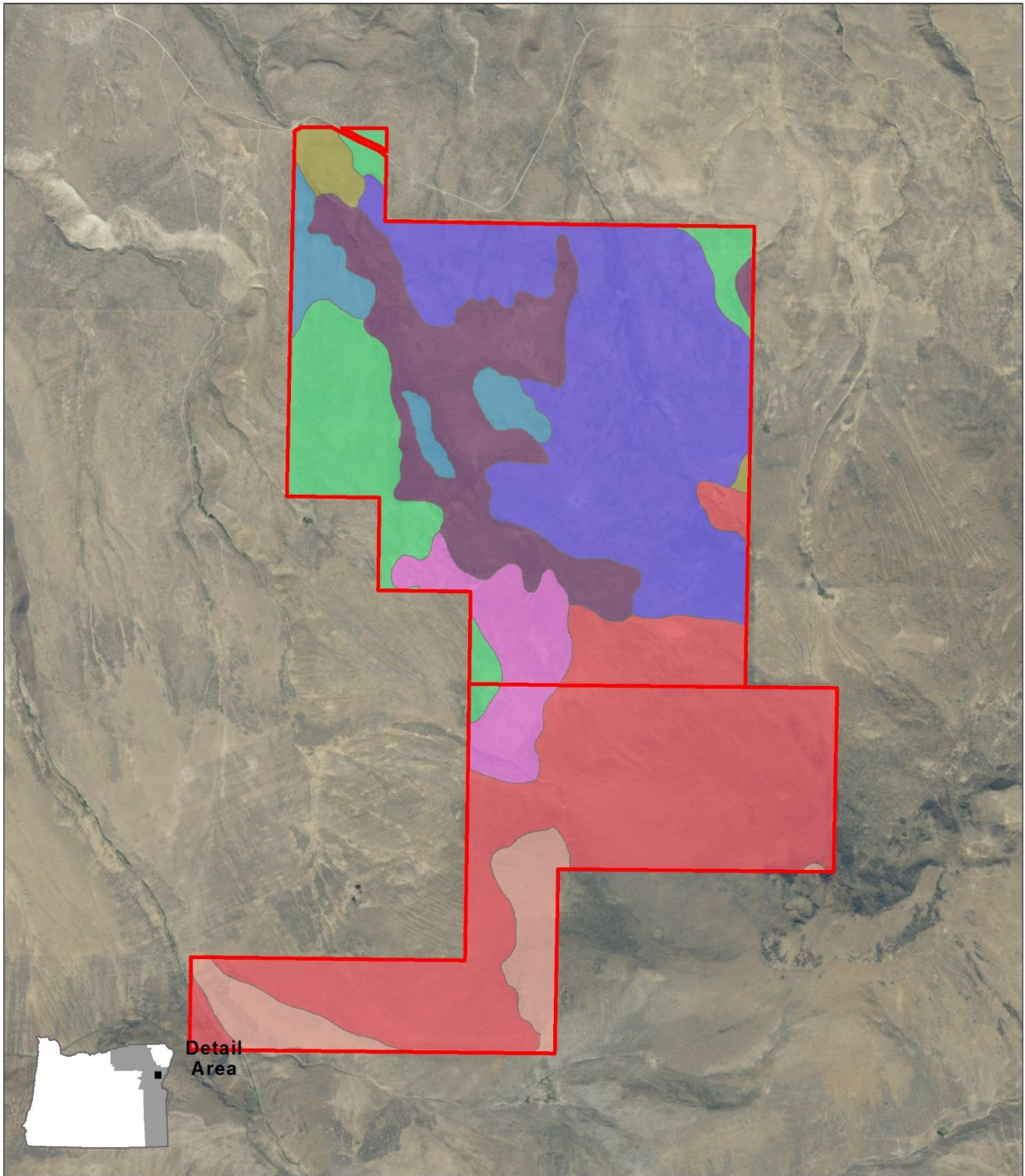


Figure 3. Glasgow Soil Types

**Boardman to Hemingway Transmission Line Project
Desktop Habitat Mitigation Site Assessment Worksheet**

Parcel Name: Trail Creek
Landowner: _____

Date of Assessment: 10/13/2014
Parcel Elevation (ft): 3,600 – 4,580

Parcel Size in Acres: 624

Within Mitigation Service Area?: Yes

Location Description

(County, miles and direction from known location, TRS, UTM, other):

Baker County, approximately 5 miles northeast of Durkee.
T10S R43E Section 36, T10S R44E Section 31, T11S R43E Section 1, T11S R44E Section 6 (**Figure 1**)

Vegetation Cover Classes (GAP ¹ , Figure 2)	HMP Habitat Category ² and Type	HMP General Vegetation Type	Acres	% of Parcel	Wildlife Habitat ³
		Category 1		0	0
	Category 2		624.5	100	-
	Shrub-Steppe with Big Sage	Shrub/Grass	490.0	78.5	RMEWR, RMESR, MDSR
	Shrub-Steppe without Big Sage	Shrub/Grass	75.6	12.1	RMEWR, RMESR, MDSR
	Native Grasslands	Shrub/Grass	27.1	4.3	RMEWR, RMESR, MDSR
	Introduced Upland Vegetation	Shrub/Grass	8.2	1.3	RMEWR, RMESR, MDSR
	Western Juniper /Mountain Mahogany Woodland	Forest/Woodland	7.6	1.2	RMEWR, RMESR, MDSR
	Ponderosa Pine	Forest/Woodland	7.1	1.1	RMEWR, RMESR, MDSR
	Mixed Grand Fir / Douglas Fir	Forest/Woodland	3.1	0.5	RMEWR, RMESR, MDSR
	Rocky Mountain Aspen	Forest/Woodland	3.1	0.5	RMEWR, RMESR, MDSR
	Bare Ground Cliffs Talus	Bare Ground	2.0	0.3	RMEWR, RMESR, MDSR
	Emergent Wetland	Wetland	0.7	0.1	RMEWR, RMESR, MDSR
	Category 3		0	0	-
	Category 4		0	0	-
	Category 5		0	0	-
	Category 6		0	0	-
	Total	NA	624.5⁴	100	-

¹ USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in Exhibit P1, Attachment P1-1 Habitat Categorization Matrix.
² Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.
³ RMEWR = Rocky Mountain Elk Winter Range.
⁴ Total acres of habitat type may not match actual parcel size due to resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary. This is apparent in **Figure 2**.

Soil type

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soil was identified on the property (**Figure 3**):

Durkee gravelly silt loam (623). Durkee soils consist of moderately deep, well drained soils on smooth rolling hills at elevation ranges from 3,600 to 6,100 feet.

<p>Hydrologic Features Present (SteamNet, NWI, NHD)</p>	<p>Two intermittent streams are on the property (NHD). NWI does not indicate any additional wetland features beyond those associated with the streams identified by NHD.</p>
<p>Adjacent land ownership, use, and condition (if possible)</p>	<p>A majority of this property shares a border with a BLM parcel that is approximately 4,000 acres in size. Also adjacent to private land ownership. Dominant land use in the area is rangeland. Adjacent private lands appear to be more degraded as a result of heavier grazing practices (per 2013 site visit).</p>
<p>Infrastructure Density within or Near the Parcel (Qualitative Description)</p>	<p>The property contains some fencing and gates and some two track roads; otherwise open rangeland.</p>
<p>Summary</p>	<p>The property is completely within a sage-grouse Core Area and the Lookout Mountain Rocky Mountain elk herd's winter range. The property is completely within elk summer range and mule deer summer range as well.</p> <p>The property is close to the Nodine sage-grouse lek. The property provides sage-grouse breeding habitat, adequate sagebrush cover and height ensures adequate winter forage, and an abundance of forbs in the understory and a source of water in Trail Creek provides quality brood-rearing habitat. The property is able to support sage-grouse year-round and therefore provides habitat for many other sagebrush obligate species.</p>
<p>Pass/Fail Desktop Assessment?</p>	<p>Pass</p>

Boardman to Hemingway Transmission Line Project

Consideration of Property as a Potential Mitigation Site

Mitigation Function	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 Rocky Mountain elk winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, & 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse and elk (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
Mitigation Site Manager	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
Mitigation Actions	<p>The following are mitigation actions that IPC may consider implementing at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> • <i>Juniper/Conifer Removal</i> – Opportunity for spot-treating single trees occurs throughout the property to prevent future encroachment. • <i>Modification of Livestock Grazing</i> – grazing on this property appears to have been managed in a manner that allows native vegetation to remain established and provide cover and forage for wildlife species. Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions. • <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing. • <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation were noted along Trail Creek where cattle congregate. • <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time. • <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed. • <i>Wetland/Spring/Riparian Improvement</i> – opportunity exists along Trail Creek to perform riparian/watershed improvements.
Monitoring	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

Success Criteria

Specific success criteria will be developed once mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of weed reduction.
- Successful juniper removal and continued control of encroachment onto the mitigation site for the life of the project.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

Financial Outline**Estimated Budget for the Trail Creek Mitigation Site**

Action	Cost per Unit	Units	Years	Expense
One-time Costs				
Acquisition	?	1		?
50-year Operation and Management Costs				
O&M ¹	\$30.00	624	50	\$936,000
Total		-		\$? (\$?) ²

¹ This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

² Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.

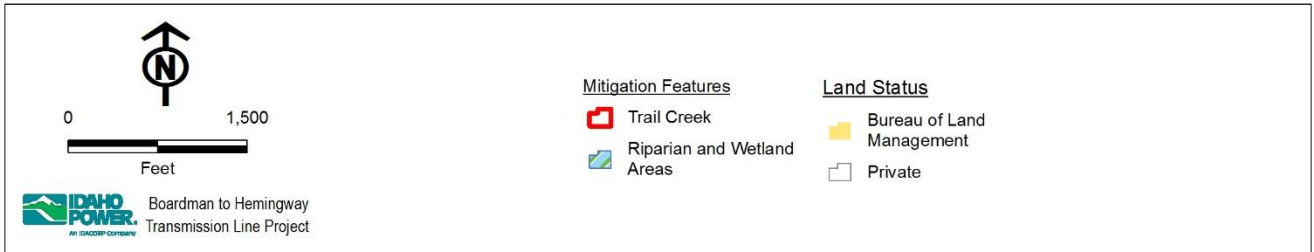
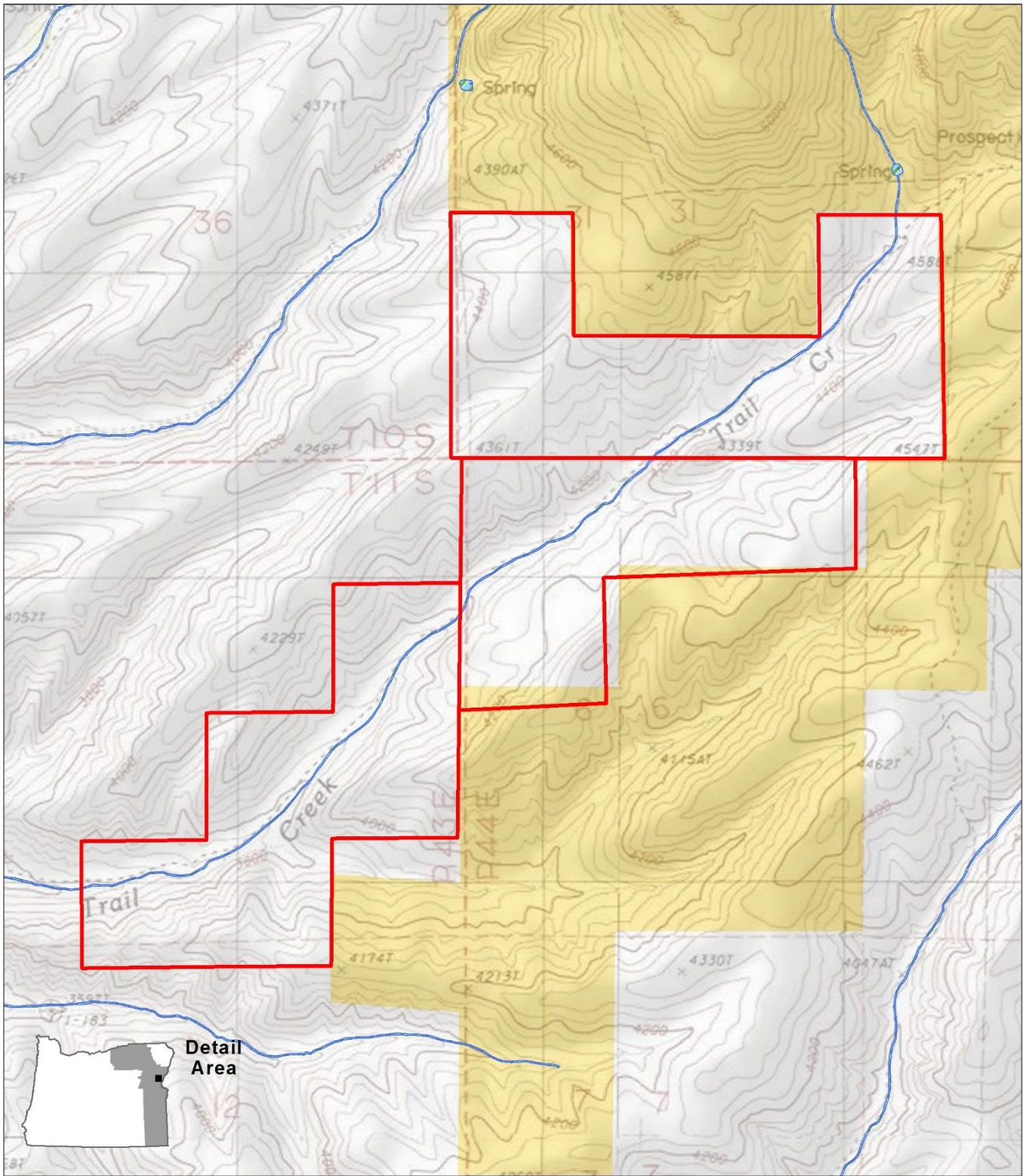
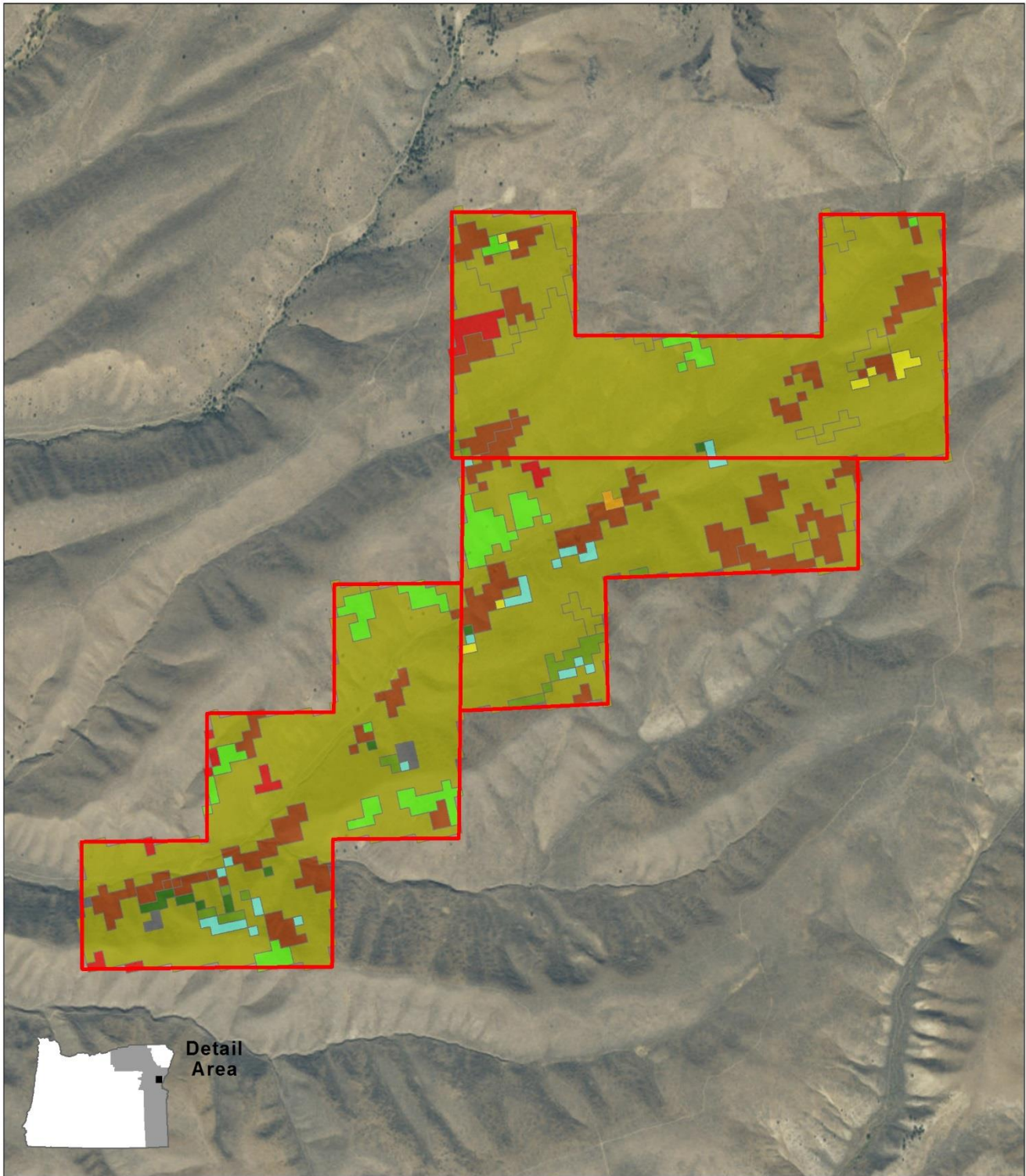


Figure 1. Trail Creek Ownership and Water



Detail Area



Figure 2. Trail Creek Habitat Types

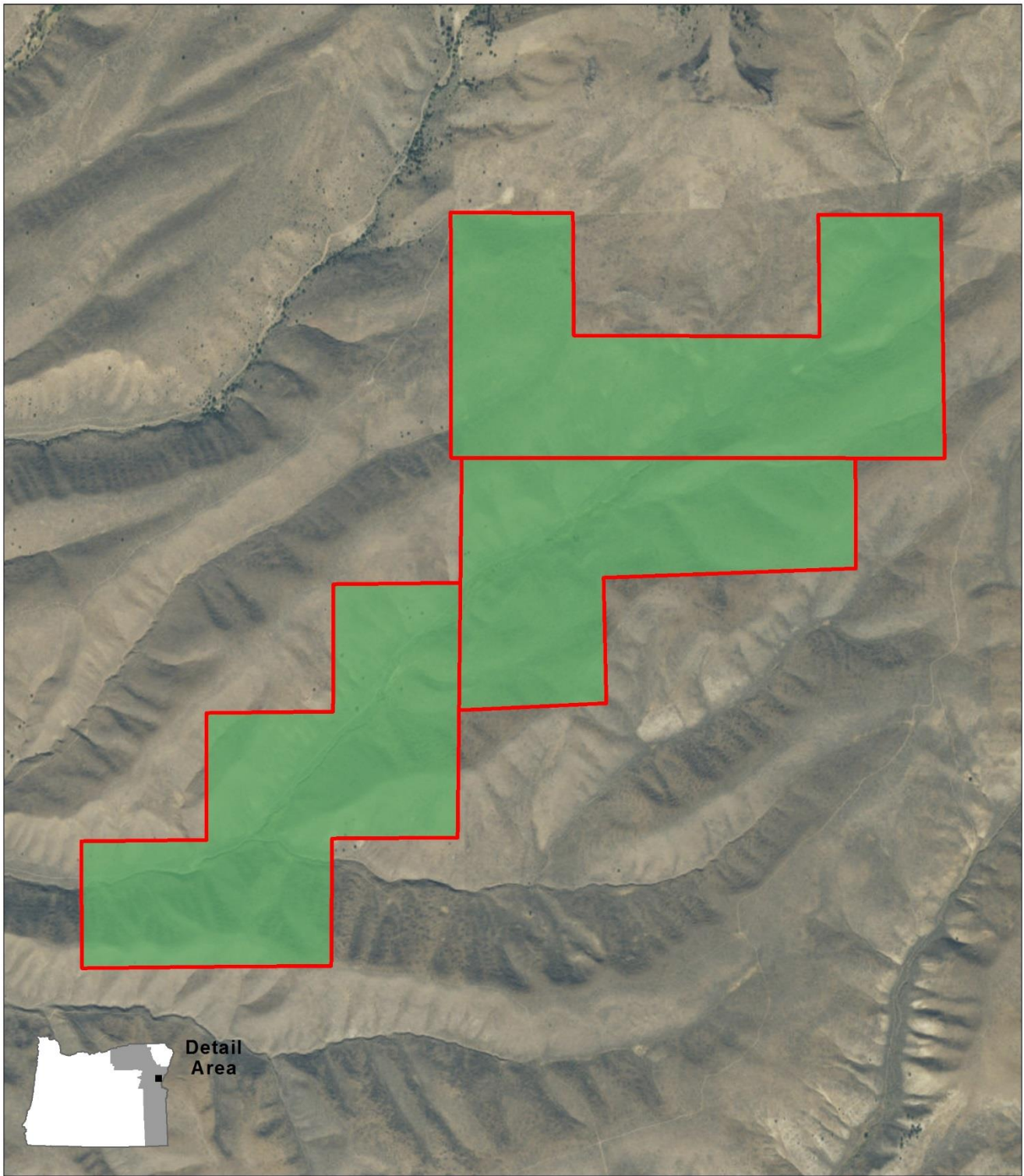


Figure 3. Trail Creek Soil Types

Boardman to Hemingway Transmission Line Project

Desktop Habitat Mitigation Site Assessment Worksheet

Parcel Name: Upper Timber (Figure 1)
 Landowner: _____

Date of Assessment: 10/13/2014
 Parcel Elevation (ft): 3,000 – 4,800

Parcel Size in Acres: 1,577

Within Mitigation Service Area?: Yes

Location Description

(County, miles and direction from known location, TRS, UTM, other):

Baker County, 5 miles west of Richland.
 T9S R44E Sections 22, 23, 26, 27, 28, 29

Vegetation Cover Classes (GAP ¹ , Figure 2)	HMP Habitat Category ² and Type	HMP General Vegetation Type	Acres	% of Total	Wildlife Habitat ³
	Category 1		0	0	
	Category 2				-
	Shrub-Steppe with Big Sage	Shrub/Grass	538.1	34.2	MDWR
	Shrub-Steppe with Big Sage	Shrub/Grass	407.6	25.8	MDWR, RMESR
	Shrub-Steppe with Big Sage	Shrub/Grass	104.1	6.6	RMEWR, RMESR, MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	79.3	5.1	MDWR
	Shrub-Steppe without Big Sage	Shrub/Grass	189.7	12.0	MDWR, RMESR
	Shrub-Steppe without Big Sage	Shrub/Grass	32.1	2.0	RMEWR, RMESR, MDWR
	Native Grasslands	Shrub/Grass	19.5	1.2	MDWR
	Native Grasslands	Shrub/Grass	80.0	5.1	MDWR, RMESR
	Native Grasslands	Shrub/Grass	11.2	0.7	RMEWR, RMESR, MDWR
	Introduced Upland Vegetation	Shrub/Grass	36.2	2.3	MDWR
	Introduced Upland Vegetation	Shrub/Grass	52.2	3.3	MDWR, RMESR
	Introduced Upland Vegetation	Shrub/Grass	6.4	0.4	RMEWR, RMESR, MDWR
	Forested Wetland	Wetland	7.4	0.5	MDWR
	Forested Wetland	Wetland	1.5	0.1	MDWR, RMESR
	Agriculture ⁴	Ag/Developed	3.3	0.3	MDWR
	Agriculture ⁴	Ag/Developed	3.8	0.2	MDWR, RMESR
	Mixed Grand Fir/Douglas Fir	Forest/Woodland	1.8	0.1	MDWR
	Ponderosa Pine	Forest/Woodland	1.6	0.1	MDWR
	Rocky Mountain Aspen	Forest/Woodland	1.1	0.1	MDWR
	Category 3		0	0	-
	Category 4		0	0	-
	Category 5		0	0	-
	Category 6		0	0	-
	Total⁵		1,576.9	100	-

¹ USGS Gap Analysis Project (GAP) GIS data using ecological systems. Ecological systems were cross-walked to HMP Habitat Type as shown in the Habitat Categorization Matrix (Attachment P1-1 of Exhibit P1).

² Represents the habitat category based on overlap with wildlife habitat layers. Agriculture and Developed habitat types' categories are not modified by overlap with wildlife habitat.

³ RMEWR = Category 2 habitat for ODFW Rocky Mountain elk winter range. MDWR = Category 2 habitat for ODFW mule deer winter range.

⁴ A brief review of aerial imagery indicated that ReGAP is misclassifying areas as Agriculture. In this instance, the Agriculture appears likely to be wetlands. Therefore, Agriculture is remaining as a Category 2 habitat in this case. Reviewing of ReGAP data via aerial photo interpretation is not performed for the vast majority of habitat classifications on potential mitigation properties. On the ground knowledge of this property prompted a review of the Agriculture habitat classification.

⁵ Total acres of habitat type may not match actual parcel size due to the resolution of the GAP raster dataset. Pixels of the raster dataset were not simplified or smoothed to match the exact shape of the parcel boundary.

Soil types

The NRCS Soil Survey Geographic Database (SSURGO) data was reviewed and the following soils were identified on the property (**Figure 3**):

Ateron very stony loam (123 acres). Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

Bakeoven-Ruckles complex (101 acres). Bakeoven soils consist of very shallow, well drained soils found on mountains, ridgetops, hillslopes, mesas, and benches at elevations of 300 to 4,800 feet. Bakeoven soils are used for livestock grazing and wildlife habitat. Native vegetation is Sandberg bluegrass and stiff sagebrush. Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush.

Bouldrock complex (129 acres) and Bouldrock loam (118 acres). Bouldrock soils consist of moderately deep, well drained soils found on south-facing side slopes of mountainous areas at elevations ranging from 4,000 to 6,200 feet. Bouldrock soils are used for rangeland. The native vegetation is bluebunch wheatgrass, mountain big sagebrush, arrowleaf balsamroot and gray rabbitbrush.

Greenscombe loam (280 acres). Greenscombe soils consist of moderately deep, well drained soils on low hills at elevations 3,200 to 3,800 feet. Greenscombe soils are Rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass, Thurber needlegrass, and big sagebrush.

Hyll-Simas association (91 acres). Hyall soils consist of moderately deep to consolidated old alluvium (densic material), well drained soils on side slopes of dissected terraces at elevations of 2,700 to 3,500 feet. Hyall soils are used for range, watershed and wildlife habitat. Native vegetation is bluebunch wheatgrass, Idaho fescue and arrowleaf balsamroot. Simas soils consist of very deep, well drained soils found on hills at elevations of 1,200 to 4,000 feet. Simas soils are used for livestock grazing. Native plants are bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and Wyoming and basin big sagebrush.

Kilmerque loam (25 acres). Kilmerque soils consist of moderately deep, well drained soils on gently rolling bench tops to moderately steep south aspect side slopes in forested mountains at elevations ranging from 3,500 to 6,000 feet. Kilmerque soils are used for woodland. The native vegetation is ponderosa pine, Douglas fir and pinegrass.

Ruckles-Ruclick-Snellby complex (50 acres). Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. Snellby soils consist of moderately deep, well drained soils on hills at elevations of 3,400 to 3,800 feet. Snellby soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, and big sagebrush.

Soil types (cont.)

Ruckles-Ruclick complex (336 acres). Ruckles soils consist of shallow, well drained soils found on hill and canyon side slopes at elevations ranging from 1,200 to 3,800 feet in Oregon. Ruckles soils are used for livestock grazing. Native vegetation dominantly is bluebunch wheatgrass, Idaho fescue on north slopes, Sandberg bluegrass and Wyoming big sagebrush. Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

Ruclick very cobbly silt loam (135 acres). Ruclick soils consist of moderately deep, well drained soils found on summits, dipslopes, and sideslopes of foothills and tablelands at elevations of 4,000 to 6,500 feet in Idaho, and as low as 1,200 feet in Oregon. Ruclick soils are used mainly for rangeland and wildlife habitat. The dominant natural vegetation is Wyoming big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass.

Snell-Ateron complex (32 acres). Snell series consists of moderately deep, well drained soils found on hills, plateaus, mountains and on canyon walls at elevations of 2,000 to 6,800 feet. Snell soils are used for livestock grazing and wildlife habitat. Potential native vegetation is bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass. Ateron soils consist of shallow, well drained soils found on ridge tops and side slopes of hills and mountains at elevations from 3,600 to 5,800 feet. Ateron soils are used for livestock grazing. The native vegetation is mountain big sagebrush, Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass.

Snellby stony silt loam (79 acres). Snellby soils consist of moderately deep, well drained soils on hills at elevations of 3,400 to 3,800 feet. Snellby soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, and big sagebrush.

Taterpa loam (77 acres). Taterpa soils consist of deep, well drained soils on north-facing side slopes of mountains at elevations ranging from 4,000 to 6,200 feet. Taterpa soils are used for rangeland. The native vegetation is Idaho fescue, bluebunch wheatgrass, mountain big sagebrush and green rabbitbrush.

Hydrologic Features Present
(SteamNet, NWI, NHD)

The property contains four perennial streams. NWI identifies several (14) emergent wetlands, a couple of impounded ponds, and three cold springs.

Adjacent land ownership, use, and condition

A majority of the immediately adjacent lands are private ownership; however, a few small BLM parcels border the property and larger tracts of BLM land are within 1 mile of the property. Livestock rangeland is the primary land use in the area, with irrigated agriculture in the valley surrounding Richland, approximately 2 miles to the east of the property.

Infrastructure Density within or Near the Parcel
(Qualitative Description)

State Route 86 is 1 mile north of the property. The property itself contains some fencing and two track trails; otherwise, the property is open range.

Summary

The property contains some high quality shrub-steppe and native grassland habitat, but is interspersed with invasive vegetation such as medusahead wildrye. The property contains numerous water sources and riparian habitat. The property is completely within a sage-grouse Core Area and mule deer winter range and also contains some elk winter range. The highest density of wintering mule deer in Baker County occurs just north of the property. Pronghorn are common in the area. The property is adjacent to multiple sage-grouse leks and is situated between known lek sites and Sheep Mountain where radio-collared birds have been located, indicating the property is likely used during seasonal migrations and/or for nesting and brood rearing. The Pevine Flat area to the east is important for both sage-grouse and wintering big game.

Pass/Fail Desktop Assessment?

Pass

Boardman to Hemingway Transmission Line Project

Consideration of Property as a Potential Mitigation Site

Mitigation Function	<p>This mitigation site has been identified as in-kind and in-proximity mitigation for impacts on Category 2 mule deer winter range and Rocky Mountain elk winter range within the shrub/grass general vegetation type. This mitigation site could also help meet the Project need for sage-grouse habitat mitigation. It also provides opportunity for shrub/grass mitigation of Category 3, 4, & 5 habitats. It contains important habitat features that could be preserved and has some uplift opportunities that could be achieved through implementation of standard mitigation actions.</p> <p>The mitigation actions listed below, upon successful implementation, will increase the quality of habitat available to sage-grouse, elk, and deer (among other species) within the mitigation site and result in an ecological uplift to the mitigation site above what is provided under the current management.</p>
Mitigation Site Manager	Fee title acquisition with transfer of ownership to State of Oregon, Federal Land Management Agency, approved NPO or Land Trust.
Mitigation Actions	<p>The following are mitigation actions that may be implemented at this mitigation site in order to satisfy the mitigation policies/guidelines of the permitting agencies. All mitigation actions will follow reliable methods. The mitigation actions presented here are not comprehensive. Implementation will likely be some combination of one or more of the following:</p> <ul style="list-style-type: none"> • <i>Modification of Livestock Grazing</i> – Future management would focus primarily on grazing practices that would not compete with native wildlife life history needs. Targeted grazing may be considered for habitat enhancement/treatment actions. • <i>Fence Removal/Marking</i> – opportunities are unknown at this time, but it is anticipated that some unnecessary fencing may be removed or necessary fencing can be upgraded to more wildlife friendly fencing. • <i>Weed treatment</i> – the extent of noxious weed invasion on the mitigation site is unknown at this time but it is anticipated that opportunities exist to implement this mitigation action. Some areas of introduced upland vegetation (specifically medusahead wildrye) were noted on the property. • <i>Native revegetation/restoration</i> – focus of efforts would be to promote establishment of sagebrush and bunchgrasses; opportunities exist but have not been specifically identified at this time. • <i>Fire readiness</i> – efforts made to make the property more resistant to catastrophic fire and a fire response plan could be developed. • <i>Wetland/Spring/Riparian Improvement</i> – opportunity exists along Canyon Creek, Upper Timber Gulch, and other areas to perform riparian/watershed improvements.
Monitoring	A specific plan for monitoring will be developed, but in general, mitigation progress will be monitored through vegetation plot monitoring and establishment of photo locations. Monitoring will occur annually for the first 3-5 years and an annual report will be produced. During the annual monitoring phase, a longer-term monitoring plan will be developed using similar protocols and methods to monitor the mitigation actions at larger time intervals (i.e., 5 years, 10 years).

Success Criteria

Specific success criteria will be developed once baseline conditions have been determined and potential mitigation actions have been confirmed for the site. Success criteria may include but are not limited to:

- Vegetation plots show an increase in native vegetation cover and general trend toward increased habitat quality representing an ecological uplift.
- Successful weed control through documentation of a reduction in weeds and non-native invasive plant species.
- Mitigation success will not be dependent on documentation of increased use of the mitigation site by sage-grouse or any other wildlife species.

Financial Outline**Estimated Budget for the Upper Timber Mitigation Site**

Action	Cost per Unit	Units	Years	Expense
One-time Costs				
Acquisition	?	1		?
50-year Operation and Management Costs				
O&M ¹	\$30.00	1,577	50	\$2,365,500
Total		-		\$? (\$?) ²

¹ This O&M cost is an estimate of the cost per acre per year (not including acquisition/easement costs) based on the research presented in the Independent Economic Analysis Board's 2007 *Investigation of Wildlife O&M Costs*. The average cost per acre presented in that document was \$24 in 2004 dollars, this has been adjusted to reflect 2015 dollars. In addition, one of the projects presented in the document was the 10,000 acre Sagebrush Flat Wildlife Mitigation area in Washington state which is within a similar habitat type and has a FY2015 budget of approximately \$300,000 (or \$30/acre).

² Cost per acre here includes cost of acquisition/easement and initial mitigation actions and long-term O&M for 50 years.

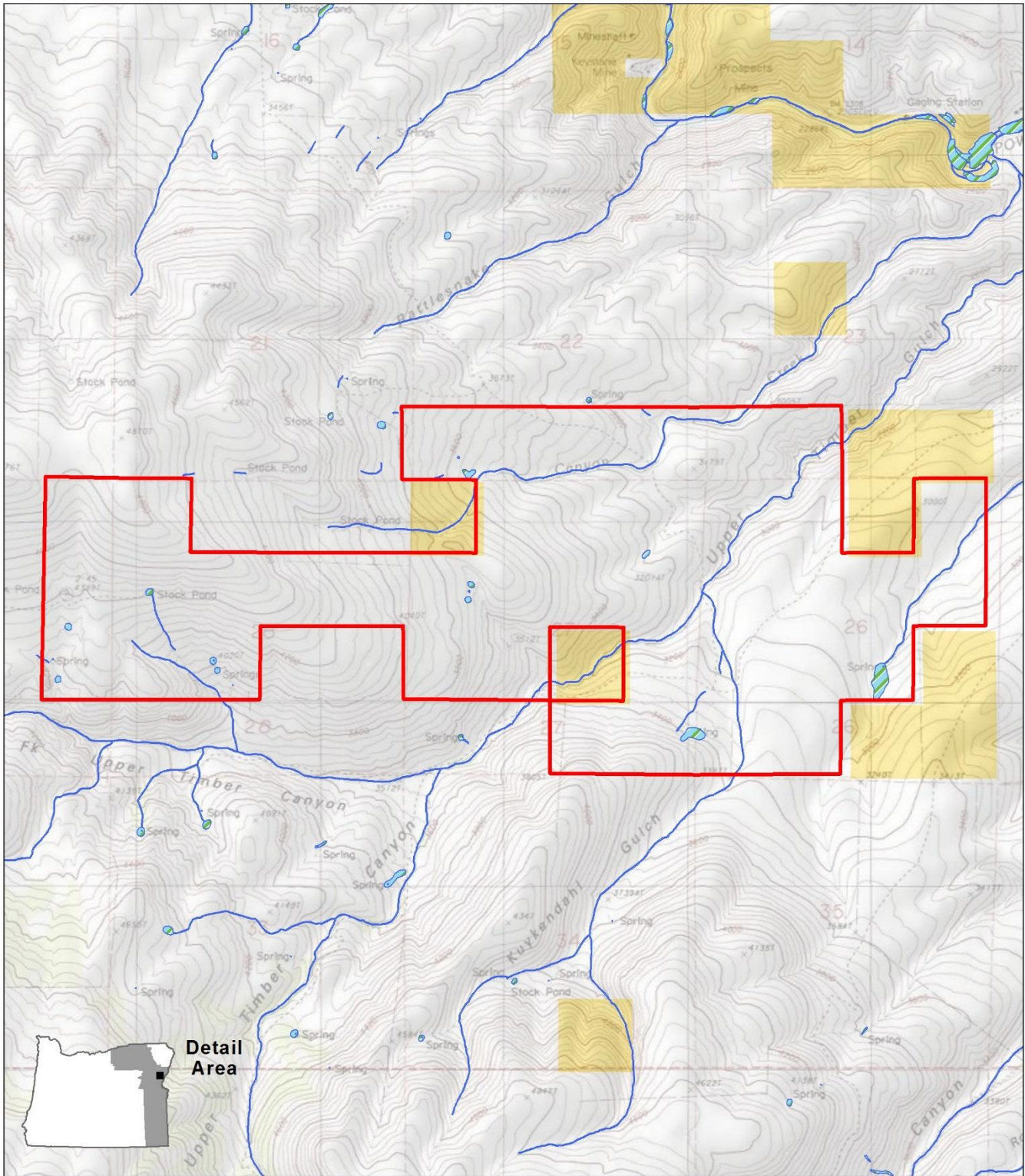
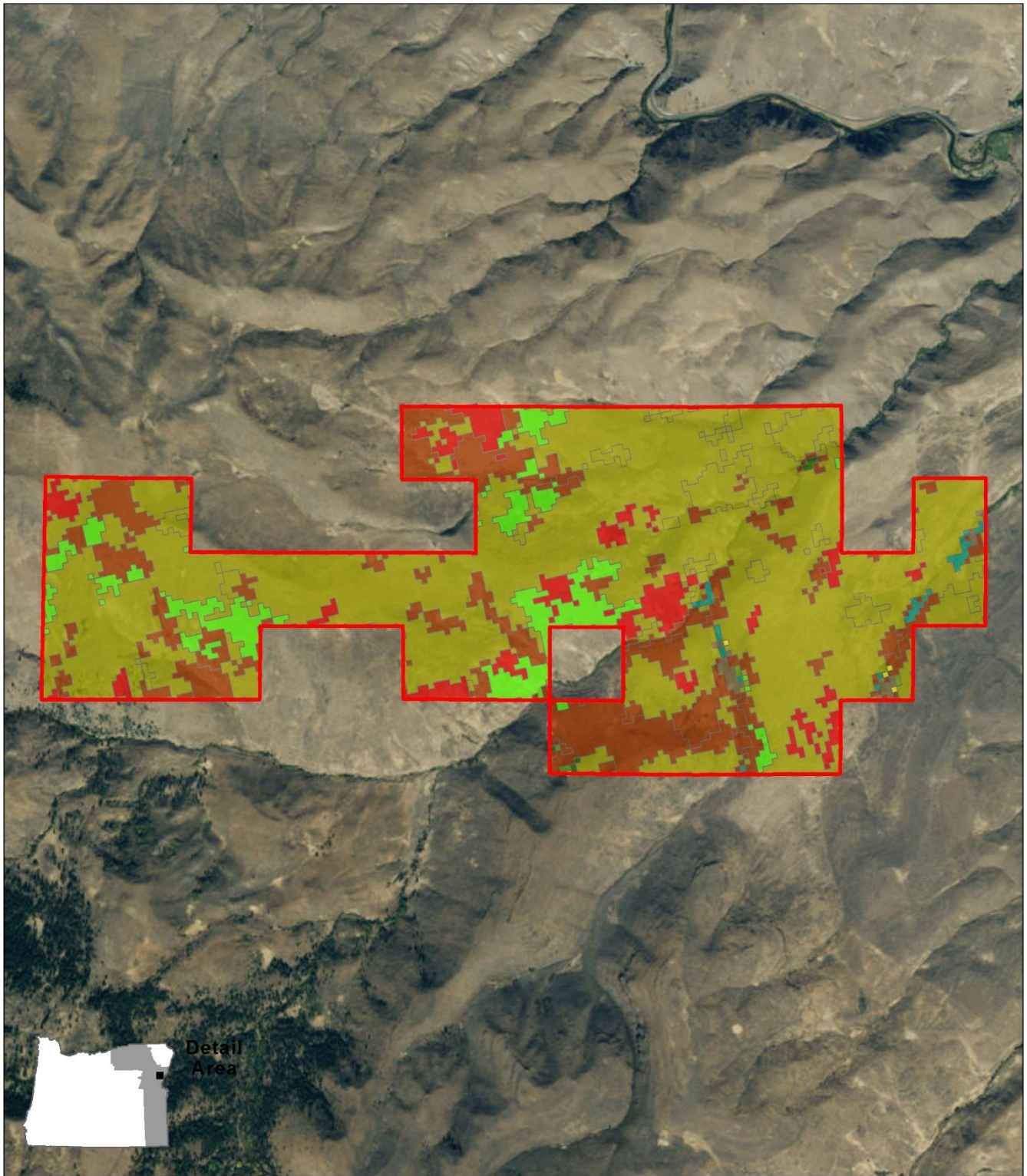


Figure 1. Upper Timber Ownership and Water



- | | | | |
|--|---|---|--|
| <u>Mitigation Features</u> | | ■ Introduced Upland Vegetation | ■ Shrub-Steppe without Big Sage |
| Upper Timber | ■ Ponderosa Pine | ■ Rocky Mountain Aspen | ■ Mixed Grand Fir/Douglas Fir |
| <u>Habitat Type</u> | | ■ Agriculture | ■ Shrub-Steppe with Big Sage |
| ■ Forested Wetland | ■ Native Grasslands | | |

Figure 2. Upper Timber Habitat Types

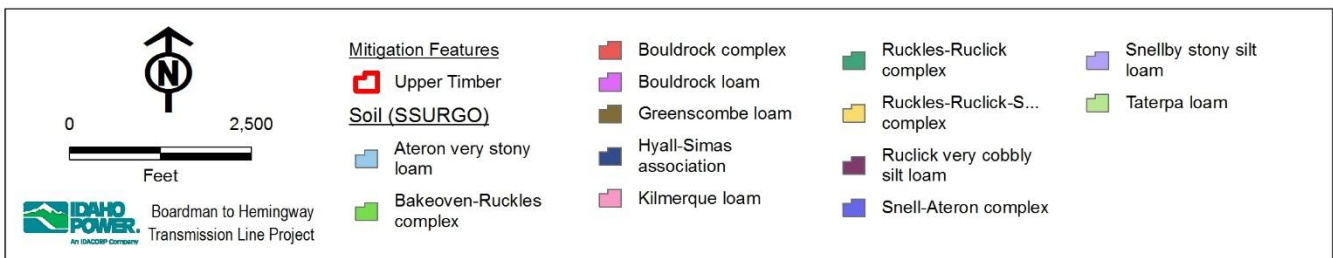
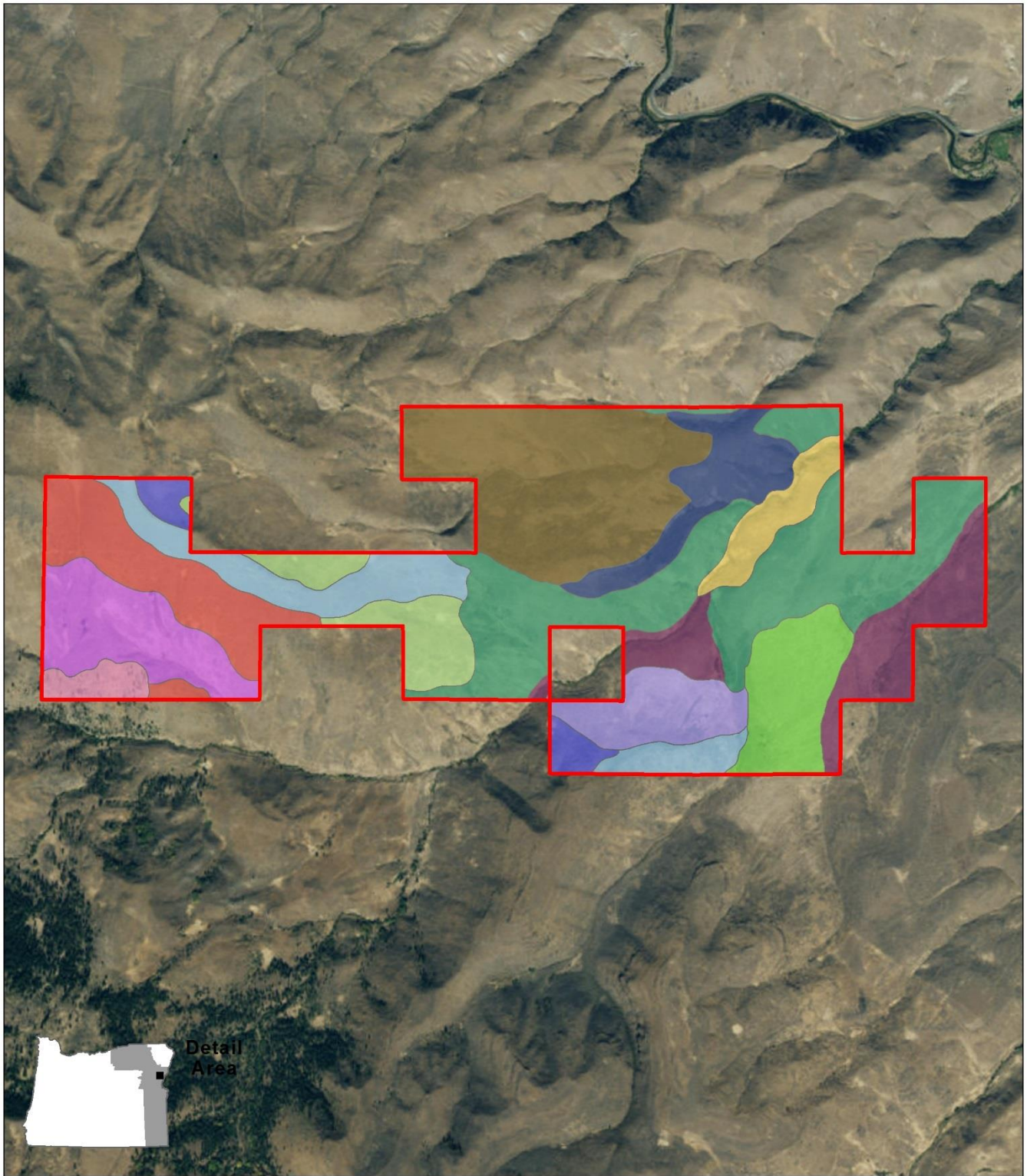


Figure 3. Upper Timber Soil Types