Attachment S-9

Draft Historic Properties Management Plan (Inadvertent Discovery Plan)

ATTACHMENT S-9
HISTORIC PROPERTIES MANAGEMENT PLAN (WITH INADVERTENT DISCOVERY PLAN)

BOARDMAN TO HEMINGWAY TRANSMISSION LINE PROJECT HISTORIC PROPERTIES MANAGEMENT PLAN FOR OREGON DEPARTMENT OF ENERGY COMPLIANCE

SHPO Case #: 08-2232

Prepared by:

Idaho Power Company
1221 West Idaho Street
Boise, ID 83702

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APPENDICES

ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	area of potential effect
ASC	Application for Site Certificate
BLM	Bureau of Land Management
CCEM	Construction Contractor's Environmental Manager
CIC	Compliance Inspection Contractor
CRM	Cultural Resources Monitor
CRS	Cultural Resources Specialist
CRT	Cultural Resource Team
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
EFSC	Energy Facility Siting Council
HPMP	Historic Properties Management Plan
HPRCSIT	Historic Properties of Religious and Cultural Significance to Indian Tribes
IDP	Inadvertent Discovery Plan
ILS	Intensive Level Survey
IPC	Idaho Power Company
kV	kilovolt
LCIS	Legislative Commission on Indian Services
MP	Monitoring Plan
MPDF	Multiple Property Documentation Form
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NHT	National Historic Trail
NPS	National Park Service
NRHP	National Register of Historic Places
O&M	operation and maintenance
OAR	Oregon Administrative Rules
ODOE	Oregon Department of Energy
ORS	Oregon Revised Statute
PA	Programmatic Agreement
Project	Boardman to Hemingway Transmission Line Project
pASC	Preliminary Application for Site Certificate
RLS	Reconnaissance Level Survey
ROW	right-of-way
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
U.S.C.	United States Code
USFS	U.S. Department of Agriculture Forest Service
VAHP	Visual Assessment of Historic Properties

DEFINITIONS

Aboveground resource: A type of cultural resource or feature with aboveground elements that has the potential to be directly or indirectly affected by the Project which includes cairns, rock alignments, shelters, and other buildings, structures, districts, objects, and sites potentially eligible for listing on the NRHP under Criterion A, B, C, or D. Also referred to in Oregon as a historic site.

Analysis area: The overall area examined for impacts by the Project in Exhibit S. Includes subset analysis areas of the direct analysis area and the Visual Assessment analysis area.

Archaeological site: A type of cultural resource consisting of a concentration of a minimum of 10 artifacts within the ground or in ruins or a feature (Oregon State Historic Preservation Office [SHPO] 2013a). A geographic locality in Oregon, including but not limited to submerged and submersible lands and the bed of the sea within the state's jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with each other or biotic or geological remains or deposits (ORS 358.905(1)(c)).

Archaeological object: A type of cultural resource consisting of fewer than 10 artifacts. Also referred to as an isolated find (Oregon SHPO 2013a). It is part of the physical record of an indigenous or other culture found in the state or waters of the state and consists of material remains of past human life or activity that are of archaeological significance (ORS 358.905(1)(a)).

Burial: Any natural or prepared physical location whether originally below, on, or above the surface of the earth, into which, as a part of a death rite or death ceremony of a culture, human remains were deposited (ORS 358.905(1)(e)).

Construction footprint: The area within the Project Site Boundary that will be directly impacted by the Project through ground disturbance during construction.

Cultural resource: Any place where material evidence exists about the human past. Generally, 50 years or older. Physical features, both natural and human made, associated with human activity. These would include sites, structures, and objects representing events in history, architecture, or human development. Cultural resources are unique and non-renewable resources (Thomas 1998).

Cultural site boundary: The extent of a cultural resource as identified by field surveys. Typically defined as the extent of cultural materials (surface and subsurface).

Direct analysis area: The portion of the analysis area examined for direct impacts by the Project. Equivalent to the Project Site Boundary.

Funerary objects: Any artifacts or objects that, as part of a death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later (ORS 358.905(1)(f)).

Historic Properties of Religious and Cultural Significance to Indian Tribes (HPRCSIT): A type of cultural resource whose significance is derived from the role it plays in an Indian Tribe's historically rooted beliefs, customs, and practices and that may be located on ancestral, aboriginal, or ceded lands of the Tribe. Also referred to as a sacred site. See also Section 101(d)(6)(A) of the NHPA and Advisory Council on Historic Preservation (ACHP) (2008).

Historic property: A type of cultural resource consisting of any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the NRHP, including artifacts, records, and remains related to and located within such a property or resource.

Historic site: A type of cultural resource inclusive of historic buildings, structures, sites, districts, and objects that would be included in the SHPO's online Historic Sites Database.

Human remains: The physical remains of a human body, including, but not limited to, bones, teeth, hair, ashes or mummified or otherwise preserved soft tissues of an individual (ORS 358.905(1)(g)).

Indian tribe: Any tribe of Indians recognized by the Secretary of the Interior or listed in the Klamath Termination Act, 25 United States Code [U.S.C.] 3564 et seq., or listed in the Western Oregon Indian Termination Act, 25 U.S.C. 3691 et seq., if the traditional cultural area of the tribe includes Oregon lands (ORS 97.740(4) [incorporated by reference in ORS 358.905(1)(d)]).

Object of cultural patrimony: An object having ongoing historical, traditional or cultural importance central to the native Indian group or culture itself, rather than property owned by an individual native Indian, and which, therefore, cannot be alienated, appropriated, or conveyed by an individual regardless of whether or not the individual is a member of the Indian tribe. The object shall have been considered inalienable by the native Indian group at the time the object was separated from such group. The term does not include unassociated arrowheads, baskets, or stone tools or portions of arrowheads, baskets, or stone tools (ORS 358.905(1)(h)(A); ORS 358.905(1)(h)(B)).

Operation footprint: The area within the Project Site Boundary that will be directly impacted by the Project during its lifetime of operation.

Professional Archaeologist: A person who has extensive formal training and experience in systematic, scientific archaeology (ORS 97.740(6)).

Project Site Boundary: The perimeter of the site of the proposed energy facility and encompassing all of its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant (OAR 345-001-0010(55)).

Sacred object: An archaeological object or other object that: (A) is demonstrably revered by any ethnic group, religious group or Indian tribe as holy; (B) is used in connection with the religious or spiritual service or worship of a deity or spirit power; or (C) was or is needed by traditional native Indian religious leaders for the practice of traditional native Indian religion (ORS 358.905(1)(k)).

Study Area (2-mile, 5-mile): The area examined during pre-survey cultural resource-related research efforts, including the records search and literature review. A 2-mile buffer and a 5-mile buffer on the Proposed Route and alternative routes established two subsets of the Study Area for the pedestrian cultural resources survey and the Visual Assessment of Historic Properties Study Plan (VAHP), respectively.

Traditional Cultural Property (TCP): A type of historic property that is eligible for inclusion on the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998).

Visual Assessment analysis area: The portion of the analysis area examined for indirect impacts by the Project. The area assessed for indirect effects that extends 5 miles or to the visual horizon, whichever is closer, on either side of the centerline of the Proposed Route and alternative routes.

1.0 INTRODUCTION

This Historic Properties Management Plan (HPMP) provides an overview of the measures that will be implemented to address the avoidance, minimization of impacts, and mitigation of impacts to cultural resources as a result of Idaho Power Company's (IPC) Boardman to Hemingway Transmission Line Project (Project). It provides an approach regarding management of known cultural resources within the analysis area, future surveys unsurveyed portions for the analysis area, a monitoring plan for during construction, and an inadvertent discovery plan for unanticipated discoveries during construction. . When a final route is chosen, resource-specific treatment plans incorporating these general measures will be developed and implemented prior to construction activities, as outlined in this HPMP. Implementation of the HPMP is anticipated to occur in first and second quarters of 2022. The HPMP addresses cultural resources for the purposes of meeting the Oregon Energy Facility Siting Council's (EFSC or Council) siting standards. These resources include historic properties listed on or likely to be listed on the National Register of Historic Places (NRHP) (NRHP-eligible and including sites determined significant in writing by a Native American tribe), archaeological sites on public or private land, and archaeological objects on private land within the Project Site Boundary described in Exhibit S of the Project's Application for Site Certification (ASC) submitted to the Oregon Department of Energy (ODOE). Such resources could be significantly impacted during construction, reclamation of temporary disturbance areas, or operation and maintenance (O&M). The HPMP demonstrates that the Project will comply with EFSC's Historic, Cultural, and Archaeological Resources Standard (Oregon Administrative Rules [OAR] 345-022-0090) by showing that the construction and operation of the Project, taking into account mitigation, are not likely to result in significant impacts to the cultural resources described above and considered in the EFSC standard. The Energy Facility Siting Council (EFSC or Council) incorporated revisions and additions provided by the applicant in its Attachment S-9: HPMP Errata. Resource inventory tables, with anticipated impacts and mitigation measures are included in Appendix A.1: Resource Inventory Tables with Management Recommendations for Resources Potentially Protected under OAR 345-022-0090, which must be updated and submitted to the Oregon Department of Energy (ODOE or Department) prior to construction for review and approval.

The Bureau of Land Management (BLM) is the lead agency overseeing the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) processes for the Project. As part of compliance with those regulations, a Programmatic Agreement (PA) (Attachment S-7 of the ASC) has been prepared for this Project. A HPMP will be prepared by the BLM in consultation with the Idaho and Oregon State Historic Preservation Offices (SHPO), Advisory Council on Historic Preservation (ACHP) and the parties to the PA, including ODOE (PA Sections IV, B and VII, A–H). However, it is anticipated that the HPMPs will be incorporated into a single HPMP required under the Project's Programmatic Agreement for compliance with Section 106 of the National Historic Preservation Act. This HPMP is specific to the Oregon EFSC and is intended to maintain compliance with the EFSC standard as well as align with the evaluation, determinations, and mitigation that will would be included in the HPMP required by the PA. It is anticipated to be open to revision based on continuing consultation with other involved agencies and tribes under the PA until construction begins. A framework for the BLM's HPMP has been drafted by that agency, but a complete HPMP has not yet been completed. The BLM framework is included as Appendix A.2 of this document. Therefore, this HPMP was prepared specifically for ODOE and to comply with the EFSC certification process. It shall be updated and provided to the Department following completion of the BLM's Section 106 compliance review..

Under ORS 469.370(13), the Council shall conduct its site certificate review, to the maximum extent feasible, in a manner that is consistent with and does not duplicate the federal agency review. As part of the Section 106 compliance, the BLM issues determinations of eligibility for

eligible resources or determines that a resource is not eligible for listing on the NRHP. Upon the BLM's final determinations, cultural resources may remain with the designation of "unevaluated" if there are no potential impacts from the proposed facility. A resource designation of unevaluated indicates that the resource may have been investigated, however, additional investigations or evaluations are recommended so the resource is assumed to be likely eligible for listing on the NRHP. The Department, in consultation with the Oregon State Historic Preservation Officer (SHPO) and the applicant, determined that recommendations of "not eligible" will be treated as "unevaluated" for purposes of the Council's review. A resource designation of "unevaluated" means that it is treated as likely eligible for listing on the NRHP and the impact analysis and mitigation (if any) is evaluated based on that designation. Applicant recommendations will be completed, and the BLM and Navy will verify final eligibility determinations as part of Section 106 compliance. The final eligibility determinations will be provided to the Department and Council, following this HPMP.

Information concerning the location of archaeological sites or objects are exempt from public disclosure under Oregon Revised Statute (ORS) 192.501(11).[1] Therefore, such information, including archaeological survey reports, is provided confidentially to the Oregon Department of Energy (ODOE).

1.1 Purposes of HPMP

The purposes of this HPMP are to:

- Provide a summary and overview of the Project and the Site Certificate Project Site Boundary, including a discussion of proposed facilities, location of facilities, and project location maps;
- Provide a summary of state laws and regulations that define the research, evaluation, and reporting procedures to be followed for the Project under the EFSC certification process;
- Provide a brief summary of cultural resources studies conducted for the Project and a review of the findings of those studies;

[1] OAR 345-021-0010(s) provides that "information concerning the location of archaeological sites or objects may be exempt from public disclosure under ORS 192.502(4) or ORS 192.501(11)," and that the applicant "shall submit such information separately, clearly marked as 'confidential,' and shall request that the Department and the ~~Council keep the information confidential to the extent permitted by law~~.

- Summarize methods for determination and documentation of effects that have been used for the Project and will be used in the event of inadvertent discoveries;
- Identify resources potentially protected under OAR 345-022-0090(1);
    - a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;
    - (b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and
    - (c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).
- Propose mitigation measures based on the requirements in Table HCA-4b for NHT/Oregon Trail resources in Table HCA-3 included in Appendix A.1: Resource Inventory Tables with Management Recommendations for Resources Potentially Protected under OAR 345-022-0090 attached to this HPMP.
- Document final eligibility determinations for newly identified resources and previously inventoried resources, with supporting documentation (final Cultural Resources Technical Report, ILS, RLS), from the lead federal agencies;
    - Based on the final eligibility determinations, identify which resources qualify for protections under OAR 345-022-0090(1)(a) through (c);
    - Submit updated tables of resources inventoried and evaluated as identified in this HPMP.
- Identification of resources not protected under OAR 345-022-0090(1)(a) due to a final eligibility determination of "not eligible for listing on the National Register of Historic Places (NRHP)," yet may qualify for protections under OAR 345-022-0090(1)(b) or (c). The HPMP shall also include the following information for resources on private and public lands under OAR 345-022-0090(1)(b) and (c) for Department approval, in consultation with SHPO:
    - Applicant recommendations and supporting documentation to demonstrate if the resource on private or public lands qualifies as an archaeological object or site under ORS 358.905(1)(a) and ORS 358.905(1)(c).
    - A proposed site-specific impact assessment including avoidance, minimization and/or mitigation measures for the resource.
- Final site-specific impact (direct and indirect) avoidance measures and an impact assessment for a phase or segment of the facility, or specific facility component, including avoidance measures in Historic, Cultural, and Archaeological Resources Condition 1;[2]
- Final site-specific impact (direct and indirect) minimization measures based on final design of a phase or segment of the facility, or specific facility component;
- Final site-specific impact (direct and indirect) mitigation measures based on final design of a phase or segment of the facility, or specific facility component;
- Provide a revised High Probability Areas Assessment;
- Document the measures that IPC has already taken or will take to avoid and minimize impacts to cultural resources considered by EFSC's standards
- Document IPC's goals for managing and protecting resources subject to EFSC standards within the analysis area;

[2] Historic, Cultural, and Archaeological Resources Condition 1: During final design and construction of the facility, the certificate holder shall design and locate facility components to avoid direct impacts to Oregon Trail/National Historic Trail resources consistent with Attachment S-9 Historic Properties Management Plan (HPMP) of the Final Order ~~on the ASC~~.

- Provide management guidelines for categories of significant impacts to cultural resources considered by EFSC's standards;
- Present a Monitoring Plan (Section 7) which includes guidelines for how avoidance and minimization measures will be implemented during construction, reclamation, and O&M; how the effectiveness of these methods will be documented; procedures for halting construction, including agency notification in the event of unanticipated discoveries during construction; and under what circumstances cultural resources monitors will be present;
- Present an Inadvertent Discovery Plan (IDP) (Section 8), which specifies the procedures to follow in the event that cultural resources are found during construction, reclamation, and O&M, which were not detected during surveys conducted prior to ground-disturbing activities; and
- Be implemented and adhered to during construction, reclamation, and O&M, per OAR 345-021-0010(1)(s)(iii)(E) and OAR 345-022-0090(1).[1]

The intent of this HPMP is to identify final resource eligibility based on the Section 106 compliance review and provide updated information to the Department of resources protected under OAR 345-022-0090(1) and to specify the terms of avoidance and monitoring, and mitigation for impacts to historic, cultural, and archeological resources.

1.2 Regulatory Context

The following section briefly discusses the federal and state laws and regulations applicable to the Project in regard to cultural resources.

1.2.1 EFSC Administrative Rules

1.2.1.1 Site Certificate Application Requirements

OAR 345-021-0010(1)(s) provides that IPC must include information in Exhibit S or confidential submissions of the following information regarding historic, cultural, and archeological resources:

> *(A) Historic and cultural resources within the analysis area that have been listed, or would likely be eligible for listing, on the National Register of Historic Places.*
>
> *(B) For private lands, archaeological objects, as defined in ORS 358.905(1)(a), and archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.*
>
> *(C) For public lands, archaeological sites, as defined in ORS 358.905(1)(c), within the analysis area.*
>
> *(D) The significant potential impacts, if any, of the construction, operation and retirement of the proposed facility on the resources described in paragraphs (A), (B) and (C) and a plan for protection of those resources that includes at least the following:*

[1] Subsections (2) and (3) of the Historic, Cultural, and Archaeological Resources Standard apply to power generation facilities and special criteria facilities, respectively. Because the Project does not include a power generation or special criteria facility, subsections (2) and (3) of OAR 345-022-0090 do not apply to the Project.

> *(i) A description of any discovery measures, such as surveys, inventories, and limited subsurface testing work, recommended by the State Historic Preservation Officer or the National Park Service of the U.S. Department of Interior for the purpose of locating, identifying and assessing the significance of resources listed in paragraphs (A), (B) and (C).*
>
> *(ii) The results of the discovery measures described in subparagraph (i), together with an explanation by the applicant of any variations from the survey, inventory, or testing recommended.*
>
> *(iii) A list of measures to prevent destruction of the resources identified during surveys, inventories and subsurface testing referred to in subparagraph (i) or discovered during construction.*
>
> *(E) The applicant's proposed monitoring program, if any, for impacts to historic, cultural and archaeological resources during construction and operation of the proposed facility.*

1.2.1.2 General Standards for Siting Facilities

Subsection (1) of the Historic, Cultural, and Archaeological Resources Standard at OAR 345-022-0090(1)[2] provides that IPC must demonstrate that the construction and operation of the Project, taking into account mitigation, are not likely to result in significant adverse impacts to:

> *(a) Historic, cultural or archaeological resources that have been listed on, or would likely be listed on the National Register of Historic Places;*
>
> *(b) For a facility on private land, archaeological objects, as defined in ORS 358.905(1)(a), or archaeological sites, as defined in ORS 358.905(1)(c); and*
>
> *(c) For a facility on public land, archaeological sites, as defined in ORS 358.905(1)(c).*

1.2.2 Applicable Oregon Revised Statutes

The following Oregon Revised Statutes are applicable to the Project, with respect to cultural resources.

1.2.2.1 Indian Graves and Protected Objects

Oregon Revised Statutes (ORS) 97.745 provides for protection of Indian graves and protected objects, including cairns, burials, human remains, funerary objects, sacred objects, and objects of cultural patrimony of any native Indian. It describes acts prohibited in relation to the above resources, the applicability of the statute, and the notification procedures for when suspected Indian human remains are discovered. The statute states:

> *(1) Except as provided in ORS 97.750, no person shall willfully remove, mutilate, deface, injure or destroy any cairn, burial, human remains, funerary object, sacred object or object of cultural patrimony of any native Indian. Persons disturbing native Indian cairns or burials through inadvertence, including by construction, mining, logging or agricultural activity, shall at their own expense reinter the human remains or funerary object under the supervision of the appropriate Indian tribe.*
>
> *(2) Except as authorized by the appropriate Indian tribe, no person shall:*

[2] Subsections (2) and (3) of the Historic, Cultural, and Archaeological Resources Standard apply to power generation facilities and special criteria facilities, respectively. Because the Project does not include a power generation or special criteria facility, subsections (2) and (3) of OAR 345-022-0090 do not apply to the Project.

(a) Possess any native Indian artifacts, human remains or funerary object having been taken from a native Indian cairn or burial in a manner other than that authorized under ORS 97.750.

(b) Publicly display or exhibit any native Indian human remains, funerary object, sacred object or object of cultural patrimony.

(c) Sell any native Indian artifacts, human remains or funerary object having been taken from a native Indian cairn or burial or sell any sacred object or object of cultural patrimony.

(3) This section does not apply to:

(a) The possession or sale of native Indian artifacts discovered in or taken from locations other than native Indian cairns or burials; or

(b) Actions taken in the performance of official law enforcement duties.

(4) Any discovered human remains suspected to be native Indian shall be reported to the state police, the State Historic Preservation Officer, the appropriate Indian tribe and the Commission on Indian Services.

1.2.2.2 Archaeological Objects and Sites

ORS 358.920 identifies prohibited acts on public and private lands in Oregon, relative to archaeological resources. It states that disturbances to archaeological sites or objects on public or private lands must be completed under a permit issued under ORS 390.235 and provides direction for disposition of those archaeological materials and any human remains and associated funerary objects. The section is not applicable to the disturbance of Native American cairns, which is covered by the provisions of ORS 97.740 to 97.760. The statute states:

(1)(a) A person may not excavate, injure, destroy or alter an archaeological site or object or remove an archaeological object located on public or private lands in Oregon unless that activity is authorized by a permit issued under ORS 390.235.

(b) Collection of an arrowhead from the surface of public or private land is permitted if collection can be accomplished without the use of any tool.

(c) It is prima facie evidence of a violation of this section if:

(A) A person possesses the objects described in paragraph (a) of this subsection;

(B) A person possesses any tool that could be used to remove such objects from the ground; and

(C) A person does not possess a permit required under ORS 390.235.

(2) A person may not sell, purchase, trade, barter or exchange or offer to sell, purchase, trade, barter or exchange any archaeological object that has been removed from an archaeological site on public land or obtained from private land within the State of Oregon without the written permission of the landowner.

(3)(a) A person may not sell, trade, barter or exchange or offer to sell, trade, barter or exchange any archaeological object unless the person furnishes the purchaser a certificate of origin to accompany the object that is being sold or offered. The certificate shall include:

(A) For objects obtained from public land:

(i) A statement that the object was originally acquired before October 15, 1983.

(ii) The location from which the object was obtained and a brief cumulative description of how the object had come into the possession of the current owner in accordance with the provisions of ORS 358.905 to 358.961 and 390.235.

(iii) A statement that the object is not human remains, a funerary object, sacred object or object of cultural patrimony.

(B) For objects obtained from private land:

(i) A statement that the object is not human remains, a funerary object, sacred object or object of cultural patrimony.

(ii) A copy of the written permission of the landowner to acquire the object.

(b) As used in this subsection, "certificate of origin" means a signed and notarized statement that meets the requirements of paragraph (a) of this subsection.

(4)(a) If the archaeological object was acquired after October 15, 1983, from public lands, any object not described in paragraph (b) of this subsection is under the stewardship of the state and shall be delivered to the Oregon State Museum of Anthropology. The museum shall work with the appropriate Indian tribe and other interested parties to develop appropriate curatorial facilities for artifacts and other material records, photographs and documents relating to the cultural or historic properties in this state. Generally, artifacts shall be curated as close to the community of their origin as their proper care allows. If it is not feasible to curate artifacts within this state, the museum may after consultation with the appropriate Indian tribe or tribes enter into agreements with organizations outside this state to provide curatorial services; and

(b) If the object is human remains, a funerary object, a sacred object or an object of cultural patrimony, it shall be dealt with according to ORS 97.740, 97.745 and 97.750.

(5) A person may not excavate an archaeological site on privately owned property unless that person has the property owner's written permission.

(6) If human remains are encountered during excavations of an archaeological site on privately owned property, the person shall stop all excavations and report the find to the landowner, the state police, the State Historic Preservation Officer and the Commission on Indian Services. All funerary objects relating to the burial shall be delivered as required by ORS 358.940.

(7) This section does not apply to a person who disturbs an Indian cairn or burial. Any person who disturbs an Indian cairn or burial for any reason shall comply with the provisions of ORS 97.740 to 97.760.

(8) Violation of the provisions of this section is a Class B misdemeanor.

1.2.2.3 Archaeological Sites and Historical Material

ORS 390.235 sets forth the permit requirements and rules for excavation or removal of archaeological or historical materials as follows:

> *(1)(a) A person may not excavate or alter an archaeological site on public lands, make an exploratory excavation on public lands to determine the presence of an archaeological site or remove from public lands any material of an archaeological, historical, prehistorical or anthropological nature without first obtaining a permit issued by the State Parks and Recreation Department.*
>
> > *(b) If a person who obtains a permit under this section intends to curate or arrange for alternate curation of an archaeological object that is uncovered during an archaeological investigation, the person must submit evidence to the State Historic Preservation Officer that the Oregon State Museum of Anthropology and the appropriate Indian tribe have approved the applicant's curatorial facilities.*
> >
> > *(c) No permit shall be effective without the approval of the state agency or local governing body charged with management of the public land on which the excavation is to be made, and without the approval of the appropriate Indian tribe.*
> >
> > *(d) The State Parks and Recreation Director, with the advice of the Oregon Indian tribes and Executive Officer of the Commission on Indian Services, shall adopt rules governing the issuance of permits.*
> >
> > *(e) Disputes under paragraphs (b) and (c) of this subsection shall be resolved in accordance with ORS 390.240.*
> >
> > *(f) Before issuing a permit, the State Parks and Recreation Director shall consult with:*
> >
> > > *(A) The landowning or land managing agency; and*
> > >
> > > *(B) If the archaeological site in question is associated with a prehistoric or historic native Indian culture:*
> > >
> > > > *(i) The Commission on Indian Services; and*
> > > >
> > > > *(ii) The most appropriate Indian tribe.*
>
> *(2) The State Parks and Recreation Department may issue a permit under subsection (1) of this section under the following circumstances:*
>
> > *(a) To a person conducting an excavation, examination or gathering of such material for the benefit of a recognized scientific or educational institution with a view to promoting the knowledge of archaeology or anthropology;*
> >
> > *(b) To a qualified archaeologist to salvage such material from unavoidable destruction; or*
> >
> > *(c) To a qualified archaeologist sponsored by a recognized institution of higher learning, private firm or an Indian tribe as defined in ORS 97.740.*
>
> *(3) Any archaeological materials, with the exception of Indian human remains, funerary objects, sacred objects and objects of cultural patrimony, recovered by a person granted*

a permit under subsection (2) of this section shall be under the stewardship of the State of Oregon to be curated by the Oregon State Museum of Anthropology unless:

(a) The Oregon State Museum of Anthropology with the approval from the appropriate Indian tribe approves the alternate curatorial facilities selected by the permittee;

(b) The materials are made available for nondestructive research by scholars; and

(c)(A) The material is retained by a recognized scientific, educational or Indian tribal institution for whose benefit a permit was issued under subsection (2)(a) of this section;

(B) The governing board of a public university listed in ORS 352.002, with the concurrence of the appropriate Indian tribe, grants approval for material to be curated by an educational facility other than the institution that collected the material pursuant to a permit issued under subsection (2)(a) of this section; or

(C) The sponsoring institution or firm under subsection (2)(c) of this section furnishes the Oregon State Museum of Anthropology with a complete catalog of the material within six months after the material is collected.

(4) The Oregon State Museum of Anthropology shall have the authority to transfer permanent possessory rights in subject material to an appropriate Indian tribe.

(5) Except for sites containing human remains, funerary objects and objects of cultural patrimony as defined in ORS 358.905, or objects associated with a prehistoric Indian tribal culture, the permit required by subsection (1) of this section or by ORS 358.920 shall not be required for forestry operations on private lands for which notice has been filed with the State Forester under ORS 527.670.

(6) As used in this section:

(a) "Private firm" means any legal entity that:

(A) Has as a member of its staff a qualified archaeologist; or

(B) Contracts with a qualified archaeologist who acts as a consultant to the entity and provides the entity with archaeological expertise.

(b) "Qualified archaeologist" means a person who has the following qualifications:

(A) A post-graduate degree in archaeology, anthropology, history, classics or other germane discipline with a specialization in archaeology, or a documented equivalency of such a degree;

(B) Twelve weeks of supervised experience in basic archaeological field research, including both survey and excavation and four weeks of laboratory analysis or curating; and

(C) Has designed and executed an archaeological study, as evidenced by a Master of Arts or Master of Science thesis, or report equivalent in scope and quality, dealing with archaeological field research.

(7) Violation of the provisions of subsection (1)(a) of this section is a Class B misdemeanor.

Any subsurface archaeological excavation (as applicable) on non-federal public lands, inclusive of any state, county, or municipal lands, will be conducted under a State of Oregon Archaeological Excavation Permit per ORS 390.235(1)(a) and OAR 736-051-0080 to -0090.

1.2.3 Additional Regulatory Context

A substantial portion of the Project is located on private lands (69 percent or 186 miles) with little State lands involved (0.4 percent or 1.1 miles). However, the Project also crosses significant stretches of federally-managed land (24 percent or 65.4 miles across BLM-managed land; 0.2 percent or 0.5-mile across Bureau of Reclamation-managed lands; 4 percent or 10.5 miles across Department of Defense/U.S. Army Corps of Engineers-managed lands; and 3 percent or 7.1 miles on National Forest System lands). BLM is the lead federal agency responsible for completing the NEPA environmental analysis and for compliance with Section 106 of the NHPA.

1.2.3.1 Section 106 Cultural Resources Working Group and Consulting Parties

ODOE is a participant in the BLM's Cultural Resources Working Group for the Project. Consistent with Section 106, the BLM has convened a cultural resources working group, comprising representatives of the Oregon State Office and Vale District Office of the BLM and its contractor; U.S. Department of Agriculture Forest Service (USFS); Bonneville Power Administration; the ACHP; Oregon and Idaho SHPOs; ODOE; Confederated Tribes of the Umatilla Indian Reservation (CTUIR); CTUIR Tribal Historic Preservation Officer (THPO); Shoshone Paiute Tribe; Shoshone Bannock Tribe; Malheur, Baker, Union, Umatilla, and Morrow Counties; Oregon Commission on Historic Trails; Oregon-California Trails Association; Stop Idaho Power; and IPC. In addition to the working group, 32 consulting parties have been identified for the Project, including federal, state, and local agencies; IPC; tribes; historic preservation groups; and, public community groups and individuals with an interest in the Project. These are listed below:

- BLM
- U.S. Army Corps of Engineers
- U.S. Department of the Navy, Naval Weapons Training Facility Boardman
- U.S. Forest Service, Regional Office
- U.S. National Park Service (NPS), Ice Age Floods National Geologic Trail
- NPS, Pacific Northwest Region
- Idaho SHPO
- Washington SHPO
- Burns Paiute Tribe
- Shoshone-Bannock Tribes of Fort Hall
- Baker County
- Union County
- National Trust for Historic Preservation
- Oregon Historic Trails Advisory Council
- Bonneville Power Administration
- Bureau of Reclamation
- U.S. Fish and Wildlife Service, Umatilla National Wildlife Refuge
- USFS, Wallowa-Whitman National Forest
- NPS National Lewis and Clark Trail Offices
- ACHP
- Oregon SHPO
- ODOE[3]
- CTUIR
- Shoshone-Paiute Tribes of the Duck Valley Indian Reservation
- Morrow County
- Lewis and Clark Trail Heritage Foundation
- Oregon-California Trails Association
- City of Baker City

[3] ODOE's involvement in the Section 106 Cultural Resources Working Group was intended to facilitate the use of the federal Section 106 for compliance with ODOE's state regulatory requirements.

- IPC
- Halt Idaho Power
- Private Individual
- Poison Creek Neighborhood Group

To date, the Cultural Resources Working Group has provided an open forum for identifying and resolving issues related to cultural resources. Through in-person meetings and conference calls, the cultural resources working group defined the size and boundaries of the area of potential effect for the Project under Section 106; reviewed, commented upon, and/or approved cultural resources and viewshed assessment study plans; and prepared a PA.

1.2.3.2 Programmatic Agreement

A PA for managing historic properties that may be affected by the Project was prepared by BLM, acting as the designated lead federal agency and in consultation with the Section 106 Cultural Resources Working Group. The intent and applicability of the PA is for compliance with the NHPA and Section 106; however, studies and consultations completed under the direction of the PA may support the EFSC permitting process and compliance under OAR 345-022-0090(1).

The PA allows for identification of cultural resources as well as NRHP eligibility evaluation and effect determinations on the Proposed Route and all alternative routes considered during the permitting process. The PA allows for the final determinations of Project effects to historic properties (including NRHP-listed, -eligible, and unevaluated resources) and the resolution of adverse effects under Section 106 to be outlined in a HPMP. Although the HPMP required by the PA will be submitted by BLM for review by all PA parties, including ODOE, it is anticipated to be specific to compliance with Section 106 of the NHPA. In order to comply with the EFSC permitting process, this ODOE-specific HPMP has been drafted. Although the HPMP dictated by the PA has not been completed as of the drafting of this document, approaches to identification and effect determinations are expected to be similar between the two HPMPs; however, this ODOE-specific HPMP also addresses archaeological resources and objects on private lands, regardless of NRHP-eligibility status. A framework of the BLM's anticipated Section 106 HPMP is included in Appendix A.2.

1.3 Organization of the HPMP

Section 1 of this HPMP provides an introduction to the document, describes its purpose, and provides a state regulatory context for the Project. Section 2 describes the Project and the Project's Site Boundary included in the Site Certificate. Section 3 outlines the sequence of Project-related tasks that will occur in order to avoid, minimize, or mitigate significant impacts on cultural resources considered under EFSC's siting standards for cultural resources. Section 4 summarizes the cultural resource studies completed for the Project and their results. Section 5 discusses the methods for determination of NRHP eligibility and other cultural resources considered under EFSC's siting standards and assessment of effects. Section 6 outlines IPC's proposed avoidance and mitigation plan for the Project, as pertains to cultural resources considered under EFSC's siting standards. Sections 7 and 8 provide a general Monitoring Plan and an IDP, respectively. Section 9 is a list of references cited in this HPMP.

2.0 PROJECT DESCRIPTION

This section provides a brief Project description and defines the Project's Site Boundary included in the site certificate. The Project Site Boundary guides what resources are considered in this HPMP.

2.1 Project Description

The Project consists of an approximately 296.6-mile-long single-circuit 500-kilovolt (kV) transmission line between Boardman, Oregon and the Hemingway Substation located near Melba, Idaho (Project). In the state of Oregon, the Project includes 270.8 miles of single-circuit 500-kV transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line along a new right-of-way (ROW). The proposed transmission line will be constructed on federal, state, and private land in portions of two states and six counties: Morrow, Umatilla, Union, Baker, and Malheur Counties, Oregon, and Owyhee County, Idaho. This HPMP is applicable to the 284 miles of transmission line and associated Project components within the state of Oregon.

The Project requires a site certificate from the EFSC, as well as approval from federal land management agencies (for portions of the project on federal land). IPC submitted a Notice of Intent to the ODOE on July 15, 2010, to file an ASC for the Project. On February 27, 2013, IPC submitted a preliminary ASC (pASC) to ODOE, and amended the application in May of 2013 to include BLM alternatives not previously included in the pASC. An amended Project Order was provided by the Council on December 22, 2014. If issued, the Site Certificate would authorize the construction of the transmission lines, a switching station near the Port of Morrow, Oregon, communication stations, related and supporting facilities, and temporary features.

2.2 Project Site Boundary

The Project Site Boundary includes the construction footprint and is the area within which the Project may be built. Although alternative transmission line routes and attendant roads and facilities are included in the Project Site Boundary, this HPMP will only be implemented at the Project components selected for construction. The Project Site Boundary includes the following facilities in Oregon:

- The Proposed Route, consisting of 270.8 miles of new 500-kV electric transmission line, removal of 12 miles of existing 69-kV transmission line, rebuild of 0.9 mile of a 230-kV transmission line, and rebuild of 1.1 miles of an existing 138-kV transmission line;
- Four alternatives that each could replace a portion of the Proposed Route, including the West of Bombing Range Road Alternative 1 (3.7 miles), West of Bombing Range Road Alternative 2 (3.7 miles), Morgan Lake Alternative (18.5 miles), and Double Mountain Alternative (7.4 miles);
- One proposed 20-acre station (Longhorn Station);
- Ten communication station sites of less than 0.25-acre each and two alternative communication station sites;
- Permanent access roads for the Proposed Route, including 206.3 miles of new roads and 223.2 of existing roads requiring substantial modification and for the Alternative Routes including 30.2 miles of new roads and 22.7 miles of existing roads requiring substantial modification; and
- Thirty temporary multi-use areas and 299 pulling and tensioning sites of which four will have light-duty fly yards within the pulling and tensioning sites.

2.3 Visual Assessment Area

In addition to the Project Site Boundary, this HPMP considers historic properties and other cultural resources within 5 miles of the Proposed Route centerline and with a view of the Project. “Other” cultural resources include non-historic properties with aboveground components (such as standing buildings, cairns, hunting blinds, etc.) or other qualities wherein the viewshed is a significant quality of the resource. The Visual Assessment area was determined through a Geographic Information System viewshed analysis of the Project features in the Project Site Boundary described above. Areas within 5 miles of the Proposed Route centerline and with a view of Project features were included in the Visual Assessment area as well as the Project Site Boundary.

3.0 SEQUENCE OF PROJECT-RELATED TASKS

There are a series of tasks that will be completed to ensure that cultural resources considered by EFSC site certificate standards are avoided or Project impacts to them minimized or mitigated to less than significant. These tasks are identified as those that must take place before construction, during construction, and after construction/during reclamation and O&M, as applicable.

3.1 Pre-Construction Tasks

Pre-construction tasks include the following:

- This HPMP will be completed by IPC and submitted to ODOE, SHPO, involved Native American tribes, and historic societies (such as Oregon-California Trails Association), as determined by ODOE, for review;
- IPC’s Cultural Resource Team (CRT) will be selected (see Section 7.1);
- IPC will provide the CRT and ODOE with maps and/or drawings of the Project final construction footprint and Visual Assessment area;
- The CRT will ensure avoidance measures (e.g., sensitive resource flagging, complete avoidance) are in place where needed (see Section 7.3);
- IPC and the CRT will resolve with SHPO NRHP-eligibility and project effects determinations for historic sites, archaeological sites, and archaeological objects within the analysis area (see Sections 5.1 and 5.2); and
- Required mitigation measures will be completed (as applicable).

In addition to the above tasks, IPC will develop and implement a cultural resource training program as part of the overall environmental training program for all Project staff (construction workers, supervisors, etc.) and those who will access the Project area. As part of the cultural resource training program, a local tribal representative(s) will be invited to participate in the environmental training to discuss or provide context from a tribal cultural perspective regarding the cultural resources within the Project Site Boundary and/or the Visual Assessment area, and how these resources have traditional religious and cultural importance to Native American tribes (as appropriate). The presentation will have the goal of ensuring the appropriate and respectful treatment of such resources within or near the Project or upon their inadvertent discovery. The training program will be prepared and presented at the pre-construction meeting by the CRT and the Native American Representative (as appropriate) and will include a discussion of the following:

- All applicable laws and penalties pertaining to cultural resources;
- A brief discussion of the prehistoric and historic regional context of the area, including local Native American beliefs, how those beliefs are related to cultural resources that

may be found in the area, and appropriate and respectful behavior regarding such resources;

- Types of prehistoric and historic deposits/artifacts found in the area and what they look like on the ground surface, partially buried, buried, and/or freshly exposed as a result of construction activities;
- Explanation of the responsibilities of workers during construction of the Project and during O&M regarding cultural resources;
- Instruction that Project workers will avoid identified sensitive areas within the Project footprint and halt construction or an O&M activity if a cultural resource is inadvertently discovered; and
- Review of this HPMP and the protocols and procedures that will be implemented during construction and O&M activities, such as applicable cultural resource laws, Project/construction personnel, CRT staff and Native American monitor roles and responsibilities, monitoring activities and signage, inadvertent and human remain discovery procedures, stop work procedures, etc.

Presentation of the cultural resource training to Project workers will be a one-time in-person presentation by the CRT lead in coordination with the Native American Tribal Representative(s). Thereafter, the Project's construction contractor's environmental compliance manager can provide the training to additional new staff/personnel in the form of a training video. The training video will include visual examples of environmentally sensitive areas (examples of exclusion zone signage or flagging) and images/footage of prehistoric and historic artifacts and/or deposits that are demonstrative of cultural resource finds in the area and evocative of the sensitive nature of these resources. Staff receiving the training will be required to acknowledge the training by signing a training log which will be maintained by the on-site Project compliance manager, and each worker will receive a training sticker that must be displayed and easily visible on their hard hat.

3.2 Construction Phase Tasks

Construction phase tasks to be completed by the CRT include, but are not limited to, the following:

- Provide ongoing environmental training for newly hired construction staff. The training may be a previously recorded video and may not require additional CRT support, unless requested. The CRT will ensure on-site construction personnel are in compliance and have the appropriate required training sticker displayed on their hard hats;
- Construction monitoring as described in Section 7 of this plan; and
- Conduct testing or data recovery or other types of mitigation for any inadvertent discoveries as described in Section 7 of this plan, as necessary.

Additional construction phase tasks may also include site certificate amendments, if any. The CRT will consult and provide support, as needed, for any Project amendment. During construction, the need may arise for changes to Project construction procedures, approved mitigation measures or other stipulations, and/or the Project Site Boundary or construction footprint. Under these or similar circumstances, an amendment to the Site Certificate will need to be filed and approved by EFSC, to stay in compliance with all conditions of Site Certification. The ODOE will consult with the SHPO, as appropriate, and the CRT will conduct any additional studies deemed necessary.

3.3 Post-Construction Phase Tasks

Post-construction phase tasks to be completed by the CRT include completing test investigations or data recovery analysis (as necessary), preparing artifacts for curation (as applicable), transferring these materials to the approved curation facility or appropriate land owner (if requested), and preparing final reports. The CRT will also prepare and finalize the mitigation and monitoring report which will be submitted to the Department consistent with Historic, Cultural, and Archaeological Resources Condition 3.[3]

3.3.1 Operation and Maintenance Phase

O&M activities include transmission line patrols, climbing inspections, structure and wire maintenance, insulator washing (as needed), inspection and maintenance of stations and communication facilities, access road repairs, vegetation management activities to maintain conductor to vegetation clearances, and keeping structures clear of vegetation. Most normal O&M of the Project would not involve any new ground disturbance outside of the construction footprint, and therefore no impacts to previously known cultural resources subject to the EFSC standard would be expected. However, some O&M activities, specifically vegetation management, ground disturbing repairs, etc., within or near cultural resources subject to the EFSC standard may result in significant impacts. The IDP in Section 8 of this HPMP will be followed during O&M activities to ensure the continued protection of such resources. The IDP contains procedures that reference construction personnel specific to the construction phase of the Project; however, the general practices contained within the IDP will be followed by IPC's O&M personnel or contractor(s). IPC's O&M staff and contractor(s) will notify the applicable land-managing agency personnel of any discovery and afford said discovery with the applicable protections.

O&M phase tasks to be completed by IPC's O&M staff and contractor(s) include, but are not limited to, the following:

- On-going employee environmental training annually and for newly hired staff, including provision of post-training informational materials;
- Follow procedures contained in this HPMP and the IDP provided in Section 8, as applicable;
- Coordinate activities with the applicable land-managing agency and, as appropriate, tribe(s) regarding how best to avoid, minimize, or mitigate impacts to cultural resources subject to the EFSC standard and in accordance with the applicable procedures outlined in this HPMP. ODOE and SHPO will be consulted regarding all measures to be conducted;
- Coordinate with tribe(s) regarding the scheduling of O&M activities to be conducted within 5 miles of Historic Properties of Religious and Cultural Significance to Indian Tribes (HPRCSIT) (e.g. sacred sites, traditional use areas, etc.). Regular O&M activities will be scheduled so as to not coincide with or impact use of these sites. Further, vegetation management activities, such as the application of herbicides, will avoid impacting species of concern to tribe(s); and

[3] Historic, Cultural, and Archaeological Resources Condition 3: Within three years after construction is completed, the certificate holder shall finalize, and submit to the Department for its approval, a final Cultural Resources Technical Report.
a. The results of all cultural resource monitoring required by the Historic Properties Management Plan (HPMP) referenced in Historic, Cultural, and Archaeological Resources Condition 2; and
b. The results of all cultural resources testing or data recovery conducted as a result of unanticipated discoveries as required by the Historic Properties Management Plan and Inadvertent Discovery Plan referenced in ~~Historic, Cultural, and Archaeological Resources~~.

- Monitoring requirements as described in Section 3.3.3.

IPC's O&M staff will continue to coordinate and consult with ODOE, SHPO, and tribes, as necessary.

3.3.2 Reclamation Phase

Once construction is completed, various reclamation treatments will be applied to reclaim Project areas to a condition agreed upon by the landowner, tenant, or land-managing agency. Reclamation activities may require 4x4 trucks, 2-ton trucks, bulldozers, motor graders, dump trucks, front-end loaders, and water trucks. Reclamation treatments that involve ground-disturbing activities within previously undisturbed soils may have the potential to significant impact cultural resources subject to the EFSC standards.

Table 3-1, below, shows typical reclamation activities and general monitoring requirements, but is not a comprehensive list of mitigation measures that may be required. Resource-specific measures will be provided in future resource-specific mitigations and treatment plans. Measures to be applied to resources of concern to tribes will be determined through consultation with those tribes. Such measures may include avoidance of reclamation activities during tribal use of cultural resources subject to the EFSC standards. Reclamation activities may require monitoring and avoidance measures by the CRT. The HPMP will be adhered to during the Reclamation Phase.

Table 3-1. Examples of Reclamation Activities

Reclamation Activity	Description of Activity	Possible Equipment	Monitoring Requirements
Management of Waste Materials	Cleanup of debris from construction area, such as scrap metals, oil, wood, etc.	4x4 trucks, dump trucks, front-end loaders	None.
Earthworks	Re-establishment of slope and surface stability and recontouring.	4x4 trucks, dump trucks, front-end loaders, motor graders, bulldozers	Monitoring of new ground disturbance is anticipated and/or if work takes place near the boundary of a known cultural resource subject to EFSC standards.
Topsoil Replacement	Reclamation of construction disturbance to pre-construction landscape conditions: replacement of soils, re-contouring, etc.	4x4 trucks, front loader, motor grader	Monitoring of new ground disturbance is anticipated and/or if the work takes place near the boundary of a known cultural resource subject to the EFSC standards.
Seeding	Planting new seeds of indigenous native species.	4x4 trucks	None. No ground disturbance within undisturbed soils.
Alternative Seeding	Seeding of annual grasses or forbs.	4x4 trucks	None. No ground disturbance within undisturbed soils.
Vertical Mulch Replacement	Vegetation previously cleared will be replaced back onto site.	4x4 trucks, front loader, motor grader	None. No ground disturbance within undisturbed soils.

Reclamation Activity	Description of Activity	Possible Equipment	Monitoring Requirements
Visual Composition	Enhancement restoration to mitigate visual impacts. Plan to be developed.	4x4 trucks, front loader, motor grader	May require monitoring if activity is near a known cultural resource subject to EFSC standards.

NOTE: Resource-specific measures, including monitoring where needed, will be developed in coordination with the ODOE, SHPO, and tribe(s), as applicable, for cultural resources subject to the EFSC standards. The measures will be provided in the final Reclamation Plan included in the ASC.

3.3.3 Operation and Maintenance Activities

Routine O&M activities will be conducted within the Project Site Boundary as defined in the Project Order. They will range from routine equipment inspections (no new ground disturbance outside of the Project's permitted area as defined by site certification) performed by relatively small crews to ground-disturbing activities such as pole replacement or access road maintenance performed by larger crews with heavy equipment. Activities that result in new ground disturbance have the potential to cultural resources subject to the EFSC standards. Table 3-2 below lists some of the typical routine O&M activities and generalized monitoring requirements, but is not a comprehensive list of mitigation measures that may be required for O&M activities. Resource-specific measures will be provided in future resource-specific mitigations and treatment plans. Measures to be applied to resources of concern to tribes will be determined through consultation with those tribes. Such measures may include avoidance of reclamation activities during tribal use of cultural resources subject to the EFSC standards. Additional detail of routine O&M activities is contained in Exhibit B of the ASC.

Table 3-2. Operation and Maintenance Activities

Operation and Maintenance Activity	Description of Activity	Schedule, Crew, Equipment	Monitoring Requirements
Transmission Line Maintenance	Ground and aerial inspections of transmission line and nearby vegetation to determine if repairs are necessary.	Semi-annually/Crew of 3 to 4, aerial inspection uses helicopter, ground crew uses 4x4 trucks or all-terrain vehicles.	None.
Hardware Maintenance Repairs	Repair or replacement of individual components (no new ground disturbance outside of right-of-way [ROW]).	Schedule depends on inspection results; crew may use 4x4 trucks, material truck (flatbed), bucket trucks (low reach), boom trucks (high reach), or personal lift.	None.

Operation and Maintenance Activity	Description of Activity	Schedule, Crew, Equipment	Monitoring Requirements
Access Road and Work Repair	Grading or repair of existing maintenance access roads and work areas, spot repair of sites subject to flooding or scouring.	Schedule depends on inspections or response to emergency; crews may use a grader, backhoe, four-wheel-drive pickup truck, and a tracked-loader, or bulldozer.	Monitoring of new ground disturbance is anticipated and/or if the work takes place near the boundary of a known cultural resource subject to EFSC standards.
Vegetation Management	Within the ROW under the wires and to 10 feet outside outermost conductor, vegetation maintained under 5 feet tall. From this zone to the edge of the ROW, vegetation maintained up to 25 feet in height or as needed to ensure safe operations.	Schedule depends on inspections; crew size varies, and vegetation will be removed using chain saws, weed trimmers, rakes, shovels, mowers, and brush hooks. Clearing efforts in heavy growth areas will use a Hydro-Ax or similar equipment.	Monitoring of new ground disturbance is anticipated and/or if the work takes place near the boundary of a known cultural resource subject to EFSC standards.
Station and Communicati on Station Maintenance	Equipment testing, monitoring and repair, emergency and routine procedures for service continuity and preventive maintenance of remote surveillance system.	Scheduled once monthly or as needed; crew of 2-4 persons, use light utility truck.	None.
Emergency Response	Activities necessary to repair natural hazard, fire, or human-caused damages to line.	Equipment is similar to conducting routine maintenance, with use of similar equipment to complete repairs (e.g., helicopters for quick response)	Monitoring of new ground disturbance is anticipated and/or if the work takes place near the boundary of a known cultural resource subject to EFSC standards.

Operation and Maintenance Activity	Description of Activity	Schedule, Crew, Equipment	Monitoring Requirements
Fire Protection	All federal, state, and county laws, ordinances, rules, and regulations pertaining to fire prevention and suppression will be strictly adhered to.	Typical practices include brush clearing prior to work, stationing a water truck at the job site to keep the ground and vegetation moist in extreme fire conditions, enforcing red flag warnings, providing "fire behavior" training to all pertinent personnel, and keeping vehicles on or within designated roads or work areas.	Monitoring of new ground disturbance is anticipated and/or if the work takes place near the boundary of a known cultural resource subject to EFSC standards.

Note: Resource-specific measures, including monitoring where needed, will be developed in coordination with the ODOE, SHPO, and tribe(s), as applicable, for cultural resources subject to EFSC standards. The measures will be amended to the HPMP.

4.0 PREVIOUS RESEARCH AND CULTURAL RESOURCE TYPES IDENTIFIED WITHIN THE PROJECT AREA

This section discusses the identification of cultural resources during the Project's planning and permitting phase. It also summarizes the cultural resource types identified within the Project area. Studies completed include a literature and records review, cultural resources pedestrian survey of the Project Site Boundary, a Visual Assessment of Historic Properties (VAHP), and ethnographic studies completed by the CTUIR and Shoshone-Paiute tribes. (At the time of this publication, the ethnographic studies are considered confidential and are unavailable to IPC.) The cultural resources pedestrian survey (Anderson et al. 2018) and the VAHP study (AECOM 2018) both include extensive cultural and historic contexts for the Project. Both studies are included as confidential attachments to Exhibit S of the ASC. An Enhanced Archaeological Survey, consisting of survey of inaccessible parcels, shovel probing, and testing, will occur after publication of this HPMP and receipt of the Site Certificate, but prior to construction activities.

4.1 Literature Review and Cultural Resources Pedestrian Survey

Prior to the initiation of cultural resource pedestrian surveys, a literature and records review was conducted of the analysis area. Available existing records of previously conducted surveys and recorded sites were retrieved from the Oregon SHPO's inventory and site database, the CTUIR, THPO, the USFS, and applicable BLM field offices. The literature review presented in the technical report (confidential Attachment S-6) for the Project provides an in-depth discussion of the environmental and cultural contexts of the analysis area, including an overview of prehistory, ethnography, and history.

A series of cultural resource pedestrian surveys were conducted in an effort to field check and examine previously recorded resources and identify any unrecorded cultural resources within the Site Boundary. The entire Project Site Boundary has been inventoried except for areas to

which access has been denied, or with development precluding ground surface visibility (e.g., paved roads and highways, parking lots, and lawns), areas deemed hazardous (e.g., loose talus slopes, slippery bedrock exposures, deep streams, and electrical substations), or excessively steep (35 degree and greater) slopes. The latter areas (hazardous and steep areas) were examined visually from a safe distance, however, particularly for resources such as rock art, rock shelters, cairns, and any other apparent cultural resource or feature. Six pedestrian survey sessions of accessible private and public lands were conducted between the spring of 2011 and the summer of 2016. Areas of denied access will be subject to complete pedestrian survey during the Enhanced Archaeological Survey to be conducted after receipt of the site certificate, prior to facility construction.

Results from the literature review and pedestrian surveys are provided in *Appendix A.1: Resource Inventory Tables with Management Recommendations for Resources Potentially Protected under OAR 345-022-0090*. Specially see:

- Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts;
- Table HCA-3: NRHP Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts;
- Table HCA-5: Exhibit S Historic Properties of Religious and Cultural Significance to Indian Tribes;
- Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a); and
- Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b).

Council-imposed Mitigation are incorporated in Appendix A.1 as:

- Table HCA-4b: Mitigation for NRHP-Eligible Oregon Trail/NHT Segments
- Table HCA-8: Potential Minimization and Mitigation of Direct Impacts to Resource Site Types Identified within the Direct Analysis Area
- Table HCA-9: Potential Minimization and Mitigation Methods for Indirect Impacts
- Table HCA-10: Potential Minimization and Mitigation Methods for Indirect and Direct Impacts to Aboveground Resources

4.2 Ethnographic Studies

To identify and protect contemporary and ongoing tribal use of culturally significant areas and/or sites, general information about sacred sites and other places of traditional cultural or religious importance to Native Americans or other cultural groups has been researched as part of the completion of the cultural context for the Project as well as the VAHP. The BLM has completed separate ethnographic studies of the direct analysis area in coordination with the CTUIR and Shoshone-Paiute Tribes of the Duck Valley Indian Reservation. The Burns Paiute Tribe is in the process of conducting a third ethnographic study. The confidential traditional use study completed by CTUIR in 2014 through the Section 106 process was provided to IPC on May 3, 2018 during an in-person meeting between ODOE, SHPO, CTUIR, and IPC regarding the EFSC site certificate process. The study (Engum 2014a, 2014b) has been incorporated, as appropriate, into the assessment of Project impacts. Additional formal and informal phone conversations have occurred between CTUIR and IPC since the May 3, 2018 meeting to further IPC's coordination efforts.

Many HPRCSITs and other cultural resources that could potentially be HPRCSITs were identified by Project studies as being crossed by the direct analysis area. Two formally evaluated HPRCSITs crossed by the direct analysis area are Sand Hollow Battleground and Sisupa (Engum 2014a, 2014b). Sand Hollow Battleground is the site of the largest battle of the Cayuse War, involving the First Oregon Rifle Regiment and the Umatilla, Cayuse, Palouse, and Walla Walla tribes and holds other aspects of significant to the CTUIR that are unrelated to the battle that occurred there (Engum 2014a, 2014b; Minthorn 2006; Mitchell 2003). Sisupa is the

site of a campsite between the Columbia River and Ione (Engum 2014a, 2014b; Hunn et al. 2015). These two resources were determined eligible for the NRHP by the U.S. Department of Defense (DOD 2015) and are historic properties subject to the EFSC standards.

Nisxt is a third formally evaluated HPRCSIT located on the Columbia River east of the Port of Morrow. This site was identified in a Traditional Use Study completed by the Yakama Nation under contract to the U.S. Army Corps of Engineers (Meninick, et al. 2014). The site is identified as a permanent winter village named for the greasewood found there. The U.S. Army Corps of Engineers determined that one component of the site is NRHP eligible. The site is located within the indirect analysis area. See *Appendix A.1: Resource Inventory Tables with Management Recommendations for Resources Potentially Protected under OAR 345-022-0090*, Section III. *Tribal Resources*.

IPC will continue to coordinate with interested tribes to determine any necessity to address conflicts with HPRCSITs or other traditional use sites that are subject to EFSC standards.

4.3 Visual Assessment of Historic Properties

A VAHP study was completed in a phased approach, including a reconnaissance level survey (RLS), completed in September 2015, and an intensive level survey (ILS), completed in

February 2018. The RLS and ILS are primarily designed to identify potential effects to built environment or aboveground resources. Fieldwork for the ILS was conducted between October 2014 and October 2016. Additional RLS and ILS work remains on CTUIR lands. The entire Project Site Boundary and viewshed have been inventoried except for areas to which access has been denied and CTUIR lands. Areas of denied access and the CTUIR lands will be subject to complete survey after receipt of the site certificate, but prior to facility construction and only if access is granted from the applicable property owners. The ILS analyzes those properties from the RLS that have sufficient integrity, for which an NRHP criterion might apply, and that have the potential to be affected by the Project (i.e. the Project would be visible from the resource). The history of each property in the ILS was documented and then comparatively analyzed against the historic context of the Project. This provides a framework for determining whether the resource meets any of the NRHP Criteria for Evaluation.

The RLS fieldwork identified 764 built environment resources in Oregon, including multiple crossings of historic trails and pre-contact resources, such as quarries and cairns. The ILS study addressed 229 of these resources. These resources included NRHP-listed resources as well as resources that were recommended for additional study or NRHP evaluation, or were unevaluated resources, archaeological sites with aboveground features, or were newly identified following an updated literature search and data gap analysis to cover portions of the Project that were not previously identified in the RLS. Of the 229 resources, potential adverse effects are anticipated for 39 resources. Fourteen of the 39 resources require further consultation and research before making a recommendation on Project effect avoidance, minimization, and/or mitigation strategies The Project will cross three historic properties with the potential for direct adverse effects. A list of sites with potential adverse effects is provided in Table 4-1. The majority of potential adverse effects could occur to stacked rock features/cairns. Due to the difficulty in dating and attributing cultural origin, additional consultation with ODOE, SHPO, and tribes will be conducted as an interim step towards determining if mitigation would be appropriate. Resource-specific management and/or treatment plans will be developed as needed as a result of consultations.

Table 4-1. Project Effects to Aboveground Resources

ID Number	Resource Name	Effect
CFR 1064	Vey Ranch	Potential Adverse Effect
35MW1	Midden	Further research and consultation necessary with Tribes and/or Federal Agency
35MW2	Camp, shell midden, lithic scatter	Further research and consultation necessary with Tribes and/or Federal Agency
35MW11	Midden	Further research and consultation necessary with Tribes and/or Federal Agency
SL-MO-001, SL-MO-005	Sand Hollow Battle Ground - (Associated Report #26196)	Further research and consultation with CTUIR; off-site mitigation
35MW248	Rock Cairns	Potential Adverse Effect

ID Number	Resource Name	Effect
SL-MO-003	Map A2: Nisxt (Associated Report #26592)	Further research and consultation with Confederated Tribes of Yakam Nation necessary
SL-MO-004	Map B2, C2, C3: Sisupa (Associated Report #26196)	Further research and consultation with CTUIR necessary
UP-102	Two Log Cabins	Further research and consultation with CTUIR necessary
UP-103	Buckhorn Cabin	Further research and consultation with CTUIR necessary
UP-106	Historic Cabin	Further research and consultation with CTUIR necessary
SL-UM-010	Historic Lookout Tower	Further research and consultation with CTUIR necessary
Range Unit 12 Site 1	Rock Cairn	Further research and consultation with CTUIR necessary
Range Unit 12 Site 2	Rock Cairn	Further research and consultation with CTUIR necessary
B2H-UM-006	Daly Wagon Road	Potential Adverse Effect
35UN459	Rock Cairn	Potential Adverse Effect
35UN493	Rock Cairn	Potential Adverse Effect
B2H-BA-282	Oregon Trail ACEC - Virtue Flat segment and Flagstaff Hill	Potential Adverse Effect
B2H-BA-285 (3B2H-CH-05)	Oregon Trail ACEC - Straw Ranch 1 and 2	Potential Adverse Effect
3B2H-CH-05	Oregon Trail Segment	Potential Adverse Effect
B2H-BA-327	Goodale's/Sparta Trail	Potential Adverse Effect
0503050334SI	Rock cairn, rock alignment	Potential Adverse Effect
14S44E14-2	Rock cairns, rock alignment, lithic scatter; Three Stone Rock Stacks	Potential Adverse Effect
35BA372	Rock Cairn	Potential Adverse Effect
35BA388	Rock Alignment	Potential Adverse Effect
35BA1423	Hunting blind rock stacks. Identified by CTUIR informant near ODOT borrow pit	Potential Adverse Effect
B2H-MA-041	Oregon Trail ACEC - Alkali Springs Segment	Potential Adverse Effect
B2H-MA-042	Oregon Trail ACEC-Birch Creek segment	Potential Adverse Effect
4B2H-EK-31	Benson Reservoir	Potential Adverse Effect
4B2H-EK-41	Oregon Trail Segment	Potential Adverse Effect
6B2H-RP-09	Oregon Trail Segment	Potential Adverse Effect
35ML550	Ali-Alk Rock shelter	Potential Adverse Effect
35ML1549	SM Site-2 (Stacked Rock Feature)	Potential Adverse Effect

ID Number	Resource Name	Effect
35ML1550	SM Site-3 (Stacked Rock Feature)	Potential Adverse Effect
35ML1552	SM Site-5 (Stacked Rock Feature)	Potential Adverse Effect
35ML1553	SM Site-6 (Stacked Rock Feature)	Potential Adverse Effect
35ML552	Ali-Alk Stacked Stone Rings	Potential Adverse Effect
35ML1959	Rock Cairn	Potential Adverse Effect
35ML1960	Rock Cairn	Potential Adverse Effect

4.3.1.1 Oregon Trail

This section provides an overview of resources identified by the ILS as associated with the Oregon Trail. Some of the resources discussed in this section are also mentioned in the VAHP section above, but are presented in summary form here to provide a unified discussion of this significant resource.

The evaluation of segments, sites, and side trails associated with the Oregon Trail was performed consistent with the currently proposed Multiple Property Documentation Form (MPDF) for the Oregon Trail, Oregon 1840-1880 as well as *Guidance for Recording and Evaluating Linear Cultural Resources* (Oregon SHPO 2013). The MPDF has been approved by the Oregon State Advisory Commission on Historic Preservation, but has yet to be approved by the Keeper of the National Register. The draft MPDF provides a framework for evaluating the various property types associated with the Oregon Trail in the State of Oregon that could be buildings, structures, objects, or sites, as well as districts. The MPDF also considers the Oregon Trail a linear historic district (in its totality) that contains contributing and non-contributing resources located within its historic boundaries. The Oregon Trail is also considered to be significant at the national level and has been designated as a National Historic Trail (NHT).

The MPDF discusses several Property Types associated with the Oregon Trail and specifically discusses the associated resources that fall under this typology. The following is a list of MPDF Property Types and associated resources located within the Visual Assessment analysis area: river crossings, fords, and ferries; intersecting routes; Indian agencies/reservations; Euro-American towns; springs; mountain ascents and descents; valleys; landmarks; battle sites; and important camping sites.

A total of 37 resources associated with the Oregon Trail were assessed during the VAHP studies. Of the 37 Oregon Trail resources, eleven were identified as being within the Project Site Boundary (3B2H-CH-05, 4B2H-EK-02, 4B2H-EK-41, 6B2H-RP-09 , 5B2H-SA-01, B2H-UN-005, B2H-BA-282, 35MW227, 35UN74, B2H-MA-003, B2H-MA-007). Twenty-eight NRHP-eligible Oregon Trail-related resources were recommended for the visual impacts assessment and following that analysis eight had the potential to be adversely affected by the Project. Table 4-2 summarizes the adversely impacted resources. Resource-specific mitigation and/or treatment plans will be determined, as necessary, in consultation with ODOE and SHPO.

Table 4-2. Project Impacts to Oregon Trail Resources

Temporary Resource Number	Resource Name	Effect
SL-MO-001, SL-MO-005	Sand Hollow Battle Ground (Associated SHPO Report #26196) (for its associations with Oregon Trail)	Potential Adverse Effect

Temporary Resource Number	Resource Name	Effect
B2H-BA-282	Oregon Trail ACEC - Virtue Flat segment and Flagstaff Hill (Flagstaff Hill component affected)	Potential Adverse Effect
3B2H-CH-05	Oregon Trail ACEC - Straw Ranch 1 and 2	Potential Adverse Effect
B2H-BA-285	Oregon Trail Segment (near Straw Ranch)	Potential Adverse Effect (Project Site Boundary)
B2H-BA-327	Goodale's/Sparta Trail	Potential Adverse Effect
B2H-MA-041	Oregon Trail ACEC - Alkali Springs Segment	Potential Adverse Effect
6B2H-RP-09	Oregon Trail Segment	Potential Adverse Effect (Project Site Boundary)
B2H-MA-042	Oregon Trail ACEC - Birch Creek segment	Potential Adverse Effect
4B2H-EK-41	Oregon Trail Segment	Potential Adverse Effect (Project Site Boundary)

In addition to considering the potential for resourced-specific impacts, an analysis that considers the potential cumulative impacts to Oregon Trail resources was prepared.

As an overview of the cumulative impacts analysis, of the 177.97 miles of the Congressionally Designated Route of the Oregon NHT, 43.89 miles would have a potential view that is within 0.5 mile of the Project Site Boundary. For “Contributing Trail Segments” or segments of the Oregon Trail that have been previously identified by surveys or listed on the NRHP, approximately 89.35 miles of these segments lies within the 5 miles of the Project centerline and about 27.43 miles would have a potential view that is within 0.5 mile of the Project Site Boundary.

While the cumulative effect data provide a general indication of the magnitude for indirect impacts, the resource-specific analysis performed during the ILS is more precise in its assessment of impacts to contributing resources associated with the Oregon Trail and informs Project planning in an effort to avoid, reduce, or mitigate impacts.

4.4 Cultural Resources Types Identified by Surveys

Table 4-3 provides a summary of the different cultural resources found by the Project’s surveys in Oregon. These definitions have been developed in coordination with the BLM as part of the Project’s Section 106 process and conform to the agency’s GIS requirements. Studies conducted under the Project’s Section 106 compliance efforts have been used to support analyses for the EFSC process.

Table 4-3. Cultural Resources Identified within the Direct Analysis Area

Resource Type	#		Resource Type	#
Pre-Contact Archaeological Sites			**Historic/Aboveground Sites**	
Cairn(s)	16		Railroad – UPRR (3 segments) [2]	1
Cairn(s) & Hunting Blind	3		Ranching	1
Cairn(s) & Lithic Scatter	1		Road	1
Cairn(s) & Lithic/Tool Scatter	1		Survey Marker	3
Hunting Blind	1		Utility Line	1
Lithic Scatter	9		Utility Line & Water Conveyance	1
Lithic/Tool Scatter	23		Water Conveyance	7
Quarry	7		Water Conveyance – South Canal (1 segment) [3]	1
Temporary Camp	1		Water Conveyance – Vale Oregon Main Canal (2 segments) [3]	1
Multicomponent Archaeological Sites			**Undetermined Archaeological Sites**	
Cairn(s), Quarry, & Homestead	1		Cairn(s)	1
Lithic Scatter & Refuse Scatter	2		Rock Alignment	1
Lithic/Tool Scatter & Refuse Scatter	1		**Pre-Contact Archaeological Objects**	
Lithic/Tool Scatter, Homestead, & Refuse Scatter	1		Biface(s)	4
Lithic/Tool Scatter, Ranching, Water Conveyance	1		Biface(s) & Debitage	3
Quarry & Refuse Scatter	1		Core(s)	6
Quarry, Refuse Scatter, & Water Conveyance	1		Core(s) & Debitage	2
Temporary Camp & Ranching	1		Core(s), Debitage, & Tested Cobble(s)	1
Historic Archaeological Sites			Core(s), Debitage, & Utilized Flake(s)	2
Agriculture	6		Debitage	40
Agriculture & Other	1		Debitage & Tested Cobble(s)	1
Agriculture, Ranching	1		Debitage & Tool(s)	2
Cairn(s)	1		Debitage & Utilized Flake(s)	2
Cairn(s) & Trail	1		Other	1
Farmstead (in Ruin)	1		Projectile Point(s)	7
Homestead (in Ruin)	4		Utilized Flake(s)	6
Logging/Railroad (Abandoned)	1		**Multicomponent Archaeological Objects**	
Mining	9		Debitage & Refuse	2
Railroad – UPRR (2 segments) (in Ruin)[2]	1		Debitage, Preform(s), & Refuse	1
Ranching	5		Debitage, Tested Cobble(s), & Refuse	1
Refuse Scatter	14		**Historic Archaeological Objects**	
Refuse Scatter & Structure (in Ruin)	1		Agriculture	5
Road (Abandoned)	6		Other	1
Structure (in Ruin)	1		Refuse	22
Trail – Oregon Trail (5 segments) [3]	1			
Utility Line	3			
Water Conveyance (Abandoned)	5			

5.0 METHODS FOR DETERMINATION OF NRHP ELIGIBILITY AND EFFECTS

This section discusses the methods to be used to determine NRHP-eligibility and Project effects to resources. Per EFSC standards, significant effects may occur as a result of impacts on historic properties (NRHP-listed or -eligible resources), archaeological sites on private or state lands, or archaeological objects (also referred to here as isolated finds) on private lands. These same methods will be used if any previously unidentified cultural resources are discovered within the Project Site Boundary.

5.1 Determination of NRHP Eligibility

The cultural resources studies completed to date by IPC contain recommendations for NRHP eligibility for resources in the Project Site Boundary and Visual Assessment analysis area. These recommendations will be reviewed and accepted or modified by SHPO. For each resource that is within the Project Site Boundary and Visual Assessment analysis area, the SHPO will determine NRHP eligibility based on the recommendations. It should be noted that for sites that may be significant to tribes, IPC will coordinate with the affiliated tribe to make an appropriate NRHP eligibility recommendation. IPC will treat all unevaluated cultural resources as though they are NRHP-eligible and will try to avoid all unevaluated sites. If avoidance is not feasible, resource eligibility will be evaluated, which may require subsurface testing, additional research, and/or consultation with tribes or historic preservation groups to determine the significance of the site.

The CRT will make NRHP-eligibility recommendations for cultural resources identified during the construction or post-construction phases using the same criteria outlined in the Project's studies (Anderson et al. 2018; AECOM 2018).

5.2 Determination of Effects

Each historic property, archaeological site, and archaeological object subject to the EFSC standards has been or will be evaluated to determine if the Project will have a significant impact on the resource. Direct impacts may occur as a result of direct disturbance of NRHP-listed or -eligible cultural resources or archaeological sites within the direct analysis area or archaeological objects on private lands within the direct analysis area. Given the non-renewable nature of cultural resources, these impacts that occur through ground disturbance would be permanent. Indirect impacts may occur as a result of new construction within the viewshed of NRHP-listed or –eligible cultural resources with aboveground component or cultural resources where the surrounding viewshed plays an integral role in the expressing the resource's significance or in its use. This includes resources such as trails, buildings, and cairns, as well as TCPs. Impacts will only occur for those resources where the viewshed, setting, and landscape contributes to the significance or quality of use of the resource.

While IPC may make recommendations of NRHP eligibility and impact significance, the SHPO will make such determinations. For resources that may have significance to tribes, the CRT and IPC will coordinate with the appropriate tribe(s) to make eligibility and impact significance recommendations. IPC will provide consulted parties with the results of the finding. In addition, the ODOE will utilize the impact methodologies discussed in Attachments S-2, S-7, and S-10 to Exhibit S to determine the indirect visual effects of the proposed Project on cultural resources meeting the EFSC standards and with aboveground features or are of traditional significance to tribes. In addition, IPC in coordination with appropriate tribes will broadly assess cumulative effects in order to identify reasonably foreseeable, potentially adverse effects as a result of the proposed Project.

The determinations of effects to cultural resources subject to the EFSC standards will serve as the basis for IPC's development of resource-specific avoidance, minimization, or mitigation measures presented for review and approval in future resource-specific treatment and/or mitigation plans.

6.0 AVOIDANCE AND PROPOSED MITIGATION PLAN

Cultural resources meeting the EFSC standards (historic properties, archaeological sites on state or private lands, and archaeological objects on private lands) will be avoided, protected, and/or mitigated if avoidance is not possible. Justification for not avoiding any such resources will be provided to ODOE. If impacts are unavoidable, efforts will be aimed at reducing or compensating for those impacts. Impacted resources will require mitigation to reduce impacts to less than significant. The appropriate mitigation measure(s) depends on a number of factors, including the applicable criteria for NRHP eligibility and significance to a tribe(s). Following the identification of impacts and the development of appropriate mitigation measures, resource-specific mitigation plans will be prepared and included as Appendix B to this HPMP.

This section provides a generalized framework and approach IPC will assume for minimizing and mitigating significant impacts to cultural resources subject to the EFSC standards.

6.1 Avoidance

IPC has designed the Project to avoid significant cultural resources to the extent feasible. Cultural resources were identified within or near the Project area early in Project planning through literature reviews and Project-specific surveys. The Project design has been altered where feasible to avoid effects to significant cultural resources identified by the studies completed for the Project, and IPC is committed to a similar process for unanticipated or inadvertent discoveries during construction. Resource-specific treatment and mitigation plans will be developed in consultation with the ODOE and SHPO, and in coordination with appropriate tribe(s), so as to reduce the impacts to less than significant (see Appendix B).

In many cases, direct effects to significant cultural resources identified during the Project planning phase were avoided by relocating a Project facility, but the proposed facility may be installed near the resource. In order to avoid physical damage to the resource during construction, it and a buffer will be marked for avoidance by flagging, fencing, or staking. The buffer will be established on a resource-specific and basis determined through consultation with ODOE and SHPO, and when necessary, the appropriate tribes. In some cases, with large sites, complexes of sites, or districts/landscapes, only that part of the site near the construction activities will need to be marked for avoidance.

Construction monitoring to ensure successful site avoidance as planned and to watch for subsurface discoveries during grading, blading, excavation, and other initial mechanical ground-disturbing activities, will be conducted as detailed in the Monitoring Plan (see Section 7).

During Project construction, reclamation, and O&M activities, it is possible that surface and/or subsurface resources, not identified during pedestrian surveys, could be discovered. Section 8, the IDP, details the required response to such a discovery.

6.1.1 Avoidance Measures for Oregon Trail Resources

IPC has developed site-specific measures to avoid direct impacts to Oregon Trail resources located within the Site Boundary. Table 6-1 includes avoidance measures to be employed for ten Oregon Trail related resources. These measures include reducing or relocating Project components and/or activities, avoiding construction activities within 100 feet of the identified resource characteristics, flagging resource boundaries, and staying within existing areas of disturbance.

6.2 General Recommended Mitigation Measures for Cultural Resources Subject to the EFSC Standards

Based on the results of the archaeological and above ground resource surveys and avoidance efforts, it is unlikely that significant impacts to NRHP-eligible and listed historic properties can be entirely avoided by this Project. Even if the Project could be redesigned to avoid all direct effects

through ground disturbance, the substantial change in the setting of some important resources where setting is an aspect of integrity, including NHTs, cannot be entirely avoided and has already been identified in the survey reports. In addition, there may be resources that due to their critical location or size cannot be entirely avoided. The mitigation measures discussed in this section offer general guidance but do not hinder alternative approaches, site-specific mitigation for historic properties will be developed in coordination with the ODOE, SHPO, the tribe(s), and/or historic preservation societies (as applicable).

6.2.1 General Recommended Mitigation for Direct Significant Impacts

The Project has been designed to avoid direct effects to resources recommended eligible for or listed on the NRHP, including significant archaeological sites, historic buildings, and trails. Resource-specific mitigation measures for significant impacts will be addressed through resource-specific treatment and/or mitigation plans (Appendix B). However, this section provides a generalized approach to mitigate for direct significant impacts. These mitigation measures may or may not be appropriate for all directly impacted resources. Appropriate resource-specific mitigation will be determined through consultation with ODOE and SHPO, as well as tribes and historic preservation societies as appropriate.

The most common anticipated direct impact on cultural resources subject to the EFSC standards consists of direct disturbance of archaeological resources within the construction footprint. After all reasonable avoidance and minimization measures have been implemented and a significant impact is still considered probable, mitigation would likely include data recovery. This may include excavation, research, and analysis, as summarized in Table 6-1. Appropriate alternative methods may be developed in coordination with ODOE, SHPO, tribe(s), and/or historic preservation societies.

Table 6-1. Example Data Recovery Methods for Unavoidable Direct Impacts*

Time Period of Resource	Example Resource Types	Potential Data Recovery for Resources without a Subsurface Component	Potential Data Recovery for Resources with Subsurface Component(s)
Pre-contact	Lithic scatters, campsites, hearths, and quarries	• Surface collection or in-field artifact analysis and recording • Detailed surface mapping • Geomorphological studies • Photo documentation • Curation	• Surface collection or in-field artifact analysis and recording • Detailed surface mapping • Geomorphological studies • Controlled excavation • Laboratory analysis • Photo documentation • Curation
Historic Era	Refuse scatters, mining sites, homesteads	• Archival research • Surface collection or in-field artifact analysis • Detailed surface mapping • Photo documentation	• Archival research • Surface collection or in-field artifact analysis • Detailed surface mapping • Controlled scientific excavation • Laboratory analysis • Photo documentation

* Table intended as starting point for consultations to determine appropriate mitigation measures to reduce impacts. Resource types listed are not exhaustive.

When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering scientific information from and about the resource, will be prepared. Such plans will be drafted in coordination with ODOE, SHPO, and appropriate tribe(s). Planning for data recovery excavation to mitigate the loss of substantial and significant archaeological resources will be guided by data gathered during the test investigations and by the research design. Data recovery activities as management for

unavoidable direct impacts on cultural resources subject to the EFSC standards would be confined to the construction footprint. The appropriate state permits will be acquired to conduct all field work.

The data recovery plan will also include excavation, analysis, collection, and cataloging methods. Once data recovery and analysis are completed, the results will be provided in a report prepared by the Cultural Resources Specialist (CRS; see Section 7.1.1 for reporting and review).

In addition to data recovery, off-site mitigation may also be proposed and approved. Typical off-site mitigation measures can include methods described below for indirect effects (see Section 6.2.2).

6.2.1.1 General Recommended Mitigation Measures for Direct Impacts to Specific Resource Types

Based on the cultural resource pedestrian survey conducted for the Project (Anderson et al. 2018), the following site types (Table 6-2) have been identified within the construction footprint or Project Site Boundary. If avoidance is not feasible, minimization and/or mitigation measures will be implemented. This section presents a general framework for such strategies by cultural resource site type. Resource-specific mitigation or treatment plans will be guided by the *Oregon* SHPO's *Guidelines for Conducting Field Archaeology in Oregon* (2013) and developed in coordination with ODOE, SHPO, tribe(s), and/or historic preservation societies, as applicable. Table 6-2 lists potential minimization and mitigation measures for direct effects to the specific resource site types identified by Anderson et al. (2018). This list is not all-inclusive and other resource-specific mitigation measures may be appropriate. The example mitigation measures noted in this table would be deployed for direct significant impacts to cultural resources subject to the EFSC standard.

Table 6-2. Framework for Potential Minimization and Mitigation of Direct Impacts to Specific Cultural Resource Site Types Identified within the Direct Analysis Area

Site Type	Potential Minimization/Mitigation Measure
Pre-Contact Sites	
Lithic Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Lithic/Tool Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Quarry	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Temporary Camp	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Multicomponent Sites	
Lithic Scatter & Refuse Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Lithic/Tool Scatter & Refuse Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).

Site Type	Potential Minimization/Mitigation Measure
Lithic/Tool Scatter, Ranching Complex, Water Conveyance	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Possible Rock Art, Utility Line, and Water Conveyance	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Quarry & Refuse Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Quarry, Water Conveyance, & Refuse Scatter	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Temporary Camp & Water Conveyance	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Temporary Camp, Lithic/Tool Scatter, Refuse Scatter, and Ranching	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Historic-Era Sites	
Agriculture	Update recordation (if necessary), data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Bridge	Update recordation (if necessary). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Homestead	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Homestead/Ranching	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Logging/Railroad	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Mining	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Railroad	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Railroad & Utility Line	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Ranching	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Refuse Scatter	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).

Site Type	Potential Minimization/Mitigation Measure
Road	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Structure	Update recordation (if necessary, HABS/HAER/HALS documentation, repair, rehabilitation, or restoration (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Survey Marker	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Survey Marker & Refuse	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Trail Segment	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment.
Trail Segment & Utility Line	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment.
Utility Line	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Utility Line & Water Conveyance	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Water Conveyance	Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Water Conveyance & Bridge	Update recordation (if necessary, HABS/HAER/HALS documentation, repair, rehabilitation, or restoration (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Undetermined Sites	
Rock Circle	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).

6.2.2 General Recommended Mitigation for Indirect Significant Impacts

Mitigation of cultural resources subject to the EFSC standards that are significantly indirectly impacted by the construction, reclamation, or O&M of the Project may include historic documentation, photographic documentation (modern and historic), collection of oral histories, or architectural, landscape, or engineering documentation. As with significant direct impacts, resource-specific mitigation measures for significant indirect impacts will be addressed through resource-specific treatment and/or mitigation plans (Appendix B). However, this section provides a generalized approach to mitigate for significant indirect impacts. These mitigations may or may not be appropriate to all indirectly impacted resources. Appropriate resource-specific mitigation will be determined through consultation with ODOE and SHPO, as well as tribes and historic preservation societies as appropriate.

The most common anticipated indirect impact on cultural resources subject to the EFSC standards consists of visual intrusion in a resource's landscape (where that landscape or view contributes to resource's significance). Table 6-3 lists potential management methods for

unavoidable indirect effects to cultural resources subject to the EFSC standards. In addition to the measures noted in Table 6-3, IPC would also implement Scenic Resources Condition 1 which requires the use of dull-galvanized steel for lattice towers and non-specular conductors which would reduce the visual effect of the Project. In addition, consistent with the Vegetation Management Plan (Exhibit P1, Attachment P1-4), IPC will employ various vegetation management strategies to reduce indirect effects in areas with dense vegetation. This will reduce, but not eliminate, indirect effects to Oregon Trail segments located near or within the forested areas of the Blue Mountains. Site-specific mitigation measures would address residual indirect effects. Table 6-4 lists potential minimization and mitigation measures for indirect effects to the specific aboveground resource site types identified by AECOM (2017). Actual management will be determined through coordination with ODOE, SHPO, appropriate tribe(s), and/or historic preservation societies.

Table 6-3. Example Management Methods for Significant Indirect Impacts

Resource Category*	Example Resource Types*	Potential Management Methods for Significant Indirect Impacts
Trails (NHT, stage trails, freight roads, etc.)	• Trail remnants/ segments • Associated trail sites or features (stations, burials, inscriptions)	• Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification
Historic Buildings and Structures	• Farm and ranch sites/homesteads • Historic districts • Utility lines • Water conveyance systems • Mining sites • Bridges, etc.	• Photo documentation and scale drawings • National Register Nomination (if owner consents) • HABS/HAER/HALS documentation • Additional archival and literature review • Restoration of historic building or structure • Relocation of historic building or structure • Public interpretation (with owner permission)
Historic Property of Religious or Cultural Significance to Indian Tribes (TCPs; limited to those subject to EFSC standards)	• Ceremonial areas • Vision quest sites • Hunting and gathering areas	• Additional literature/archival review • Ethnographic documentation • Oral histories • Public archaeology funding • As recommended by impacted tribes

* Resource categories and types listed is not an exhaustive list.
HABS – Historic American Building Survey; HAER – Historic American Engineering Record; HALS – Historic American Landscape Survey

Table 6-4. Framework for Potential Minimization and Mitigation for Indirect and Direct Impacts to Specific Aboveground Site Types Identified within the Analysis Area

Built Environment Resource Type	Potential Minimization/ Mitigation (indirect and direct impacts)

Trails (Oregon NHT, Lewis and Clark NHT, stage trails, freight roads, etc.)	Recordation in HABS/HAER/HALS; metal detector surveys, additional historical research, information pamphlets, trail segment management plans; conservation easements; land acquisition; National Register nomination
Historic Buildings (Store, bank, Cabins, Homestead, etc.)	Recordation in HABS/HAER/HALS; restoration of historic building; relocation of historic building; oral histories; public interpretation; print publication; video media publication; National Register nomination

Built Environment Resource Type	Potential Minimization/ Mitigation (indirect and direct impacts)
Historic Structures (Railroad, mining, resources, bridge, utility lines, water conveyance, etc.)	Recordation in HABS/HAER/HALS; restoration of historic structure; relocation of historic structure; oral histories; public interpretation; print/media publication; National Register nomination
Historic Districts (residential, commercial, industrial, agricultural)	Historic district design guidelines for utilities, repair and maintenance guidelines, print publication, video media publication (website/podcast/video); National Register nomination
Archaeological resources with above ground features (Cemeteries, cairns, rock alignments, house pits, hunting blinds, middens, camp, quarry, rock art, rock shelter	Ethnographic documentation; resource management plan; recordation in HABS/HAER/HALS (if appropriate); partnership and funding for public archaeology projects; print publication, video media publication (website/podcast/video)
Traditional Cultural Properties (Ceremonial areas, vision quest, or gathering areas, etc.)	Ethnographic documentation; resource management plan; recordation; oral histories, etc.

Note: Resource-specific mitigation will be developed as appropriate in coordination with tribe(s), ODOE, and SHPO to resolve adverse impacts to sites that may not fall under the categories above.
HABS – Historic American Building Survey; HAER – Historic American Engineering Record; HALS – Historic American Landscape Survey

6.2.3 Site-Specific Recommended Mitigation for Indirect Significant Impacts

Two site-specific mitigation measures to reduce impacts to scenic resources associated with the Oregon National Historic Trail are proposed. Scenic Resources Conditions 2 and 3, contained in Exhibit R Scenic Resources, provide mitigation measures to minimize visual impacts to the Flagstaff Hill National Historic Oregon Trail Interpretive Center (NHOTIC) and the Birch Creek Area of Critical Environmental Concern (ACEC). The measures stipulated in these conditions will reduce, but not eliminate, indirect effects to the Oregon Trail Virtue Flat Segment near Flagstaff Hill (B2H-BA-282), that portion of the Goodale's/Sparta Trail (B2H-BA-327) that overlaps with the Virtue Flat segment, Oregon Trail ACEC – Birch Creek segment (B2H-MA-042), and an Oregon Trail Segment (4B2H-EK-41) located near the Birch Creek ACEC. The Scenic Resources Conditions 2 and 3 stipulate site-specific transmission tower heights, frame types, and materials that would collectively reduce the Project's visual intrusions at these locations. IPC may, in consultation with ODOE and SHPO, adopt site-specific measures similar to those outlined in Conditions 2 and 3 for other Oregon Trail resources that may be adversely affected. Residual indirect effects to the four resources noted above and other Oregon Trail-related resources listed in Table 4-2 of the HPMP, and other resources that may retain sensitive visual environments identified in Table 4-1 would be avoided, reduced, and/or mitigated consistent with the requirements of Section 6.2.2 and utilizing the site-specific measures contained in Table 6-3 and the framework outlined in Table 6-4.

7.0 MONITORING PLAN

This Monitoring Plan (MP) specifically addresses monitoring of cultural resources subject to the EFSC standards and provides details regarding roles and responsibilities of various personnel in the field. OAR 345-021-0010(1)(s)(E) requires the development of this MP as part of the HPMP for implementation during the Project phases. This section presents the roles and responsibilities of the CRT and specifies the monitoring procedures to be followed during construction activities.

The purpose of this MP is to specify:

- How avoidance of known resources will be ensured and documented;
- How monitors will interact with other environmental compliance staff and construction personnel; and
- How monitors will employ the IDP.

This MP, as part of the Project-wide HPMP, will be supplemented with a set of confidential Project maps of the selected route and design (Appendix C – Confidential Project Maps) that will illustrate resource-specific avoidance details, including monitoring of areas determined to have a high probability for buried cultural deposits.

7.1 Cultural Resources Team

The CRT is a part of IPC's environmental inspection team and will report to and coordinate with the Construction Contractor's Environmental Manager (CCEM).

The CRT will conduct cultural resource field monitoring, ensure compliance with requirements within the HPMP, and implement treatments, as applicable. Such activities will be inspected and coordinated by IPC and reported to ODOE, SHPO, and, as necessary, appropriate tribe(s) and/or historical societies.

The following sections describe the qualifications, roles, and responsibilities of each member of the CRT.

7.1.1 Cultural Resources Specialist (Principal Investigator)

Qualifications—The Cultural Resources Specialist (CRS) must have a graduate degree in anthropology/archaeology or a closely related field, and meet the Secretary of the Interior's Professional Qualifications Standards for archaeology, history, or architectural history as published in Title 36 Code of Federal Regulations 61. In addition, the CRS must have:

- At least 5 years of archaeological resource mitigation and field experience; and
- At least 3 years of experience in a decision-making capacity regarding cultural resources on construction projects, and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

IPC will provide written documentation, such as a resume, on the qualifications of the CRS to the SHPO, ODOE, Compliance Inspection Contractor (CIC), and IPC's Environmental Manager(s) no less than 75 days prior to the start of ground disturbance. At least 15 days prior to ground disturbance, the CRS will provide a letter to the CIC naming Cultural Resource Monitors (CRMs), including sufficient alternates to account for absences, for the Project demonstrating that the identified CRMs meet the minimum qualifications for cultural resource monitoring.

Responsibilities—The CRS will be the primary point of contact for the CRT. The CRS will coordinate directly with the ODOE and CCEM and with the CIC. The CIC will act as the conduit to the ODOE. The CRS will be responsible for cultural resource-related notifications to the ODOE and CCEM, who will be responsible for notifying IPC. IPC will coordinate with the appropriate tribe(s) regarding applicable finds (i.e., pre-contact resources, Native American burials). The CRS will be responsible for the analysis and the overall quality of the monitoring reports and discovery reports, if any. The CRS is responsible for the planning, execution, completion, and quality of the cultural resources monitoring tasks undertaken prior to and during the Project construction.

The CRS will be responsible for obtaining construction plans and schedules from the Construction Contractor, for tasking field personnel to monitor construction, and for evaluation or conduct of data recovery (e.g., excavations) for any unanticipated or inadvertent discoveries during construction.

The CRS will direct the preparations for and execution of day-to-day construction monitoring activities, which will include the following actions:

- Present the cultural resources section of the environmental training program (an employee training program for all construction personnel prior to ground-disturbing activities). Cultural resource training, developed in consultation with the ODOE and in coordination with the tribe(s), will include the proper procedures to follow if cultural resources are encountered during Project ground disturbance. The environmental training program may include an approved video, training pamphlets, and/or other media resources.
- Direct the CRM(s) regarding where and when to monitor Project construction activities.
- Review the CRM's daily monitoring log(s).
- Prepare a monthly summary report during active construction on the progress or status of cultural resources-related activities and submit to the CIC, who will submit the report to the ODOE and, if requested, affiliated tribes. The summary will include any new

cultural resource forms for any finds identified under the monitoring program (see Appendix D).

- Notify the CCEM, the CIC, ODOE, and, as requested, affiliated tribes by telephone or email of unanticipated or inadvertent discoveries of cultural resources within 24 hours of becoming aware of the situation.
- Notify the CCEM, the CIC, ODOE, and, as requested, affiliated tribes by telephone or email of any incidents of noncompliance related to cultural resources within 24 hours of becoming aware of the situation, and recommend corrective action to resolve the problem or achieve compliance.
- Obtain additional technical specialists or additional monitors, if warranted or required.
- Oversee the implementation and/or implement the IDP (Section 8).
- Oversee the completion of resource forms and other appropriate documentation of discoveries by members of the CRT.
- If a discovered cultural resource is determined eligible for the NRHP, the CRS will consult with the ODOE and the CCEM. The CCEM will be responsible for coordinating with IPC's Environmental Manager(s). The CRS will develop a treatment plan for the historic property if it is not covered by the HPMP. The ODOE will be responsible for coordinating with SHPO. IPC will be responsible for coordinating with the appropriate tribe if the resource is determined to be associated with Native Americans (pre-contact or historic).
- Determine the scope, methods, and techniques to be used for test investigations or data recovery and analysis of artifacts and other materials, as applicable.
- Oversee the completion of any required test excavations or data recovery excavations, and any curation.
- Oversee the completion of field analysis, curation, and reports of tests excavations, data recovery excavations, and ensure that the reports meet state requirements and the appropriate SHPO standards for completeness and quality.
- Oversee the completion of the final mitigation and monitoring report, post-construction.

7.1.2 Cultural Resource Monitors

A Lead CRM will be assigned by the CRS to direct daily monitoring activities of other CRMs. CRMs will conduct the daily cultural resource construction monitoring as specified in the HPMP. Preference will be given to monitors who are familiar with the types of historic and pre-contact resources in the area. The qualifications and responsibilities of the CRM are as follows.

Qualifications—The Lead CRM will have a graduate degree in anthropology/archaeology or a closely related field; at least 2 years of experience conducting archaeological fieldwork under direction of a Professional Archaeologist with at least 3 months of archaeological construction field and monitoring experience in the region. Other CRMs will have an undergraduate degree, be under the direct supervision of the Lead CRM and CRS, and have at least 2 years of experience conducting archaeological fieldwork under direction of a Professional Archaeologist with at least 3 months of archaeological construction field and monitoring experience in the region.

Responsibilities—The Lead CRM will be present full time at the Project construction site, as directed by the CRS, to oversee and direct the daily monitoring task of the CRMs. The CRMs will watch ground-disturbing construction activities and inspect cleared ground and excavation areas for signs of previously undiscovered cultural resources during construction as indicated in the HPMP or until monitoring reduction has been approved by the ODOE.

Prior to the start of construction or beginning of monitoring duties, all CRM staff will be trained in the consistent and accurate identification and recording of historic trails (e.g., Oregon NHT) and other local resource types within the Project region.

The CRM will provide daily documentation of construction activities and any findings. The monitor will prepare a daily monitoring log (see Appendix E) briefly describing the field conditions, construction progress and activities, non-compliance activities, and record of any finds of archaeological material.

The CRM will be responsible for implementing the requirements outlined in the environmental training program, HPMP, and IDP. If the CRM or other construction personnel discover cultural resource finds during construction, the CRM will have authority to halt construction in the vicinity of the find and will notify the CRS.

7.2 Potential Additional Cultural Support Staff

If the CRS and/or CRM(s) are needed in other areas where construction is continuing and ongoing, and/or in an effort to complete the work within a scheduled amount of time, it may be necessary for IPC to acquire additional field staff in the event of an unexpected data recovery effort or resource-specific treatment. The following additional staff may be acquired, so as to avoid removing CRMs from their monitoring duties. All field crews will work under the supervision of the CRS.

7.2.1 Field Director

Qualifications—The Field Director will have a graduate degree in Anthropology/Archaeology, or a closely related field, and meet the requirements of the appropriate Oregon state permit for Qualified Archaeologists. Additionally, the Field Director should have at least 1 year of experience directing field work with at least 3 months of experience in the region and 4 months of experience with comparable cultural resource types and in similar cultural contexts and environmental settings.

Responsibilities—The Field Director, under the supervision of the CRS, will be responsible for the day-to-day activities of the testing and data recovery investigations, including management of field personnel and coordination of crews. The Field Director will also be responsible for compiling and ensuring the quality of the field data on a daily basis. Additionally, the Field Director will coordinate the work of any sub-consultants or other contractors participating in the cultural resources field investigations, and will be responsible for implementing the requirements of the environmental training for the crew, including daily safety briefings.

7.2.2 Crew Chiefs

Qualifications—The Crew Chief(s) will have an undergraduate degree in anthropology/archaeology, or a related field, and at least 1 year of experience as an archaeological crew chief with at least 3 months of experience in the region and 4 months of experience with comparable cultural resources in similar cultural contexts and environmental settings.

Responsibilities—The Crew Chief(s), in consultation with the Field Director, will be responsible for implementing the field strategies at individual resources. The Crew Chief will direct the field crew, lay out excavations, and compile collections and field documentation on a daily basis. Additionally, the Crew Chief will be responsible for implementing on-site safety procedures and/or environmental training.

7.2.3 Field Crew

Qualifications—Field crew members for any field recording or excavation activities will have an undergraduate degree in anthropology/archaeology, or a related field, and/or have attended a field school.

Responsibilities—Field crew members will conduct surface examinations and hand excavations, and monitor mechanical test investigation excavations. Each crew member will operate under the direct supervision of the Crew Chief and will conduct basic documentation of field operations, including the completion of excavation-level records, bag labeling, and trench monitoring forms.

7.2.4 Laboratory Director

Qualifications—The Laboratory Director will have an undergraduate degree in anthropology/archaeology, or a closely related field, and field school experience.

Responsibilities—The Laboratory Director will be responsible for directing all phases of laboratory processing of the data recovery and/or monitoring collections, including check-in, cleaning, sorting, cataloguing, analyzing, distributing special samples, and preparing for curation. The Laboratory Director will coordinate closely with the CRS to ensure that the appropriate data are documented and compiled.

7.3 Monitoring and Avoidance Procedures

This section describes the monitoring procedures that will apply Project-wide. Resource-specific monitoring and avoidance procedures will be included in resource-specific mitigation and/or treatment plans. The objectives of monitoring are to ensure and document avoidance of cultural resources subject to EFSC standards, to identify at the time of discovery any cultural resources exposed during ground disturbance, and to protect such resources from damage while recommendations of likely NRHP-eligibility are reviewed and approved by the SHPO (in consultation with ODOE and other appropriate parties, including appropriate tribes).

7.3.1 Cultural Resource Construction Monitoring

Cultural resource monitoring for the Project will be conducted Project-wide, unless otherwise specified by the ODOE or SHPO. For the purposes of this HPMP, cultural resource construction monitoring is defined as on-the-ground, close-up observation by a CRS or CRM meeting the qualifications prescribed in Section 7.1.

The CRS and/or CRM will be present during mechanical scraping, grading, excavating, and other ground disturbing activities (as applicable). Cultural resource monitoring will not be required once all surface and subsurface ground disturbance in a construction area is completed or if equipment or vehicles are traveling over previously disturbed surfaces. Routine travel on existing or disturbed roads or across disturbed transmission structure pads will not be monitored for cultural resources. However, additional blading or excavating at a depth beyond the previously disturbed area will be monitored for cultural resources, even within previously graded or bladed areas. A CRM will be required when sensitive resources barriers are installed to protect cultural resources subject to EFSC standards. The CRM will ensure that the barrier is erected in the proper place. The barriers or sensitive resource signage will be removed once construction is completed in that area.

The CRM will maintain daily monitoring logs (Appendix E – Monitoring Log) of Project-related construction monitoring activities. Logs will reflect the daily monitoring activities and will include:

- Date, time of work, and amount of time spent at a construction monitoring location;
- Area of work (defined by segment, tower structure number, and or milepost);

- Type of work, equipment present, and name of construction crew being monitored
- Construction activities being performed (e.g., grading, excavation, etc.);
- Documentation of successful resource avoidance;
- Activities for which there are cultural resource problems, non-compliances, or other concerns;
- Identification of an unanticipated discovery, steps taken to protect the discovery, and documentation of notifications (name, agency, time, and notes); and/or
- Color digital photographs (as appropriate) to document construction and monitoring activities and submitted as attachments to the daily log.

CRMs will prepare and provide their monitoring logs daily to the CRS via e-mail (original hard copies for Project records will be provided to the CRS in bulk at intervals determined by the CRS). The CRS will prepare and provide IPC monthly summary reports on the progress or status of cultural resources-related activities during active construction. The monthly reports will summarize construction progress, monitoring (monitor name, dates worked, finds, issues, etc.), and status of cultural resource-related issues. These reports will also include the appropriate state cultural resource forms for finds identified under the monitoring program (see Section 8). IPC will submit the reports to the ODOE to ensure compliance with the Site Certificate.

The CRS will direct the preparation and distribution of a Cultural Resources Monitoring Results report, or any other outstanding report actions (e.g., mitigation) under the HPMP, no later than 3 years after the completion of the relevant Project work element. All reports will be submitted to the ODOE, SHPO, and tribes. For additional survey reporting and review times during construction, see Section 7.4.1 below.

7.3.2 Change in Full-Time Monitoring Status

If the CRS determines that full-time monitoring is not necessary in certain construction locations or that monitoring will be conducted on an “as needed” intermittent schedule, the CRS will provide in writing (via email) to the ODOE, SHPO, and, if requested, tribes, explaining the decision to reduce the level of monitoring. Notification must be provided at least 14 days prior to implementing any change. The ODOE will provide written approval to the CRS and CIC via email within 10 days of receiving notice to reduce monitoring.

7.3.3 Inadvertent Discoveries

If a discovery is made in Oregon, the notification procedures found in the IDP (see Section 8) shall be followed.

The CRS will send the requesting tribes a notification (via letter or email) following the discovery of Native American cultural materials other than those considered isolated finds or archaeological objects (unless otherwise specified).

The CRS and the CRM(s) will have the authority to temporarily halt construction operations within a 200-foot radius of a find or exposed resource to determine if cultural resources subject to EFSC standards are present and if they will be significantly impacted by continuing construction operations. The CRS or CRM will be responsible for delineating the area within which construction will halt using flagging tape, rope, or some other means as necessary.

7.3.4 Flagging, Fencing, and Signage Measures

For Project construction activities, the CRM will flag, fence, or provide signage for previously recorded and newly identified culturally sensitive areas (i.e., significant cultural resources) that are within 200 feet of Project construction, to ensure such resources are avoided and that ground-disturbing construction activities do not impact flagged resource boundaries or

inadvertent discoveries. “Environmentally Sensitive Area” signage will be used for such areas during construction. The signage will be posted, with a buffer, around the cultural resource by the CRM one day prior (as practical) to construction in the area, to avoid drawing attention to the area prior to construction.

The CRS and/or a CRM will field check and maintain signage and ensure that it remains in place while construction activities in the vicinity are active. The CRS or CRM will remove the flagging and/or signs following the completion of Project-related construction activities in the vicinity.

7.3.5 Monitoring Locations and Schedule

The CRS and/or Lead CRM and CRM(s) will observe ground disturbance as specified in Section 7.3.1. The CRS will obtain a construction schedule from the Construction Contractor at least 2 weeks prior to the start of ground-disturbing activities to ensure proper CRM staffing and confirm monitoring locations. The CRS and/or Lead CRM will then establish a schedule for the CRM(s) to follow and a protocol for communication with the CIC and the CCEM, who will confer with the CRS on any changes to construction dates. Daily updates or changes to the construction schedule will be provided by the Construction Contractor to the CRS and the CIC, as appropriate.

7.4 Construction Compliance

The CRS and Lead CRM will coordinate with the CIC to monitor and report problem areas and any non-compliance issues to the ODOE. The CRS will then notify the CCEM, who will notify IPC’s Environmental Manager(s).

Non-compliance procedures will be specified in the Conditions of Site Certification and will be followed. If the non-compliance includes unauthorized or unmonitored ground disturbance, cultural resource surveys to determine presence of or damage to cultural resources will be required. An effects determination and mitigation may also be required. A written notice from the SHPO and ODOE will be required before construction will be allowed to continue in the non-compliance area. It should be noted that non-compliance regarding cultural resources can result in criminal and civil penalties. Disturbance of human remains or associated objects is considered a Class C Felony with fines (ORS 91.740-9760), and disturbance to archaeological sites can result in a Class B misdemeanor and fines (ORS 358.905-358.961).

7.4.1 Construction Change Management-Site Certificate Amendment

During the construction and O&M phases of the Project, unforeseen or unavoidable site conditions can result in the need for changes from approved mitigation measures and construction and O&M procedures. Additionally, the need for route realignments, extra workspaces, or access roads outside of the previously approved and certified Project Site Boundary may arise (e.g., to avoid an inadvertent discovery), resulting in the need to prepare an amendment to the Site Certificate (see Section 3.2). The CIC will consult with the CRS for any amendment(s) requested by IPC to ensure cultural resource compliance. All applicable procedures as specified in this HPMP and Conditions of Site Certification will be followed.

If a new area outside the previously surveyed Project Site Boundary is proposed for ground disturbance, a survey for cultural resources must be conducted and a report documenting presence or lack of surface resources submitted as part of the amendment approval process. If cultural resources are found, NRHP eligibility, effects determinations, and any applicable mitigation must be completed before ground disturbance can be permitted. Mitigation is only necessary for resources subject to EFSC standards.

IPC will submit copies of the draft inventory report to ODOE, SHPO, and requesting tribes for a review and comment period to be determined between IPC and ODOE. If the SHPO accepts the findings of the report, the ODOE can assume concurrence and issue the amendment or other applicable authorization to proceed with construction. If not, the report will be revised by the CRS and resubmitted to the same parties.

8.0 INADVERTENT DISCOVERY PLAN

This section provides guidance on the process that will be followed if previously undocumented cultural material or human remains are discovered during the construction and O&M phases of the Project. Inadvertent discovery procedures as presented below are designed to ensure compliance with the following:

- ORS 358.905-955, archaeological sites and objects;
- ORS 390.235, Permits and Conditions for Excavation and Removal of Archaeological or Historical Material; Rules; Criminal Penalty and its associated OAR 736-051-0080 to 0090; and
- ORS Chapter 91.740 to 97.760, Indian Graves and Protected Objects; Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Public and State-Owned Lands In Oregon created by the Government to Government Cultural Resources Cluster Group formed under Executive Order 96-30.

8.1 Inadvertent Discovery Procedures

This section provides detailed guidance for Project personnel to follow if cultural resource materials are inadvertently discovered. The procedures differ depending on whether unanticipated cultural materials (Section 8.1.1) or human remains (Section 8.1.2) are encountered. Key contacts are provided in Section 8.2.

8.1.1 Inadvertent Discovery of Cultural Materials

In the case of an inadvertent discovery of general cultural materials (i.e., archaeological sites), the following procedures will be followed and all notification will occur within 24 hours:

- The CRS or CRM(s) will have the authority to halt construction operations within a 200-foot radius of a find or exposed resource to access the find and determine whether the find is likely significant and would be affected by continuing construction operations, or if the find is non-cultural. Construction activities can continue outside the established 200-foot radius exclusion zone/no-work zone once the CRS or CRM(s) have determined the full horizontal extent of the resource either through surface observations or subsurface probes (as determined by the CRS).
- The CRM will inspect the area for additional resources. The CRM will use flagging tape, rope, or some other means necessary to delineate the area of the find within which construction will halt. This may also include off-site dirt or rock spoil from that area.
- The CRM will immediately notify the CRS (if not present) of the discovery, and provide the CRS with the Global Positioning System coordinates, photographs, and description of the observed cultural material.
- If an inadvertent discovery is identified by construction personnel, and a CRS or CRM is not present, the individual that identified the find must halt construction in the area of the find and contact the CRS immediately.

- The CRS will notify the ODOE, Oregon SHPO State Archaeologist or Assistant State Archaeologist, CCEM, IPC, the CIC, and any tribes that have requested notification, as appropriate, of the discovery. IPC will contact the appropriate landowner.
- ODOE will coordinate and consult with the SHPO State Archaeologist or Assistant State Archaeologist, landowner, and the appropriate tribe(s).
- The CRS will be responsible to notify and coordinate with the IPC's Environmental Manager(s) of the find and of the stop work activity, as applicable.
- The CRS will prepare a preliminary summary report containing detailed information regarding the observed cultural material, type (e.g., isolated find/archaeological object or site), period, Universal Transverse Mercator coordinates, legal description and location map, photographs, and recommendations regarding likely NRHP eligibility.
- The SHPO, in consultation with the ODOE and tribe(s), as appropriate, will determine the likely NRHP eligibility, the Project effects on the discovery, and the treatment of the discovery, based on the recommendations contained in the summary report provided by the CRS. Landowner approval will be required for any determined treatment.
  - If the discovery cannot be avoided, and more data are required to make a determination of NRHP-eligibility, IPC will direct the CRS to prepare and submit a testing plan to the SHPO, ODOE, landowner, and tribe(s), as appropriate, for review. Upon SHPO and landowner approval (and as applicable, the appropriate tribe(s)), IPC's CRS will execute the testing plan. Any excavation will be conducted under a state archaeological permit granted under ORS 390.235.
  - If the discovery is determined to be subject to the EFSC standards and the Project will have a significant impact on the resource, IPC will direct the CRS to prepare a treatment plan for review and approval by the SHPO (in consultation with ODOE and in coordination with the parties noted above), in an effort to reduce impacts to less than significant. The treatment plan will include (but not be limited to) a resource-specific research design, methods, analysis, disposition of any collected artifacts and curation (as applicable), and a schedule for completing work and report submittals.
  - Once the treatment plan is approved by the SHPO in writing (via email), IPC can direct the CRS to execute the treatment plan. Any excavation (testing/data recovery) on state lands will be conducted under a state archaeological permit granted by the State Parks and Recreation Department under ORS 390.235 (includes approval by state agency and the appropriate Native American tribe(s)) and OAR 736-051-0080, and on private land under OAR 736-051-0090 (includes ORS 390.235, and landowner's written permission).
  - Within one week of completion of mitigation, IPC will submit a preliminary report containing the results of the mitigation. A final mitigation report will be prepared and submitted to SHPO, ODOE, landowner, and tribe(s), as appropriate, within the timeframe as specified in the treatment plan.
- If the SHPO, in consultation with the ODOE and tribe(s), as applicable, determines the discovery will not be significantly impacted, the SHPO will contact IPC by telephone and in writing (via email) indicating that construction may resume. No further consultation will be necessary.
- No archaeological testing/excavation will occur and no artifacts will be collected without approval from ODOE, SHPO, landowner, and tribe(s), as applicable, and acquisition of appropriate state permit(s).

8.1.2 Inadvertent Discovery of Human Remains

In Oregon, the treatment of human remains will follow the protocol developed by the State of Oregon's Tribal/State Agency Government to Government Cultural Resource Cluster Group in 2006 (updated August 2014): *Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Public, State-Owned Lands In Oregon* (see Appendix F). Native American ancestral remains, funerary objects, sacred objects and objects of cultural patrimony associated with Oregon Tribes are protected under Oregon state law, including criminal penalties (ORS 97.740-.994 and 358.905-.961)

If human remains (including physical remains-bones, teeth, hair, ashes, or mummified or otherwise preserved soft issues of a human), burial, funerary objects, sacred objects, or objects of cultural patrimony are inadvertently discovered during Project construction, **ALL** human remains and associated burial associated material will be treated with dignity and respect, and the following procedures will apply:

PROTOCOL FOR THE IDENTIFICATION OF HUMAN REMAINS:

- **STOP CONSTRUCTION ACTIVITES**
  - Immediately halt construction within 200 feet radius of the remains.
  - Ensure the area is protected from additional disturbance with flagging, fencing, or by posting a CRM or other project personnel.
  - Ensure that the remains will be treated respectfully, and are not touched, moved, photographed, discussed on social media sources (e.g., Instagram, Facebook, Twitter, etc.), or further disturbed.
  - Stop Construction will remain in effect and construction will not proceed within a 200-foot radius around the discovery until the appropriate approvals are obtained.
- **NOTIFICATION:** Immediately notify the Oregon State Police and the CRS (if not on site). The CRS will immediately notify the SHPO, Legislative Commission on Indian Services (LCIS), ODOE, landowner, and IPC via telephone and in writing. The LCIS will determine the appropriate Native American tribe(s) to notify. Once identified by the LCIS, the appropriate Native American tribe(s) will be notified immediately by the CRS. See Section 8.2 below for contact information.
- For any human remains discovered on state or private lands in Oregon, ORS Section 97.740 through 97.760 will apply. Oregon laws (ORS 146.090 and .095) outline the types of deaths that require investigation and the accompanying responsibilities for that investigation. The law enforcement official, district medical examiner, and the district attorney for the county where the death occurs are responsible for deaths requiring investigation. Deaths that require investigation include those occurring under suspicious or unknown circumstances.
- If the human remains **are not clearly modern**, then there is a high potential that the remains are Native American and therefore ORS 97.745(4) applies, which requires immediate notification of State Police, SHPO, LCIS, and appropriate Native American Tribe(s) (as noted above).
- As noted above, human remains will be treated with respect, protected, and secured from further disturbance. The human remains and any associated artifacts should not be disturbed, manipulated, or transported from the original location until a plan is developed in consultation with the above named parties. These actions will help ensure compliance with Oregon state law that prohibits any person willfully removing human remains and/or objects of cultural significance from its original location, as defined in ORS 97.745.

- If the human remains are found to be Native American, the State Police, SHPO, ODOE, landowner, LCIS, CRS, and appropriate Native American Tribe(s) will consult and implement a culturally sensitive plan for reburial (if the remains cannot be avoided by the Project and/or if desired by the tribe(s)).
- If the human remains are found not to be of Native American descent, historic in nature, and are not part of a crime investigation, IPC will consult with the SHPO, ODOE, CRS, and landowner to develop and implement a plan for removal and reburial (if the remains cannot be avoided by the Project and/or if desired by the landowner).
- For all human remains, reburial plans (and any type of excavation) will follow Oregon state laws and will be developed and approved by the appropriate parties. Reburial plan(s) will be specific to each inadvertent discovery of human remains.
  - Per ORS 97.750, excavation by a Professional Archaeologist of a Native American cairn or burial [human remains] and associated material shall be initiated only after prior written notification to the SHPO and State Police, as defined in ORS 358.905, and with the prior written consent of the appropriate Indian (Native American) tribe(s) in the vicinity of the intended action. Failure of a tribe(s) to respond to a request for permission [to excavate] within 30 days of its mailing shall be deemed consent.
  - Per ORS 97.750 and 97.745, and as noted above, the LCIS will designate the appropriate tribe(s).

8.2 Key Contacts

Contact information for key state agency, tribal, IPC, and CRT members in the event of an unanticipated or inadvertent discovery is provided in Table 8-1.

Table 8-1. Key Project Contacts

Organization	Name	Role	Phone Numbers	Email
Oregon State Police	Chris Allori	Sergeant: identification of human remains	503-731-4717 (o) 503-708-6461 (c) 503-731-3030 (d)	TBD
ODOE	Kellen Tardaewether	Senior Siting Analyst; Lead state agency	503-373-0214 (o) 503-586-6551 (c)	Kellen.Tardaewether@oregon.gov
Oregon SHPO	Dennis Griffin	State Archaeologist	503-986-0674 (o) 503-881-5038 (c)	Dennis.griffin@state.or.us
Oregon SHPO	John Pouley	Assistant Archaeologist	503-986-0675 (o) 503-480-9164 (c)	John.pouley@state.or.us
Oregon SHPO	Jessica Gabriel	Historian	503.986.0677	Jessica.Gabriel@oregon.gov
LCIS	Karen Quigley	Executive Director; Identifies appropriate Native American Tribe(s) for Project.	503-986-1067 (o)	karen.m.quigley@state.or.us
IPC	Shane Baker	Senior Archaeologist	208-388-2925 (o)	sbaker@idahopower.com
IPC	Dave Valentine	Project Archaeologist	208-388-2855 (o)	dvalentine@idahopower.com
Project CRS	TBD	TBD	TBD	TBD
Project CCEM	TBD	TBD	TBD	TBD
CTUIR	Carey Miller	THPO	541-429-7234 (o)	careymiller@CTUIR.org
Burns Paiute Tribal Council	TBD			
Confederated Tribes of the Colville Reservation	TBD			
Confederated Tribes of the Warm Springs Reservation	TBD			
Fort McDermitt Shoshone-Paiute Tribes	TBD			
Klamath Tribes	TBD			
Nez Perce Tribe	TBD			
Shoshone-Bannock Tribes of the Fort Hall Indian Reservation	TBD			

c=cell, o=office, d=dispatch; TBD=to be determined.

9.0 REFERENCES CITED

Anderson, Stephen, Erin King, and Jenna Farrell
2018 *Boardman to Hemingway Transmission Line Project, Cultural Resource Technical Report, Morrow, Umatilla, Union, Baker, and Malheur Counties, Oregon*. Prepared by Tetra Tech, Inc. Golden, CO. Submitted to Idaho Power Company, Boise, ID and Oregon Energy Facility Siting Commission. Contract No. CM-3901.

AECOM (AECOM, Inc.)
2018 Intensive Level Survey – Visual Assessment of Historic Properties Report, Boardman to Hemingway Transmission Line Project. Prepared by AECOM, Inc., Portland, OR. Submitted to Idaho Power Company, Boise, ID,

Appendix A.1: Resource Inventory Tables with Management Recommendations for Resources Potentially Protected under OAR 345-022-0090

I. Potential Impacts to Historic, Cultural, and Archaeological Resources Under OAR 345-022-0090(1)(a)

The resources discussed in the below section apply to protections under OAR 345-022-0090(1)(a). The Department points to the language of the EFSC standard, specifically, "…resources that have been listed on, or would likely be listed on…" the common term used by SHPO and throughout the profession, is eligible or likely eligible for listing on the NRHP. Therefore, the terms eligible or likely eligible meet the meaning of *likely to be listed on the NRHP* in the EFSC standard. Resources inventoried in the analysis area that would not experience a direct or indirect impact, are not evaluated. The applicant included recommendations of eligibility and supporting documentation in ASC Exhibit S, Errata, and materials submitted to SHPO and the Department for all identified resources. Applicant recommendations, in general, include recommendations of eligible for listing on the NRHP, and not eligible for listing, and unevaluated (presumed or treated as likely eligible for listing). The Department, in consultation with SHPO and the applicant, determined that recommendations of "not eligible" will be treated as "unevaluated" for purposes of the Council's review. A resource designation of "unevaluated" means that it is treated as likely eligible for listing on the NRHP and the impact analysis and mitigation (if any) is evaluated based on that designation. Updated resource eligibility determinations will be submitted to the Department pending the Section 106 review.

II. Oregon Trail and National Historic Trails

Historic trails within the analysis area, as listed in ORS 358.057, include the Oregon National Historic Trail (NHT), Lewis and Clark NHT, Meek Cutoff, Nathaniel Wyeth Route, and Upper Columbia Route. Congress declared the 2,170-mile-long Oregon Trail a National Historic Trail in 1978. The applicant states that the proposed facility analysis area would cross the Oregon NHT 17 times along the route.[1] Separate from the NHT, the site boundary crosses 12 segments of the Oregon Trail. Of these total Oregon Trail resources, 9 NRHP-eligible segments would be crossed by the proposed facility and, for some segments, would be impacted by other views of the proposed facility within the geographic area visible from the resource (viewshed) (see Table HCA-3 below)

Table HCA-2: *Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts*, includes information from Exhibit S; Table S-2, SHPO comment letters, and ASC Errata information. Table HCA-2 identifies 29 trail resources within the analysis area (includes site boundary/direct and

[1] B2HAPPDoc3-36 ASC 19_Exhibit S_Cultural_ASC_Public 2018-09-28. Section 3.4.1.1.

visual impact areas). Table HCA-2 specifies the trail segment, general resource description, existing and proposed NRHP recommendations, and descriptions of the closest project component that was evaluated for impacts. The far-right column in Table HCA-2 provides additional descriptions and specifics about how the applicant would avoid direct and indirect impacts to each segment. Resources identified in Table HCA-2 are assumed to be likely eligible therefore are protected under the EFSC standard OAR 345-022-0090(1)(a)), however impacts to these resources are not expected or are avoided entirely, consequently there are not any impacts to protected resources for Council to evaluate for avoidance, minimization or mitigation.

The final resource eligibility determinations will be verified or established in the Section 106 compliance review and this information will be provided in the final HPMP and will be submitted to the Department prior to construction.

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
35MW00224 (Well Spring, Oregon Trail Site)	N/A	Morrow	Archaeological Site - Homestead & Trail	Listed (Criterion A - Draft MPDF)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	DOD	Yes	No further management
35MW00227	N/A	Morrow	Archaeological Site - Road	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area Proposed Route: Structure work area; Pulling & tension site; Existing road needing 21-70% modification West of Bombing Range Road Alternatives 1 & 2: No impacts	DOD	Yes	Avoid. Subsurface probing needed. If the Section 106 determination is eligible, applicant will avoid Site # 35MW227 as follows: Proposed Route: For the structure work area and pulling & tension site, applicant will relocate or reduce the size of those areas to avoid Site # 35MW227; for the existing road, all improvements will be made within the existing road prism thereby avoiding any new impacts; applicant will flag any portion of the boundary of Site # 35MW227 that occurs within 100 feet of construction activity. West of Bombing Range Road Alternatives 1 & 2: No avoidance measures are necessary as there are no direct impacts proposed for these alternatives.

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
35MW00230 (Emigrant Cemetery)	B2H-MO-004	Morrow	Archaeological Site - Cemetery	Listed (Criterion A - nomination and Draft MPDF)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	DOD	Yes	No further management
Oregon Trail - Unnamed Segment (Lindsey Feedlot Lane)	B2H-MO-008	Morrow	Historic Site/ Aboveground - Trail	Not Eligible	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	PV	Yes	No further management
TBD	Segment 3B2H-SA-03	Morrow	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	PV	Yes	Avoid. Archival research and documentation; Testing needed.

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD	Segment 3B2H-SA-04	Morrow	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	PV	Yes	Avoid. Archival research and documentation; Testing needed.
Oregon Trail - Unnamed Segment (Sand Hollow)	Segment 3B2H-SA-05	Morrow	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	PV	Yes	No further management
Oregon Trail - Well Spring Segment	B2H-MO-007 (4B2H-VIZ EK-01)	Morrow	Archaeological Site - Trail	Listed (Criterion A) (Boundary Increase - Draft MPDF)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	DOD	Yes	No further management

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
Oregon Trail – Well Spring Segment	3B2H-CH-01	Morrow	Archaeological Site - Trail	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Visual Assessment analysis area	DOD	Yes	No further management
TBD	Segment 4B2H-EK-02	Morrow	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Direct Analysis Area; Visual Assessment analysis area Proposed Route: Within 250 feet of structure work area West of Bombing Range Road Alternatives 1 & 2: No impacts	DOD	Yes	Avoid. Archival research and documentation; Testing needed. IPC will avoid Site # 4B2H-EK-02 as follows: Proposed Route: IPC will locate the structure work area to avoid Site # 4B2H-EK-02; IPC will flag any portion of the boundary of Site # 4B2H-EK-02 that occurs within 100 feet of construction activity. West of Bombing Range Road Alternatives 1 & 2: No avoidance measures are necessary as there are no direct impacts proposed for these alternatives
TBD	Segment 4B2H-EK-03	Morrow	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Visual Assessment analysis area	PV	Yes	Avoid. Archival research and documentation; Testing needed.

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD	Segment 5B2H-SA-01	Morrow	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Direct Analysis Area; Visual Assessment analysis area Proposed Route: Structure work area West of Bombing Range Road Alternatives 1 & 2: No impacts	DOD	Yes	Avoid. Archival research and documentation; Testing needed. IPC will avoid Site # 5B2H-SA-01 as follows: Proposed Route: IPC will relocate or reduce the size of the structure work area to avoid Site # 5B2H-SA-01; IPC will flag any portion of the boundary of Site # 5B2H-SA-01 that occurs within 100 feet of construction activity. West of Bombing Range Road Alternatives 1 & 2: No avoidance measures are necessary as there are no direct impacts proposed for these alternatives
35UM00365 (Meacham Pioneer Memorial Cemetery Site)	N/A	Umatilla	Archaeological Site - Cemetery	Not Eligible	Proposed Route	Visual Assessment analysis area	ODOT	Yes	No further management
35UM00472	N/A	Umatilla	Archaeological Site - Burial	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	Yes	No further management
35UN00435 (Oregon Trail/Ladd Canyon)	N/A	Union	Archaeological Site - Trail	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	Yes	No further management (not in viewshed)
35UN00517 (Oregon Trail)	N/A	Union	Archaeological Site - Trail	Eligible, Contributing	Proposed Route	Visual Assessment analysis area	PV, USFS	Yes	No further management

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
35UN0074	N/A	Union	Archaeological Site - Lithic Scatter, Homestead, Grave, Campground, & Trail	Not in accessible survey area. Previous recommendation: Eligible.	Proposed Route, Morgan Lake Alternative	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area Multi Use Area UN- 02 Existing road needing 21-70% modification	PV, ODOT	Yes	Avoid. Survey location when access granted. IPC will either: Relocate MUA UN-02 out of Site # 35UN74 entirely; Or Survey the relevant portions of Site # 35UN74 to verify the boundaries of the trail, campground, lithic scatter, homestead, and grave features; relocate or reduce the size of MUA UN-02 to avoid the verified boundaries of those features; and, if avoidance is not possible, provide compensatory mitigation as described in the HPMP; graves will be treated as specified in the HPMP; IPC will flag any portion of the boundary of Site # 35UN74 that occurs within 100 feet of construction activity.
Oregon Trail - Whiskey Creek Segment (O-BK-UN-1)	B2H-UN-005	Union	Archaeological Site - Trail	Eligible	Proposed Route, Morgan Lake Alternative	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area Proposed Route: Existing road needing 21-70% modification; New road, bladed Morgan Lake Alternative: No impact	BLM, PV	Yes	No further management. If the Section 106 determination is eligible, applicant will avoid Site # B2H-UN-005 as follows: Proposed Route: For the new road, applicant will relocate or reduce the size of the new road to avoid Site # B2HUN-005; for the existing road, all improvements will be made within the existing road prism thereby avoiding any new impacts; applicant will flag any portion of the boundary of Site # B2H-UN-005 that occurs within 100 feet of construction activity. Morgan Lake Alternative: No avoidance measures are necessary as there are no direct impacts proposed for this alternative.

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD (Oregon Trail, California Gulch/Blue Mountain Segment)	B2H-UN-001	Union	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV, USFS	Yes	No further management
35BA01366 (Oregon Trail)	Segment 3B2H-CH-06	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	PV	Yes	No further management
Oregon Trail ACEC - Swayze Creek Segment	B2H-BA-291	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV	Yes	No further management
Signature Rock	B2H-BA-286	Baker	Historic Site/ Aboveground - Historic Rock Markings	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	Yes	No further management.
TBD (Oregon Trail, Powell Creek Segment)	B2H-BA-337	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV	Yes	No further management
TBD (Oregon Trail, White Swan)	B2H-BA-281	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV	Yes	No further management (not in viewshed)
35ML00747 (Oregon Trail, Tub Mountain Segment)	B2H-MA-010	Malheur	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV, STL	Yes	No further management (not in viewshed)

Table HCA-2: Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
0503040048SI	Segment 0503040048SI	Malheur	Archaeological Site - Trail Segment	Not Eligible / Not contributing	Proposed Route	Visual Assessment analysis area	BLM	Yes	No further management
Meek Cutoff / Meek Study Route Hambleton Line	B2H-MA-003	Malheur	Archaeological Site - Trail	Likely Eligible/ Unevaluated (segment)	Proposed Route	Direct Analysis Area; Visual Assessment analysis area	BLM, BR, FWS, PV, STL, STL, STP, USDA, USFS	Yes	No further management
The Dalles Military Road	B2H-MA-007	Malheur	Archaeological Site - Road	Unevaluated No historic or archaeological evidence identified during survey. Identified through historic map review.	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	PV	Yes	No further management
The Dalles Military Road	B2H-MA-007	Malheur	Archaeological Site - Road	Unevaluated No historic or archaeological evidence identified during survey. Identified through historic map review.	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	PV	Yes	No further management

1

Oregon Trail Resources: Potential Indirect Impacts

Table HCA-3: *Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts*, below lists the inventoried NRHP or or likely-NRHP eligible trails resources that, based on the applicants' VAHP ILS, that could experience adverse indirect impacts from proposed facility visibility for Oregon Trail/NHT trail segments that are NRHP-listed or eligible. Table HCA-3 also includes applicant representations to avoid direct impacts to Oregon Trail resources. These measures include reducing or relocating facility components and/or activities, avoiding construction activities within 100 feet of the identified resource characteristics, flagging resource boundaries, and staying within existing areas of disturbance. Table HCA-3, *Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts*, also represents the Oregon Trail as one linear resource and also provides a discussion of the individual trail segments.

Table HCA-3 includes resource identification numbers, general resource description, facility location and components associated with the impact, and the expected visual impact from the proposed facility. The far-right column includes a compilation of mitigation information. The mitigation proposals are discussed further in the below section detailing the recommended site certificate condition for the submission, review and approval of the final Historic Properties Management Plan (HPMP).

The final resource eligibility determinations and appropriate mitigation measures for the Oregon Trail as a linear resource will be verified or established in the Section 106 compliance review and this information will be provided in the final HPMP. Also submitted to the Department for its review and approval, in consultation with SHPO. via the HPMP will be mitigation measures for eligible segments of the Oregon Trail, if not already addressed in Section 106, as discussed further below.

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
Linear Resource									
Oregon Trail/ Oregon NHT	N/A	Morrow, Umatilla, Union, Baker, Malheur	Archaeological Site - Trail	Listed (Criterion A)	Proposed Route, Morgan Lake Alternative, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2	Avoidance measures for Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	BLM, BOR, DOD, FWS, ODOT, PV, STL, STL, STP, USDA, USFS	No - Potential visual impact. Avoidance measures to prevent direct impacts.	Note - Oregon Trail presented in this row as one linear resource, see other rows in table for evaluation of individual segments. Avoid Direct Impacts. Archival research and documentation; Testing needed.-Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification
By Segment									
Sand Hollow Battleground	SL-MO-001, SL-MO-005	Morrow	HPRCSIT/TCP/Trail	Eligible (Criteria A and B)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2,	Avoidance measures for Direct Analysis Area (Construction Footprint); Visual	BLM, DOD, PV	No - Potential visual impact	Note-Sand Hollow Battleground is considered both a TCP/HPRCSIT and an Oregon Trail-related resource. See also discussion in Tribal Resources Section. Public Archaeology Funding, Public Interpretation Funding, Consultation.--Update recordation (if necessary. Off-Site: publish research focus article or

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
					Proposed Route	Assessment analysis area			professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment---• Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification
TBD	Segment 6B2H-RP-09	Union	Archaeological Site - Cairn(s) & Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Avoidance measures for Direct Analysis Area (Construction Footprint); Visual Assessment analysis area Proposed Route: Structure work area; Within 250 feet of existing road	PV	No - Potential visual impact	Avoid Direct Impacts. Proposed Route: For the structure work area and pulling & tension site, IPC will relocate or reduce the size of those areas to avoid Site # 6B2H-RP-09; for the existing road, IPC will flag any portion of the boundary of Site # 6B2H-RP-09 that occurs within 100 feet of construction activity. Morgan Lake Alternative: No avoidance measures are necessary as there are no direct impacts proposed for this alternative. Archival research and documentation; Testing needed.---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g.,

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
						needing 21-70% improvement Morgan Lake Alternative: No impact			website, kiosk, etc.), rehabilitation of off-site trail segment---• Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
Goodale's/ Sparta Trail	B2H-BA-327	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV	No - Potential visual impact	Design Modification, Public Interpretation Funding, and/or Print/Media Publication---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification
TBD	Segment 3B2H-CH-05	Baker	Archaeological Site - Trail Segment & Utility Line	Trail Segment: Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C); Utility Line: Not Eligible	Proposed Route	Avoidance measures for Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	PV	No- Potential visual impact	S-6: Trail Segment: Avoid Direct Impacts. IPC will either: Relocate the road out of Site # 3B2H-CH-05 entirely; Or, Relocate the new road to avoid Site # 3B2H-CH-05 where possible; and, if avoidance is not possible, provide compensatory mitigation as described in the HPMP; IPC will flag any portion of the boundary of Site # 3B2H-CH-05 that occurs within 100 feet of construction activity.

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
									Archival research, documentation, and testing needed; Utility Poles: No Further Management; S- 10: Design Modification, Public Interpretation Funding, and/or Print/Media Publication---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD (Oregon Trail, Straw Ranch 1 & 2 Segments)	B2H-BA-285	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area BLM Straw Ranch ACEC within 125 feet of New Road, Primitive	BLM, PV	No - Potential visual impact	Design Modification, Public Interpretation Funding, and/or Print/Media Publication. IPC will locate the new road to avoid the ACEC boundaries; IPC will flag any portion of the boundary of Site # B2H-BA-285 that occurs within 100 feet of construction activity.--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD (Oregon Trail, Virtue Flat, Flat Segment and Flagstaff Hill))	B2H-BA-282	Baker	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Avoidance measures for Direct Analysis Area (Construction Footprint); Visual Assessment analysis area Structure work area; Existing road needing 71-100% modification	BLM, PV	No - Potential visual impact	Design Modification, Public Interpretation Funding, and/or Print/Media Publication. For the structure work area and pulling & tension site, IPC will relocate or reduce the size of those areas to avoid Site # B2H-BA-282; for the existing road, all improvements will be made within the existing road prism thereby avoiding any new impacts; IPC will flag any portion of the boundary of Site # B2H-BA-282 that occurs within 100 feet of construction activity---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment---• Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification
Oregon Trail ACEC - Alkali Springs Segment	B2H-MA-041	Malheur	Historic Site/ Aboveground - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM	No - Potential visual impact	Design Modification, Public Interpretation Funding, and/or Print/Media Publication The commemorative sign at the site has

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
									provided sufficient interpretation of the area and the trail within it. Therefore, the recorded segment is recommended as a non-contributing element of the Oregon NHT and is not eligible under NRHP Criteria A, B, C, or D, and no further management consideration of the resource is recommended.
TBD	Segment 4B2H-EK-41	Malheur	Archaeological Site - Trail Segment	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Avoidance measures for Direct Analysis Area; Visual Assessment analysis area BLM Within 125 feet of New Road, Primitive and structure work area	PV	No - Potential visual impact	Avoid Direct Impacts. IPC will locate the new road and structure work area to avoid Site # 4B2H-EK-41; IPC will flag any portion of the boundary of Site # 4B2H-EK-41 that occurs within 100 feet of construction activity. Archival research and documentation; Testing needed.---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification

Table HCA-3: NRHP-Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts

Assigned Trinomial or Other ID	Pedestrian Survey or Visual Assessment Temporary Resource #	County	Resource Type and Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land Ownership	Avoided Impact	Attachment S-9 Avoidance Measure or/and Management Recommendations (HPMP)
TBD (Oregon Trail, Birch Creek Segment)	B2H-MA-042	Malheur	Archaeological Site - Trail	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	BLM, PV	No - Potential visual impact	Design Modification, Public Interpretation Funding, and/or Print/Media Publication---Update recordation (if necessary. Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.), rehabilitation of off-site trail segment--- • Recording—including HABS/HAER/HALS • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans • Design Modification

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Evaluation of Mitigation for Indirect Impacts per NRHP-Eligible Oregon Trail/NHT Segment

As presented in Table HCA-3: *NRHP Eligible Oregon Trail/NHT Inventory in Analysis Area with Potential Indirect Impacts,* Oregon Trail/NHT segment locations were the proposed facility would cross, or be substantially visible from, would result in adverse visual impacts to the resource and rely on the definition of mitigation (OAR 345-010-0010(33)).

Based on the extent of potential adverse visual impacts to the NRHP-eligible Oregon Trail/NHT resources and within the 5-mile resource viewshed of the resource identified in Table HCA-3, at least one minimization measure (design modification) and one measure resulting in restoration; preservation and maintenance; or compensation (OAR 345-001-0010(33)(b) and; (c), (d) or (e)) directly benefiting the affected area – which the Department recommends be defined as the county within which the impacted resource is located. To impose this requirement, the Department recommends Council require that Attachment S-9 the HPMP include Table HCA-4b as presented below.

Table HCA-4b: Department Recommended Mitigation for NRHP-Eligible Oregon Trail/NHT Segments

Table HCA-4b: Department Recommended Mitigation for NRHP-Eligible Oregon Trail/NHT Segments

Mitigation
The HPMP shall establish the following mitigation for each impacted NHRP-Eligible Oregon Trail/NHT Segment:
At least one of the following (OAR 345-001-0010(33)(b)):
Design modification
And, at least one of the following (OAR 345-001-0010(33)(c)-(e)), with a demonstrated direct benefit to affected area (county of resource site), in order of priority:
Purchase of conservation easement or other land protection where trail traces exist
Historic trails restoration within and outside the facility area
Land acquisition
Public signage, publication/print/media, and/or interpretive plans
Trail segment management plans
Additional literature or archival review (e.g. historic maps, local papers);
Remote sensing
National Register nomination
Recording—including HABS/HAER/HALS
Funding for public interpretation, archeological resource, or other program benefiting Oregon Trail resources
Acronyms: HABS – Historic American Building Survey; HAER – Historic American Engineering Record; HALS –Historic American Landscape Survey Notes:

Table HCA-4b: Department Recommended Mitigation for NRHP-Eligible Oregon Trail/NHT Segments

Mitigation
1. Required mitigation established through the federal Section 106 compliance review may be used to satisfy the EFSC mitigation requirement for listed or likely NRHP-eligible Oregon Trail/NHT trail segments if applicant can demonstrate that it addresses both the design modifications and the restoration; preservation and maintenance; or compensation mitigation within affected area (county), as included in this table [Table HCA-4b of the HPMP]. If not duplicated through the federal Section 106 process, the applicant shall establish the scope and scale of Table HCA-4b mitigation, prior to construction, subject to Department review and approval, as part of the EFSC-specific HPMP, as outlined in recommended Historic, Cultural and Archeological Resources Condition 2.

Applicability of Visual Impact Mitigation for Protected Resources with Shared Viewsheds

Many NRHP-eligible Oregon Trail/NHT segments identified in Table HCA-3 are also protected under, or located within resources protected under, the Council's Protected Areas, Recreation, Scenic and Land Use standards. To minimize unnecessary duplication in mitigation and appropriately apply mitigation for the same or similar visual impact, mitigation proposed by the applicant, if not already represented by the applicant, be further modified (Table HCA-4b), would also reduce proposed facility visual impacts to protected resources within the 5-mile viewshed of NRHP-Eligible Oregon Trail/NHT segments listed in Table HCA-3.

The certificate holder is also required to employ design modifications– and, within the same affected area, restore; preserve or maintain; or compensate for the visual impact using an entity or project that would directly benefit the same county, based on the mitigation presented in Table HCA-4b above, which is the same mitigation items discussed in HPMP Section VII. The Department notes that if the mitigation resulting from the Section 106 compliance review meets the requirements included in Table HCA 4b, in each affected county, then that would satisfy this requirement and may be updated in the HPMP.

Evaluation of Mitigation for Indirect Impacts per NRHP-Eligible Oregon Trail/NHT as a Linear Resource (Cumulative Impacts)

Final resource eligibility determinations will be verified or established in the Section 106 compliance review and this information would be provided in the final HPMP, submitted to the Department for its review and approval, in consultation with SHPO. The Department notes that its review and approval would include resources evaluated under OAR 345-022-0090(1)(a) and (b), discussed later in this section; appropriate mitigation measures for those resources. The information contained in Table HCA-3, includes how the sensitive Oregon Trail resources would be avoided, reduced, and/or mitigated consistent with the requirements of Section 6.2.2 of the HPMP and includes the site-specific measures contained in Table 6-3 from the HPMP and the framework outlined in Table 6-4 of the HPMP. This compiled information has been included in the HPMP.

III. Tribal Resources

Under OAR 345-001-0010(52) any tribe identified by the Legislative Commission on Indian Services (LCIS) that may be affected by the proposed facility is identified as a reviewing agency in the EFSC review process. The following Tribes were identified by LCIS as being potentially affected by the proposed facility:

- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of the Warm Springs Indian Reservation of Oregon
- Burns Paiute Tribe

Table HCA-5 below provides information that the applicant provided on three historic properties of religious and cultural significance to Indian tribes (HPRCSITs). Table HCA-5 only represents the HPRCSITs described by the applicant in Exhibit S and that are available for public disclosure in this order and associated application materials.

Table HCA-5: Exhibit S Historic Properties of Religious and Cultural Significance to Indian Tribes

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Table HCA-5: Exhibit S Historic Properties of Religious and Cultural Significance to Indian Tribes

Assigned Trinomial or Other ID	Visual Assessment Temporary Resource #	County	Generalized Resource Description	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Impact Avoided?/ Project Effect	Management Recommendation
Nisxt	SL-MO-003	Morrow	TCP/ HPRCSIT	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	No - Potential visual impact	Consultation with Confederated Tribes of the Yakama Nation
Sisupa	SL-MO-004	Morrow	TCP/ HPRCSIT	Eligible (Criteria A and D)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2, Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	DOD, PV	No - Potential visual impact	Public Archaeology Funding, Consultation.
Sand Hollow Battle-ground	SL-MO-001, SL-MO-005	Morrow	TCP/ HPRCSIT	Eligible (Criteria A and B)	Proposed Route, West of Bombing Range Road Alternative 1, West of Bombing Range Road Alternative 2, Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	BLM, DOD, PV	No - Potential visual impact	Public Archaeology Funding, Public Interpretation Funding, Consultation.

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IV. Other Resources Potentially Impacted under OAR 345-022-0090(1)(a)

Table HCA-6, *Potentially Impacted Resources under OAR 345-022-0090(1)(a)*, below represents all the resources inventoried in the site boundary/direct analysis area, and within the visual impact area/Area of Potential Effect (APE) that may experience a direct or indirect impact. Table HCA-6 is generated from the information provided in ASC Exhibit S; Table S-2, and the Exhibit S and HPMP Errata. Table HCA-6 includes resources that may potentially be protected under OAR 345-022-0090(1)(a) and OAR 345-022-0090(1)(b) of the ESFC standard. If a resource is not eligible for listing on the NRHP, it may qualify as an archaeological object or archaeological site as defined in statute and covered under OAR 345-022-0090(1)(b). Table HCA-6 does not include resources that the applicant proposes would only be potentially protected under sub (b) of the standard. Table HCA-6 also excludes Oregon Trail/NHT and historic properties of religious and cultural significance to Indian tribes (HPRCSITs). The table provides the resource identification, generalized description, the project component that may create the impact, whether there is a potential direct or indirect impact, and some management notes represented for additional activities and avoidance measures. To align the EFSC process with the federal Section 106 compliance review, many resources that the applicant recommended as "not eligible" have been changed and evaluated in this order as "unevaluated/likely eligible", therefore protected under OAR 345-022-0090(1)(a). The final resource designations, avoidance, and mitigation measures resulting from the Section 106 compliance review identified in Table HCA-6 shall be provided to the Department in the final HPMP.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

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Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
Segment 4B2H-EK-26/ OWR&N Roundhouse and OWR&N/OSL Joint Railyard	Baker	Railroad Segment & Structure/ Historic Archaeological Site	Unevaluated (Criterion D); Not Eligible (Criteria A, B, and C)	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-SA-12	Baker	Homestead / Historic Archaeological Site	Unevaluated (Criteria A, B, and D); Not Eligible (Criterion C)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-SA-16	Baker	Ranching / Historic Archaeological Site	Unevaluated (Criteria A, B, and D); Not Eligible (Criterion C)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
0503050334SI	Baker	Cairn(s)/ Undetermined Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
14S44E14-2	Baker	Cairn(s), Lithic Scatter, & Rock Alignment(s)/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
35BA00372	Baker	Rock Alignment(s)/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35BA00388	Baker	Rock Alignment(s)/ Undetermined Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35BA01423	Baker	Cairn(s) & Hunting Blind/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential cumulative visual impact
4B2H-EK-08	Baker	Mining / Historic Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM, PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/ indirect impact. Avoid direct impact until eligibility determined. Research Needed.
4B2H-EK-10	Baker	Lithic/Tool Scatter/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/ indirect impact. Avoid direct impact until eligibility determined. Research Needed.
4B2H-EK-32	Baker	Lithic/Tool Scatter, Ranching, Water Conveyance/Multicomponent Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-MC-02	Baker	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
6B2H-MC-05	Baker	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
6B2H-SA-14	Baker	Lithic Scatter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed
N/A	Baker	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
4B2H-EK-30	Baker	Water Conveyance / Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
6B2H-RP-02	Baker	Mining / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-SA-07	Baker	Homestead / Historic Archaeological Site	Eligible (Criterion C); Unevaluated (Criteria A, B, and D)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-DM-07	Baker	Homestead / Historic Archaeological Site	Eligible (Criterion A), Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
Benson Reservoir	Baker	Water Conveyance / Historic Site Aboveground	Eligible (Criteria A and B); Not Eligible (Criteria C and D)	Proposed Route	Direct Analysis Area; Visual Assessment analysis area	BLM, PV	a) Historic Property	Potential visual impact. Avoid Direct Impacts
N/A	Malheur	Rockshelter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential visual impact
35ML01549	Malheur	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35ML01550	Malheur	Rock Alignment(s)/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
35ML01552	Malheur	Rock Alignment(s)/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35ML01553	Malheur	Cairn(s)/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35ML01959	Malheur	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
35ML01960	Malheur	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BLM	a) Potential Historic Property	Potential cumulative visual impact
B2H-EE-37	Malheur	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Potential Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-EE-38	Malheur	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Potential Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-SA-29	Malheur	Lithic Scatter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Potential Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-SA-42	Malheur	Quarry / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area	BLM	a) Potential Historic Property	Potential direct/indirect

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
					(Construction Footprint)			impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-SA-44	Malheur	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Potential Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
N/A	Malheur	Quarry, Refuse Scatter, & Water Conveyance /Multicomponent Archaeological Site	Pre-Contact Component: Eligible (Criterion D), Not Eligible (Criteria A – C); Historic Component: Not Eligible	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
3B2H-SA-27	Malheur	Lithic Scatter & Refuse Scatter /Multicomponent Archaeological Site	Pre-Contact Component: Eligible (Criterion D), Not Eligible (Criteria A – C); Historic Component: Not Eligible	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
4B2H-EK-48	Malheur	Quarry & Refuse Scatter / Multicomponent Archaeologic al Site	Pre-Contact Component: Eligible (Criterion D), Not Eligible (Criteria A – C); Historic Component: Not Eligible	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
4B2H-EK-50	Malheur	Lithic Scatter & Refuse Scatter /Multicomponent Archaeological Site	Pre-Contact Component: Eligible (Criterion D), Not Eligible (Criteria A – C); Historic Component: Not Eligible	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
35ML1522	Malheur	Open Camp / Pre-Contact Archaeologic al Site	Unevaluated/Likely Eligible (from Table S-2: Not in accessible survey area.)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
VM-11-01	Malheur	Groundstone / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not identified.)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
2B2H-SA ISO-14	Malheur	Refuse / Historic IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Double Mountain Alternative	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
3B2H-SA ISO-35	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-SA ISO-01	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
B2H-EE-ISO-23	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
B2H-SA-ISO-39	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
B2H-SA-ISO-52	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
B2H-SA-ISO-54	Malheur	Debitage / Pre-Contact IF/ Archaeological Object	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological object not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed (IF).
6B2H-SA-01	Malheur	Mining / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-SA-02	Malheur	Refuse Scatter / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
B2H-SA-31	Malheur	Refuse Scatter / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	None - Archaeological site not eligible for NRHP. Federal land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
Kingman Lateral	Malheur	Water Conveyance /Historic Site/Aboveground	No historic or archaeological evidence identified during survey. Identified through historic map review.	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM, BLM, BLM, BR, BR, BR, BR, PV	None - Identified through historic map review. No physical evidence.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
Ontario to Burns Freight Road	Malheur	Road / Historic Archaeological Site	No historic or archaeological evidence identified during survey. Identified through historic map review.	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM, PV	None - Identified through historic map review. No physical evidence.	Potential direct/indirect impact. Avoid direct impact until eligibility determined.
3B2H-SA-26	Malheur	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
3B2H-SA-28	Malheur	Quarry / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
3B2H-SA-30	Malheur	Quarry / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
3B2H-SA-31	Malheur	Quarry / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
4B2H-EK-42	Malheur	Lithic/Tool Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Data Recovery. Potential direct/indirect impact. Avoid direct impact until eligibility determined.
4B2H-EK-49	Malheur	Lithic Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
4B2H-EK-51	Malheur	Lithic Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
4B2H-EK-52	Malheur	Lithic Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
4B2H-EK-53	Malheur	Lithic Scatter / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
6B2H-SA-04	Malheur	Quarry / Pre-Contact Archaeological Site	Eligible (Criterion D); Not Eligible (Criteria A – C)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM	a) Historic Property	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.
35ML00552 (Ali-Alk Stacked Stone Rings)	Malheur	Stone rings / Pre-Contact Archaeological Site	Eligible	Proposed Route	Visual Assessment analysis area	PV	a) Historic Property; b) Archaeological site on private land	Potential visual impact
N/A	Malheur/ O wyhee	Quarry / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM, PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
N/A	Morrow	Midden / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	FWS	a) Potential Historic Property	Potential visual impact
N/A	Morrow	Shell Midden & Temporary Camp/Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	FWS	a) Potential Historic Property	Potential visual impact
35MW00011	Morrow	Midden /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	FWS	a) Potential Historic Property	Potential visual impact

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
35MW00248	Morrow	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential visual impact
126CSF-Resource 11	Morrow	Survey Marker / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not identified.)	West of Bombing Range Road Alternative 1	Direct Analysis Area (Construction Footprint)	PV	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property and/or b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
126CSF-Resource 4	Morrow	Road / Historic Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not identified.)	Proposed Route	Direct Analysis Area (Construction Footprint)	DOD	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
4-2-IF	Morrow	Refuse / Historic IF/Archaeologic al Object	Unevaluated/Likely Eligible (from Table S-2:Not identified.)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property and/or b) Archaeological object on private land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
CFR 1064 (Vey Ranch)	Morrow	Ranch / Historic Site/ Aboveground	Eligible (Criterion A)	Proposed Route	Visual Assessment analysis area	PV	a) Historic Property	Potential visual impact. NRHP nomination and/or public interpretation/fundi ng
UPRR	Morrow, Umatilla, Union, Baker, Malheur	Railroad / Archaeological Site & Historic Site/ Aboveground	Multiple Segments, varying eligibility recommendations)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
SL-UM-010 (Lookout T2S, R34E, S 18)/ Historic Lookout Tower	Umatilla	Forestry / Historic Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	BIA	a) Potential Historic Property	Potential visual impact
6B2H-MC-13	Umatilla	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-MC-14	Umatilla	Refuse Scatter & Structure/ Historic Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-MC-15	Umatilla	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
6B2H-MC-18	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-MC-19	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-MC-23	Umatilla	Hunting Blind / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-MC-30	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-MC-31	Umatilla	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-TH-01	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-TH-04	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
N/A	Umatilla	Cabin / Multicomponent Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	CTUIR	a) Potential Historic Property	Potential visual impact
UP-106	Umatilla	Cabin /Historic Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	CTUIR	a) Potential Historic Property	Potential visual impact
N/A	Umatilla	Cairn(s) /Pre-Contact Archaeological Site	Eligible (Criteria TBD)	Proposed Route	Visual Assessment analysis area	BIA	a) Historic Property	Potential visual impact
Range Unit 12 Site 2	Umatilla	Cairn(s) / Pre-Contact Archaeological Site	Eligible (Criteria TBD)	Proposed Route	Visual Assessment analysis area	BIA	a) Historic Property	Potential visual impact
UP-102	Umatilla	Structure(s) Historic Site/ Aboveground	Eligible (Criteria TBD)	Proposed Route	Visual Assessment analysis area	BIA	a) Historic Property	Potential visual impact

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
B2H-UM-006 /Daly Wagon Road	Umatilla	Wagon Road / Historic Site/ Aboveground	Eligible (Criteria A and C)	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	BIA, BLM, BLM, BLM, BLM, PV	a) Historic Property	Potential visual impact. Public Interpretation, Funding, Print/Media Publication
35UN00459	Union	Rock Cairn / Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential cumulative visual impact
35UN00493	Union	Rock Alignment Undetermined Archaeological Site	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential cumulative visual impact
6B2H-MC-07/6B2H-MC-07 / Clover Creek Valley Homestead	Union	Homestead /Historic/Abovegound	Unevaluated	Proposed Route	Visual Assessment analysis area	PV	a) Potential Historic Property	Potential visual impact. Additional Research; Design Modification; Public Interpretation Funding, and/or Print/Media Publication
N/A	Union	Lithic/Tool Scatter, Homestead, & Refuse Scatter/ Multicomponent Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
6B2H-MC-06	Union	Cairn(s) & Lithic/Tool Scatter/ Pre-Contact Archaeological Site	Unevaluated	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-RP-08	Union	Cairn(s) /Pre-Contact Archaeological Site	Unevaluated	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
6B2H-RP-10	Union	Cairn(s) / Historic Archaeological Site	Unevaluated	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
B2H-SA-24	Union	Rock Alignment /Undetermined Archaeological Site	Unevaluated	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	PV	a) Potential Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Consultation Needed.
35UN0097	Union	Temporary Camp & Ranching / Multicomponent Archaeological Site	Pre-Contact Component: Eligible (Criterion D). Historic Component: Not Eligible	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	PV	a) Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Data Recovery.

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
N/A	Union	Lithic Scatter / Pre-Contact Archaeological Site	Unevaluated/Likely Eligible (from Table S-2: Not in accessible survey area.)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property and/or b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
ISO-001	Union	Logging / Historic IF/ Archaeologic al Object	Unevaluated/Likely Eligible (from Table S-2: Not in accessible survey area.)	Proposed Route	Direct Analysis Area (Construction Footprint)	PV	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property and/or b) Archaeological object on private land.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
35UN0280	Union	Lithic Scatter / Pre-Contact Archaeological Site	Unevaluated/Likely Eligible (from Table S-2:Not identified.)	Proposed Route	Direct Analysis Area (Construction Footprint)	USFS	Unknown - Not identified during pedestrian survey. Requires additional survey to determine if subject to a) Historic Property.	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
B2H-BS-102	Union	Utility Line / Historic Site	Unevaluated/Likely Eligible (from Table S-2:Not Eligible)	Proposed Route	Direct Analysis Area	USFS	None - Archaeological site not eligible	Potential direct/indirect impact. Avoid direct

Table HCA-6: Potentially Impacted Resources under OAR 345-022-0090(1)(a)

Temporary Resource #: Ped. Survey/Visual Assessment OR Assigned Trinomial	County	Generalized Resource Description/ Resource Type	NRHP Recommendation	Project Route(s)	Project Component	Land ownership	Applicable EFSC Standard	Project Impacts and Management Comments
					(Construction Footprint)		for NRHP. Federal land.	impact until eligibility determined.
Segment 6B2H-RP-09	Union	Cairn(s) & Trail Segment / Historic Archaeological Site	Eligible, Contributing (Criterion A); Unevaluated (Criterion D); Not Eligible (Criteria B and C)	Proposed Route	Direct Analysis Area (Construction Footprint); Visual Assessment analysis area	PV	a) Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
35UN0052 (Stockhoff Basalt Quarry Site)	Union	Cairn(s), Quarry, & Homestead /Multicomponent Archaeological Site	Eligible (Criterion D)	Proposed Route	Direct Analysis Area (Construction Footprint)	BLM, PV	a) Historic Property; b) Archaeological site on private land	Potential direct/indirect impact. Avoid direct impact until eligibility determined. Testing Needed.
6B2H-MC-10	Union	Hunting Blind	Unevaluated	Morgan Lake alternative	Visual Assessment analysis area	PV	a) Historic Property; b) Archaeological site on private land	6B2H-MC-10 is 5.14 meters south of the direct analysis southern boundary. Additional Research; Design Modification; Public Interpretation Funding, and/or Print/Media Publication

V. Potential Impacts to Historic, Cultural, and Archaeological Resources Under OAR 345-022-0090(1)(b)

Under OAR 345-022-0090(1)(b), for a proposed facility located on private land, the Council must find that the construction and operation of the facility, taking into account mitigation, are not likely to result in significant adverse impacts to archaeological objects, as defined in ORS 358.905(1)(a)[2], or archaeological sites, as defined in 358.905(1)(c).[3] The applicant explains that to maintain consistency with studies completed for the ASC Exhibit S for Council's evaluation and for the federal regulatory compliance, it assumed historic archaeological objects and sites must have been constructed or created 50 years ago or more, compared to 75 years as identified in 358.905(1)(a).[4]

If the lead federal agency disagrees with the not eligible determination, the resource would be considered eligible for listing on the NRHP and therefore protected under OAR 345-022-0090(1)(a). Table HCA-7, *Inventoried Resources under OAR 345-022-0090(1)(b)*, includes resources that the applicant recommends as not eligible for listing on the NRHP, but that may be evaluated and protected under OAR 345-022-0090(1)(b). The measures for impact avoidance, minimization and mitigation for these resources would extend to any resources not covered under OAR 345-022-0090(1)(a) but protected under OAR 345-022-0090(1)(b). These resources located on private land were evaluated against the criteria identified in ORS 358.905(1)(a) and ORS 358.905(1)(c).

The applicant proposed archaeological sites 6B2H-MC-03 and 6B2H-SA-06 may qualify as an "archaeological site" under ORS 358.905(1)(c) because they may contain archaeological objects and the contextual associations of the archaeological objects with each other. The Department notes that these sites may be evaluated in the federal Section 106 review and determined eligible for listing on the NRHP, and therefore also protected under OAR 345-022-0090(1)(a). If the lead federal agency concurs with the applicant's recommendation that these sites are not eligible, they may otherwise be protected under OAR 345-022-0090(1)(b). The sites shall be avoided pending SHPO concurrence with this designation based on final design and any other necessary measures to determine the sites significance. This information shall be provided to the Department in the final HPMP.

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[2] ORS 358.905(1)(a) states ""Archaeological object" means an object that: (A) Is at least 75 years old; (B) Is part of the physical record of an indigenous or other culture found in the state or waters of the state; and (C) Is material remains of past human life or activity that are of archaeological significance including, but not limited to, monuments, symbols, tools, facilities, technological by-products and dietary by-products."

[3] ORS 358.905(1)(c) states "(A) "Archaeological site" means a geographic locality in Oregon, including but not limited to submerged and submersible lands and the bed of the sea within the state's jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with: (i) Each other; or (ii) Biotic or geological remains or deposits. (B) Examples of archaeological sites described in subparagraph (A) of this paragraph include but are not limited to shipwrecks, lithic quarries, house pit villages, camps, burials, lithic scatters, homesteads and townsites.

[4] B2HAPPDoc3-36 ASC 19_Exhibit S_Cultural_ASC_Public 2018-09-28. Section 3.4.2.

Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

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Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

Cultural Resources Pedestrian Survey Temporary Resource #	County	Resource Type	Generalized Resource Description (Attachment S-6)	Project Route(s)	Project Component	Protected Under OAR 345-022-0090(1)(b)	Potential Impact	Management Recommendation
35BA1351 / B2H-JF-13	Baker	Archaeological Site	Historic /Ranching: Vegetated wooden corral -concentration of manufactured metal and wood parts, metal truck/ tractor cab - manual pump to well head replaced with electric pump- appears to still be in use for cattle.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-RP ISO-01	Baker	IF/ Archaeological Object	Pre-Contact /Utilized Flake(s): Isolated Find consists of single piece of pre-contact debitage, a secondary obsidian flak	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
6B2H-RP ISO-02	Baker	IF/ Archaeological Object	Pre-Contact /Debitage: Isolated Find consists of three pieces of pre-contact debitage, all tertiary chert flakes	Proposed Route	Direct Analysis Area (Construction Footprint)	No	Will be directly impacted	Shovel probe to confirm isolated nature.
6B2H-RP ISO-03	Baker	IF/ Archaeological Object	Pre-Contact /Debitage: Isolated Find consists of a pre-contact obsidian bifacial thinning flake. The flake appears medially fractured.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
6B2H-SA ISO-05	Baker	IF/ Archaeological Object	Historic/ Refuse: Isolated Find includes aqua glass insulator fragment, sanitary can (meat type), and	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.

Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

Cultural Resources Pedestrian Survey Temporary Resource #	County	Resource Type	Generalized Resource Description (Attachment S-6)	Project Route(s)	Project Component	Protected Under OAR 345-022-0090(1)(b)	Potential Impact	Management Recommendation
			several brown, glazed ceramic sherds.					
6B2H-SA ISO-06	Baker	IF/ Archaeological Object	Pre-Contact /Debitage: Isolated Find consists of a single piece of pre-contact debitage, an obsidian tertiary flake	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
3B2H-CH-03	Baker	Archaeological Site	Historic/Mining: historic mining area with three prospect pits and one tailings pile.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-MC-03	Baker	Archaeological Site	Historic/Mining: mine shaft (10 feet deep, oil cans and lumber present), two prospecting pits (metal/glass present), small concrete pad, wagon remnants, and concentration of rocks	Proposed Route	Direct Analysis Area (Construction Footprint)	Potentially	Avoid. May be directly impacted pending determination and mitigation	Avoid, SHPO determination, See HPMP.
6B2H-RP-05	Baker	Archaeological Site	Historic/Ranching: corral (appears to be in use), windmill (collapsed), and refuse scatter of concrete blocks	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-SA-06	Baker	Archaeological Site	Historic/Farmstead: standing and collapsed buildings, two refuse concentrations, a hay storage/feed structure, two caches of farming equipment, and an auto body.	Proposed Route	Direct Analysis Area (Construction Footprint)	Potentially	Avoid. May be directly impacted pending determination and mitigation	Avoid, SHPO determination, See HPMP.

Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

Cultural Resources Pedestrian Survey Temporary Resource #	County	Resource Type	Generalized Resource Description (Attachment S-6)	Project Route(s)	Project Component	Protected Under OAR 345-022-0090(1)(b)	Potential Impact	Management Recommendation
B2H-SA-30	Malheur	Archaeological Site	Historic/Refuse Scatter: varied historic refuse scatter of cans, glass bottles and shards, crockery, miscellaneous items, and farm machinery.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-RP ISO-10	Umatilla	IF/ Archaeological Object	Historic/Refuse: Isolated Find consists of single piece of historic refuse: an aqua glass insulator fragment.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
6B2H-RP ISO-11	Umatilla	IF/ Archaeological Object	Historic/Refuse: Isolated Find consists of several clear glass bottle fragments.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
B2H-BS-ISO-25	Umatilla	IF/ Archaeological Object	Pre-Contact /Utilized Flake(s): Isolated Find consists of utilized basalt secondary flake with 10 percent cortex on the dorsal surface.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
6B2H-MC-16	Umatilla	Archaeological Site	Historic/Utility Line: Consists of five single utility poles (telephone), some with rock jacks	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-MC-26	Umatilla	Archaeological Site	Historic/Agriculture: Consists of 20 historic agricultural field clearing rock piles and a potential basalt quarry. Former agricultural field. Sanitary cans and lumber scatter.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.

Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

Cultural Resources Pedestrian Survey Temporary Resource #	County	Resource Type	Generalized Resource Description (Attachment S-6)	Project Route(s)	Project Component	Protected Under OAR 345-022-0090(1)(b)	Potential Impact	Management Recommendation
6B2H-RP ISO-08	Umatilla	IF/ Archaeological Object	Historic/Agriculture: Isolated Find consists of a small agricultural cache of farming equipment. The cache includes three nearly identical metal discers with grain drills.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	Shovel probe to confirm isolated nature.
6B2H-TH-05	Umatilla	Archaeological Site	Historic/Agriculture: consists of eight rock piles from historic agricultural field-clearing	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-TH-08	Umatilla	Archaeological Site	Historic/Agriculture: consists of dilapidated shed, a wooden cart, a harrower, and remnants of a wagon/cart. Misc metal scraps and few pieces of milled lumber scattered across the site.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-TH-09	Umatilla	Archaeological Site	Historic/Agriculture & Other: agricultural locus and a stone concentration of indeterminate age. Agricultural equipment includes hitch with drawbar and wooden tractor trailer. Refuse is also present, including barbed wire and ammo.	Proposed Route	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.

Table HCA-7: Inventoried Resources under OAR 345-022-0090(1)(b)

Cultural Resources Pedestrian Survey Temporary Resource #	County	Resource Type	Generalized Resource Description (Attachment S-6)	Project Route(s)	Project Component	Protected Under OAR 345-022-0090(1)(b)	Potential Impact	Management Recommendation
6B2H-MC-09	Union	Archaeological Site	Historic/Road: consists of two abandoned road segments and associated refuse. The roads are separated by tributary. Refuse includes porcelain with blue print, whiteware, miscellaneous glass and metal, and agricultural machinery parts.	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
6B2H-MC-11	Union	Archaeological Site	Historic/Mining: Consists of a historic prospecting pit, with small tailing pile nearby.	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.
B2H-BS-49	Union	Archaeological Site	Historic/Ranching: Consists of a historic wooden corral. The corral is rectangular in shape and constructed of natural timbers and milled lumber.	Morgan Lake Alternative	Direct Analysis Area (Construction Footprint)	No	May be directly impacted	No further management.

VI. Potential Impacts to and Mitigation for Historic, Cultural, and Archaeological Resources Under OAR 345-022-0090(1)(c)

OAR 345-022-0090(1)(c), the Council's Historic, Cultural and Archaeological Resources standard addresses and protects archaeological sites on public lands under OAR 345-022-0090(1)(c) as defined in ORS 358.905(1)(c).[5] ASC Exhibit S, Table S-2 identifies only one archaeological site located on public (state) lands. This is resource 35UM00365 the Meacham Pioneer Memorial Cemetery Site, managed by the Oregon Department of Transportation (ODOT). This resource is also identified in Table HCA-2, *Oregon Trail/NHT Inventory in Analysis Area with Avoided/No Impacts*. There would not be direct or indirect impacts to this resource, therefore, OAR 345-022-0090(1)(c) does not apply.

VII. Mitigation for Historic, Cultural, and Archaeological Resources: Historic Properties Management Plan (HPMP)

Table HCA-8 through Table HCA-10 outline avoidance measures to avoid direct impacts to Oregon Trail/NHT resources, resource evaluation, impact minimization, and mitigation measures.

Table HCA-8: Potential Minimization and Mitigation of Direct Impacts to Resource Site Types Identified within the Direct Analysis Area

Table HCA-8: Potential Minimization and Mitigation of Direct Impacts to Resource Site Types Identified within the Direct Analysis Area*

Site Type	Potential Minimization/Mitigation Measure
Pre-Contact Sites	
Lithic Scatter, Lithic/Tool Scatter, Quarry, Temporary Camp	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website,
Multicomponent Sites	

[5] ORS 358.905(1)(c) states, "(A) "Archaeological site" means a geographic locality in Oregon, including but not limited to submerged and submersible lands and the bed of the sea within the state's jurisdiction, that contains archaeological objects and the contextual associations of the archaeological objects with: (i) Each other; or (ii) Biotic or geological remains or deposits. (B) Examples of archaeological sites described in subparagraph (A) of this paragraph include but are not limited to shipwrecks, lithic quarries, house pit villages, camps, burials, lithic scatters, homesteads and townsites.

Table HCA-8: Potential Minimization and Mitigation of Direct Impacts to Resource Site Types Identified within the Direct Analysis Area*

Lithic Scatter/Tool & Refuse Scatter, Ranching Complex, Water Conveyance, Possible Rock Art, Utility Line, Quarry & Refuse Scatter, Temporary Camp	Data recovery (controlled excavation), or in-place preservation/protection (capping with clean fill). Off-Site: publish research-focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Historic-Era Sites	
Agriculture, Bridge, Homestead, Ranching, Logging Railroad, Mining, Railroad and Utility Line, Refuse Scatter, Road, Structure, Survey Marker, Trail Segment, Water Conveyance	Update recordation (if necessary), data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
Undetermined Sites	
Rock Circle	Update recordation (if necessary, data recovery (if applicable). Off-Site: publish research focus article or professional society presentation, or public education and outreach (e.g., website, kiosk, etc.).
* Applies to OAR 345-022-0090(1) (a) through (c) Source: B2HAPPDoc3-36 ASC 19_Exhibit S_Cultural_ASC_Public 2018-09-28. Attachment S-9. Table 6-2.	

Table HCA-9 Potential Minimization and Mitigation Methods for Indirect Impacts

Table HCA-9 Potential Minimization and Mitigation Methods for Indirect Impacts*

Resource Category	Example Resource Types	Potential Management Methods for Indirect Impacts
Trails (NHT, stage trails, freight roads, etc.)	• Trail remnants/ segments • Associated trail sites or features (stations, burials, inscriptions)	• Recording—including HABS/HAER/HALS** • Additional literature or archival review (e.g. historic maps, local papers) • Remote sensing • Purchase of conservation easement or other land protection where trail traces exist • Historic trails restoration within and outside Project area • Public signage, publication/print/media, and/or interpretive plans

Table HCA-9 Potential Minimization and Mitigation Methods for Indirect Impacts*

Resource Category	Example Resource Types	Potential Management Methods for Indirect Impacts
Historic Buildings and Structures	• Farm and ranch sites/homesteads • Historic districts • Utility lines • Water conveyance systems • Mining sites • Bridges, etc.	• Photo documentation and scale drawings • National Register Nomination (if owner consents) • HABS/HAER/HALS documentation • Additional archival and literature review • Restoration of historic building or structure • Relocation of historic building or structure • Public interpretation (with owner permission)
Historic Property of Religious or Cultural Significance to Indian Tribes (TCPs; limited to those subject to EFSC standards)	• Ceremonial areas • Vision quest sites • Hunting and gathering areas	• Additional literature/archival review • Ethnographic documentation • Oral histories • Public archaeology funding • As recommended by impacted tribes
* Applies to OAR 345-022-0090(1) (a) ** HABS – Historic American Building Survey; HAER – Historic American Engineering Record; HALS – Historic American Landscape Survey Source: B2HAPPDoc3-36 ASC 19_Exhibit S_Cultural_ASC_Public 2018-09-28. Attachment S-9. Table 6-3.		

Table HCA-10 Potential Minimization and Mitigation Methods for Indirect and Direct Impacts to Aboveground Resources

Table HCA-10 Potential Minimization and Mitigation Methods for Indirect and Direct Impacts to Aboveground Resources*

Built Environment Resource Type	Potential Minimization/ Mitigation (Indirect and Direct impacts)
Trails (Oregon NHT, Lewis and Clark NHT, stage trails, freight roads, etc.)	Recordation in HABS/HAER/HALS**; metal detector surveys, additional historical research, information pamphlets, trail segment management plans; conservation easements; land acquisition; National Register nomination
Historic Buildings (Store, bank, Cabins, Homestead, etc.)	Recordation in HABS/HAER/HALS; restoration of historic building; relocation of historic building; oral histories; public interpretation; print publication; video media publication; National Register nomination

Table HCA-10 Potential Minimization and Mitigation Methods for Indirect and Direct Impacts to Aboveground Resources*

Built Environment Resource Type	Potential Minimization/ Mitigation (Indirect and Direct impacts)
Historic Structures (Railroad, mining, resources, bridge, utility lines, water conveyance, etc.)	Recordation in HABS/HAER/HALS; restoration of historic structure; relocation of historic structure; oral histories; public interpretation; print/media publication; National Register nomination
Historic Districts (residential, commercial, industrial, agricultural)	Historic district design guidelines for utilities, repair and maintenance guidelines, print publication, video media publication (website/podcast/video); National Register nomination
Archaeological resources with above ground features (Cemeteries, cairns, rock alignments, house pits, hunting blinds, middens, camp, quarry, rock art, rock shelter	Ethnographic documentation; resource management plan; recordation in HABS/HAER/HALS (if appropriate); partnership and funding for public archaeology projects; print publication, video media publication (website/podcast/video)
Traditional Cultural Properties (Ceremonial areas, vision quest, or gathering areas, etc.)	Ethnographic documentation; resource management plan; recordation; oral histories, etc.

* Applies to OAR 345-022-0090(1) (a) through (c)
** HABS – Historic American Building Survey; HAER – Historic American Engineering Record; HALS – Historic American Landscape Survey
Source: B2HAPPDoc3-36 ASC 19_Exhibit S_Cultural_ASC_Public 2018-09-28. Attachment S-9. Table 6-4.

1
2

APPENDIX A.2
BLM HPMP FRAMEWORK

Appendix B5
Historic Properties Management Plan Framework

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Acronyms and Abbreviations

APE	Areas of Potential Effect
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
HPMP	Historic Properties Management Plan
NAGPRA	Native American Graves Protection and Repatriation Act
NRHP	National Register of Historic Places
Project	Boardman to Hemingway Transmission Line Project
PSMP	Property-specific Mitigation Plans
SHPO	State Historic Preservation Officers
THPO	Tribal Historic Preservation Officers

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APPENDIX B5 – HISTORIC PROPERTIES MANAGEMENT PLAN FRAMEWORK

HISTORIC PROPERTIES MANAGEMENT PLAN DRAFT ANNOTATED OUTLINE

1.0 INTRODUCTION

1.1 Purpose of the Historic Properties Management Plan (HPMP)
This section addresses the purpose of the HPMP, which is to provide a project-wide set of plans and procedures to avoid, minimize, or mitigate adverse effects on historic properties.

1.2 Property-specific Mitigation Plans (PSMPs)
This section addresses the intent and purpose of the PSMPs, which is to specify the general terms of avoidance, monitoring, and a framework for mitigating adverse effects. The purpose of each PSMP is to supplement this HPMP with property-specific information, including treatment and mitigation for unavoidable direct and indirect effects.

1.3 Laws and Regulations
This section briefly addresses the federal and state laws and regulations applicable to the project with regard to cultural resources.
- 1.3.1 Federal
- 1.3.2 State
- 1.3.3 Tribal

1.4 Organization
This section briefly outlines the organization and structure of the HPMP by section.

2.0 PROJECT AND AREA OF POTENTIAL EFFECTS DESCRIPTION

This section provides a project description and defines the areas of potential effect (APE) as established in the Programmatic Agreement for the project.

2.1 Project Description
This section provides a brief project description.

2.2 Area of Potential Effect
This section provides a definition of the APE as a baseline for survey and inventory.
- 2.2.1 Direct Effects
  This section discusses the direct-effects APE
- 2.2.2 Indirect Effects
  This section discusses the indirect-effects APE

3.0 SEQUENCE OF PROJECT-RELATED TASKS

This section addresses the various tasks that will be completed to ensure that historic properties eligible for or listed on the National Register of Historic Places (NRHP) are avoided or project impacts are minimized or mitigated and the sequence in which these tasks will occur during each phase of the project as listed below.

3.1 Pre-construction
Tasks include completion, submittal, and approval of the HPMP and resource specific monitoring plans.

3.2 Construction
Tasks include ongoing environmental training of construction staff, construction monitoring, mitigation of inadvertent discoveries, completion of work associated with PSMPs required during construction.

3.3 Post-construction
Tasks include completion of test investigation or data recovery analysis, preparation of artifacts for curation, transfer of materials to curation facility or appropriate land owner, and preparation of final reports

3.4 Reclamation
Tasks include monitoring of various reclamation treatments applied to reclaim temporary use areas.

3.5 Operation and Maintenance
Tasks include transmission line patrols, climbing inspections, structure and wire maintenance, insulator washing, inspection and maintenance of stations and communication facilities, access road repairs, and vegetation management activities.

4.0 PREVIOUS RESEARCH AND CULTURAL RESOURCE TYPES IDENTIFIED WITHIN THE PROJECT AREA

This section addresses the identification of resources and previous literature review, pedestrian field surveys, and research conducted for the project and identifies known cultural resource types within the project area.

4.1 Identification and Evaluation of Historic Properties
This section addresses the identification and evaluation of historic properties for the project. The HPMP is based on the results of cultural resource inventories consisting of background records and literature research, and pedestrian surveys. The Programmatic Agreement outlines the requirements for cultural resources inventory and identification of historic properties for the project

4.1.1 Archival Research and Results
This section addresses the parameters and results of the archival research conducted for the project.

4.1.2 Field Survey Methods and Results
This section addresses the parameters and results of the field surveys conducted for the project.

4.2 Ethnographic Studies
This section addresses the ethnographic studies prepared for the project.

4.3 Definition of Cultural Resources Site Types
This section provides a summary of the different cultural resource site types found in Oregon and Idaho in table format.

4.3.1 Pre-contact Resources
4.3.2 Historic Resources
4.3.3 Multicomponent Resources

5.0 METHODS FOR DETERMINATION OF ELIGIBILITY AND EFFECTS

This section addresses the methods to be used to determine eligibility and project effects on sites within the project APEs.

5.1 Determination of Eligibility
This section addresses how determination of eligibility will be established by BLM, in consultation with tribes, Tribal Historic Preservation Officers (THPOs), State Historic Preservation Officers (SHPOs), and appropriate Concurring Parties to the

Programmatic Agreement, for sites within the project APEs based upon criteria contained in 36 CFR 60.4.

5.2 Determinations of Effects
This section addresses how historic properties will be evaluated to determine if the project has an adverse effect.

6.0 AVOIDANCE AND PROPOSED MITIGATION PLAN

This section presents a general framework for resolution of adverse effects from the project on historic properties.

6.1 Avoidance

6.2 General Mitigation Measures
Due to the scale of the project, it is unlikely that adverse effects to historic properties can be avoided entirely. This section provides mitigation options for unavoidable impacts.

6.2.1 Mitigation for Direct Adverse Effects

6.2.2 Mitigation for Indirect Effects

7.0 MONITORING PLAN

This section addresses monitoring for cultural resources during construction of the project. This plan provides details regarding roles and responsibilities of various personnel in the field in coordination with the project-wide Environmental Compliance Monitoring Plan that will be prepared as a part of the project Plan of Development.

7.1 Cultural Resources Team
This section addresses the role and responsibilities of the Cultural Resources Team as part of the Construction Contractors environmental inspection team.

7.2 Construction Compliance

7.2.1 Monitoring and Avoidance Procedures
This section addresses the monitoring procedures that will be applied project-wide including cultural resource construction monitoring, intermittent monitoring, inadvertent discoveries, and flagging, fencing, and signage measures.

7.2.2 Variances and Amendments
This section addresses the procedure to be followed when a variance or amendment is required due to changes in the project footprint.

8.0 REFERENCES CITED

APPENDICES

A Inadvertent Discovery Plan
B NAGPRA Plan of Action
C Subsurface Investigation Strategy

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APPENDIX B
RESOURCE-SPECIFIC MITIGATION PLANS
(TO BE DETERMINED)

APPENDIX B – RESOURCE-SPECIFIC MITIGATION PLANS

To be completed following selection of final route and implemented Spring 2021.

APPENDIX C
CONFIDENTIAL PROJECT MAPS
(TO BE DETERMINED)

APPENDIX C – CONFIDENTIAL PROJECT MAPS

To be completed following selection of final route.

APPENDIX D
OREGON CULTURAL RESOURCE FORMS

Oregon Archaeological Site Form

Site Identification

Enter New Site Identifying Information

* = Required Field

Smithsonian Trinomial To be assigned

Agency/Field ID *

Site Name

Recording Date *

Administrative Information

* = Required Field

Managing Office

Owners

Owner	Former Owner?

Site Ownership/Management Notes

National Register Status Statements
Each Reviewing organization - including the field organization - can enter a status statement

Status	Role	Date	Statement Author

Oregon Archaeological Site Form

Site Type

* = Required Field

Dimensions

Length * Width * Units

Calculated Area

Depth of cultural deposit *

Site Type *

Features

Cultural Periods *

General Age *

Oregon Archaeological Site Form

Location

* = Required Field

County *

For sites in urban setting, give appropriate address in access description

Cadastral Locations

Township * Range * Sec * 1/4 1/4 1/4 DLC# Meridian

Map References

Map Name * Revision Year *

UTM Coordinates *

Type * East * North * Method * Zone * Datum *

Describe access to site from permanent feature and how to find primary datum:

Oregon Archaeological Site Form

Environmental Information

* = Required Field

Depositional Environment

Soil Description:

Culturally Signifigant Vegetation:

Culturally Signifigant Vegetation Description:

Water Sources

Name of Water Body	Type	Stream Type	Stream Class	Distance	Direction

Site Setting

Discuss environmental setting of site relevant to site location, including on-site vegetation, topography, dated landforms and formation processes):

Province/Basin

Province	Elev From (ft) *	Elev to (ft) *	Aspect
Basin	Subbasin		
Drainage Name			

Oregon Archaeological Site Form

Site Description

* = Required Field

Site Description and Site Function *
Include discussion of site condition, found artifacts and other relevant information

Date(s) of use
(Be as specific as possible. 0 if unknown, may not leave blank.)

From * To * BC/AD/BP * Dating Method *

Site Observations
The following were observed:

Artifacts Present * Quantity *

Estimated Counts

Historic Prehistoric

Rock Art

Rock Art Present

Oregon Archaeological Site Form

Rock Art

* = Required Field	
Number of Loci: *	Number of Panels: *
Panels are Situated on:	Panel Description
Panel Aspects	
Type of Rock:	Formation name if known and additional information
Degree of Patination	
Category and Techniques Petroglyphs	Pictographs
Colors	Color Description
Rock Art Superimposed?	Superimposed art description
Natural Destructive Agents	Natural Destructive Agents Description
Other Destructive Agents	Other Destructive Agents Description
Detailed Description	

Oregon Archaeological Site Form

Site Condition

* = Required Field Visit Date *
Site Condition *
Recorder *(Name and Organization)*
Artifacts or Samples Collected?
Activities/Work Performed *
Impacts and Impact Agents
Protective Measures Recommended/Present Use & Expected

Bibliographic References

Bibliographic References

Author	Publication Year	Title	Agency	Primary Reference?

OREGON STATE CULTURAL RESOURCE ISOLATE FORM

ADMINISTRATIVE DATA

CR_ISOLATE NUMBER:
OWNER: COUNTY:

LOCATIONAL DATA

LEGAL DESCRIPTION: ___1/4____1/4___1/4 of SECTION ____ TOWNSHIP ____ RANGE _____

DLC_____ UTM **ZONE:** **EASTING:** **NORTHING:** GPS (Y/N):
USGS QUAD(S) NAME: SERIES: DATE:

ENVIRONMENAL DATA

ELEVATION: SLOPE: ASPECT:
ITEM DESCRIPTION (Narrative, drawings, sketch map, photo):

Collected? Yes___No_____
Recorder: Date:

ATTACH USGS TOPOGRAPHIC MAP:

APPENDIX E
MONITORING LOG

Boardman to Hemingway Transmission Line Project
Cultural Resource Monitoring Page of

Report #_____

Boardman to Hemingway Transmission Line Cultural Resource Monitor Daily Report

Date_____/_____/_____

Cultural Resource Monitor:_____ Project Segment: _____ Location (GPS): _____ Construction Company:_____ Equipment Used/Operator Name: Current Weather : _____ Ground Conditions: _____	Check all that apply: No Culture Resource findings: ☐ Inadvertent Discovery: ☐ Non-Compliance Issue: ☐ Incident Reports: ☐ (attached form as appropriate) Variances: ☐ (attach to variance form)

Areas Inspected

Location:_____Time :_____Activity : _____
Location:_____Time :_____Activity : _____
Location:_____Time :_____Activity : _____
Location:_____Time :_____Activity : _____
Location:_____Time :_____Activity : _____
Location:_____Time :_____Activity : _____

Item	Yes	No	N/A	Comments (if no then location)
Monitors and Sensitive Resources				
Monitoring near existing Archaeological site (exclusion area)? If yes, list site number and approximate distance from construction activity in comment section.				
All exclusion areas marked and avoided?				
Inadvertent discoveries of cultural resources? If yes, explain and document identified cultural material type and steps taken on continuation sheet.				
Impacts to existing cultural resource sensitive area(s)? If yes, Non-compliance, explain and document steps taken on continuation sheet.				
Native American Monitor present, as applicable?				

Photographs	
Filename:	Filename:
Direction:	Direction:
Description:	Description:
Filename:	Filename:
Direction:	Direction:
Description:	Description:

Boardman to Hemingway Transmission Line Project
Cultural Resource Monitoring Page of

Daily Field Comments/Notes:

APPENDIX F
TREATMENT OF NATIVE AMERICAN HUMAN REMAINS DISCOVERED INADVERTENTLY OR THROUGH CRIMINAL INVESTIGATIONS ON PRIVATE AND PUBLIC, STATE-OWNED LANDS IN OREGON

Treatment of Native American Human Remains Discovered Inadvertently or Through Criminal Investigations on Private and Public, State-Owned Lands in Oregon

Native American burial sites are not simply artifacts of the tribe's cultural past, but are considered sacred and represent a continuing connection with their ancestors. Native American ancestral remains, funerary objects, sacred objects and objects of cultural patrimony associated with Oregon Tribes are protected under state law, including criminal penalties (ORS 97.740-.994 and 358.905-.961). The laws recognize and codify the Tribes' rights in the decision-making process regarding ancestral remains and associated objects. Therefore both the discovered ancestral remains and their associated objects should be treated in a sensitive and respectful manner by all parties involved.

Identification of Human Remains

- Oregon laws (ORS 146.090 & .095) outline the types of deaths that require investigation and the accompanying responsibilities for that investigation. The law enforcement official, district medical examiner, and the district attorney for the county where the death occurs are responsible for deaths requiring investigation. Deaths that require investigation include those *occurring under suspicious or unknown circumstances*.
- If human remains that are inadvertently discovered or discovered through criminal investigations **are not clearly modern**, then there is high probability that the remains are Native American and therefore ORS 97.745(4) applies, which requires immediate notification with State Police, State Historic Preservation Office, Commission on Indian Services, and all appropriate Native American Tribes. To determine who the "appropriate Native American Tribe" is, the responsible parties should contact the Legislative Commission on Indian Services (CIS). To determine whether the human remains are Native American, the responsible parties should contact the appropriate Native American Tribes at the initial discovery. It should be noted that there may be more than one appropriate Native American Tribe to be contacted.
- If the human remains are possibly Native American then the area should be secured from further disturbance. The human remains and associated objects **should not be disturbed**, **manipulated, or transported from the original location until a plan is developed in consultation with the above named parties.** These actions will help ensure compliance with Oregon state law that prohibits any person willfully removing human remains and/or objects of cultural significance from its original location (ORS 97.745).
- All parties involved and the appropriate Native American Tribes shall implement a culturally sensitive plan for reburial.

Notification

- State law [ORS 97.745 (4)] requires that any discovered human remains suspected to be Native American shall be reported to -
    1. State Police
        - Sgt. Chris Allori, Office (503) 731-4717, Cell (503) 708-6461, Dispatch (503) 731-3030

*Note: This document was created by the Government to Government Cultural Resource Cluster Group in September, 2006. Last updated: August 2014

2. State Historic Preservation Office (SHPO)
    - Primary contact = Dennis Griffin, State Archaeologist, office phone (503) 986-0674, cell phone (503) 881-5038

3. Legislative Commission on Indian Services (LCIS)
    - Contact = Karen Quigley, Director, office phone (503) 986-1067. Karen will provide the list of appropriate Native American Tribes

4. All appropriate Native American Tribes provided by LCIS

    - Burns Paiute Tribe - Agnes Castronuevo (541) 573-8089

    - Confederated Tribes of Coos, Lower Umpqua and Siuslaw - Stacy Scott, M.A. (541) 888-7513, Cell (541) 297-5543

    - Confederated Tribes of Grand Ronde - David Harrelson (503) 879-1630

    - Confederated Tribes of Siletz - Robert Kentta (541) 444-8244

    - Confederated Tribes of the Umatilla Indian Reservation - Teara Farrow Ferman (541) 276-3447; secondary contact Catherine Dickson (541) 966-2338 or (541) 429-7231

    - Confederated Tribes of Warm Springs - Sally Bird (541) 553-3555

    - Coquille Indian Tribe – Bridgett Wheeler (541) 756-0904

    - Cow Creek Band of Umpqua Indians - Jessie Plueard (541) 677-5575 ext. 5577

    - Klamath Tribes - Perry Chocktoot, Culture & Heritage Director (541) 783-2219

*Note: This document was created by the Government to Government Cultural Resource Cluster Group in September, 2006. Last updated: August 2014

Attachment U-2

Draft Transportation and Traffic Plan

ATTACHMENT U-2
TRANSPORTATION AND TRAFFIC PLAN

Transportation and Traffic Plan

Boardman to Hemingway Transmission Line Project

1221 West Idaho Street
Boise, Idaho 83702

Mark Stokes, Project Leader
(208) 388-2483
MStokes@idahopower.com

Zach Funkhouser, Permitting
(208) 388-5375
ZFunkhouser@idahopower.com

September 2018

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ACRONYMS AND ABBREVIATIONS

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

Agency Review Process

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

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

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

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

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

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

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

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

1.0 INTRODUCTION

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

This Plan outlines the measures that IPC and contractor(s) will implement during Project construction. Contractors will be required to submit detailed traffic and transportation plans to IPC that are consistent with the provisions in this Plan. This Plan will be submitted to and approved by the appropriate federal, state, and local agencies with authority to regulate use of public roads, and approved, prior to the issuance of a Notice to Proceed with construction. The construction contractor's plan will describe the following:

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

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

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

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

1.1 Regulatory Framework

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

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

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

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

1.1.1 Federal

1.1.1.1 Federal Aviation Administration

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

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

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

These regulations do not apply to private landing strips. Project construction cranes will exceed 200 feet in height and therefore, IPC must obtain a Notice of Proposed Construction or Alteration from the FAA. Information regarding the Notice of Proposed Construction or Alteration needed for the Project is contained in Section 3.2.5 of Exhibit E. None of the other conditions are anticipated to apply to this Project.

1.1.1.2 National Electrical Safety Code

Railroad/overhead utility crossing will conform to the National Electrical Safety Code (NESC):

- The height of rail car should be assumed to be 23 feet.
- Structures supporting power must be 50 feet out from the centerline of main running tracks, centralized traffic-control sidings, and heavy tonnage spurs. Locations adjacent to industry tracks must provide at least 30 feet of clearance from the centerline of tracks when measured at right angles. If located adjacent to curved tracks, the clearance must be increased at the rate of 1.5 inches per degree of curved track.
- Regardless of the voltage, unguyed poles must be located a minimum distance from the centerline of any track equal to the height of the pole above the groundline plus 10 feet. If guying is required, the guys must be placed in such a manner as to keep the pole from leaning/falling in the direction of the tracks.

- Structures for 34.5 kilovolts (kV) and higher must be located off the railroad ROW.
- Crossings will not be installed within 500 feet of the end of railroad bridges or 300 feet from the centerline of culverts or switch areas.

1.1.1.3 United States Department of the Navy

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

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

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

On January 12, 2001, the USFS issued the final National Forest System Road Management Rule. This rule revises regulations concerning the management, use, and maintenance of the National Forest Transportation System. The final rule is intended to help ensure additions to the National Forest System road network are needed for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and that unneeded roads are identified and decommissioned. The 2005 Travel Management Rule revised regulations at 36 CFR Parts 212, 251, 261, and 295 to require designation of roads, trails, and areas for motor vehicle use on all national forests.

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

BLM resource management plans and USFS land and resource management plans provide direction on road management along with other resources that govern roads on federal lands. Both the USFS and BLM have access and travel management plans that designate areas for motorized use, prohibit some uses to protect resources, or limit road use to certain times of the year for resource protection.

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

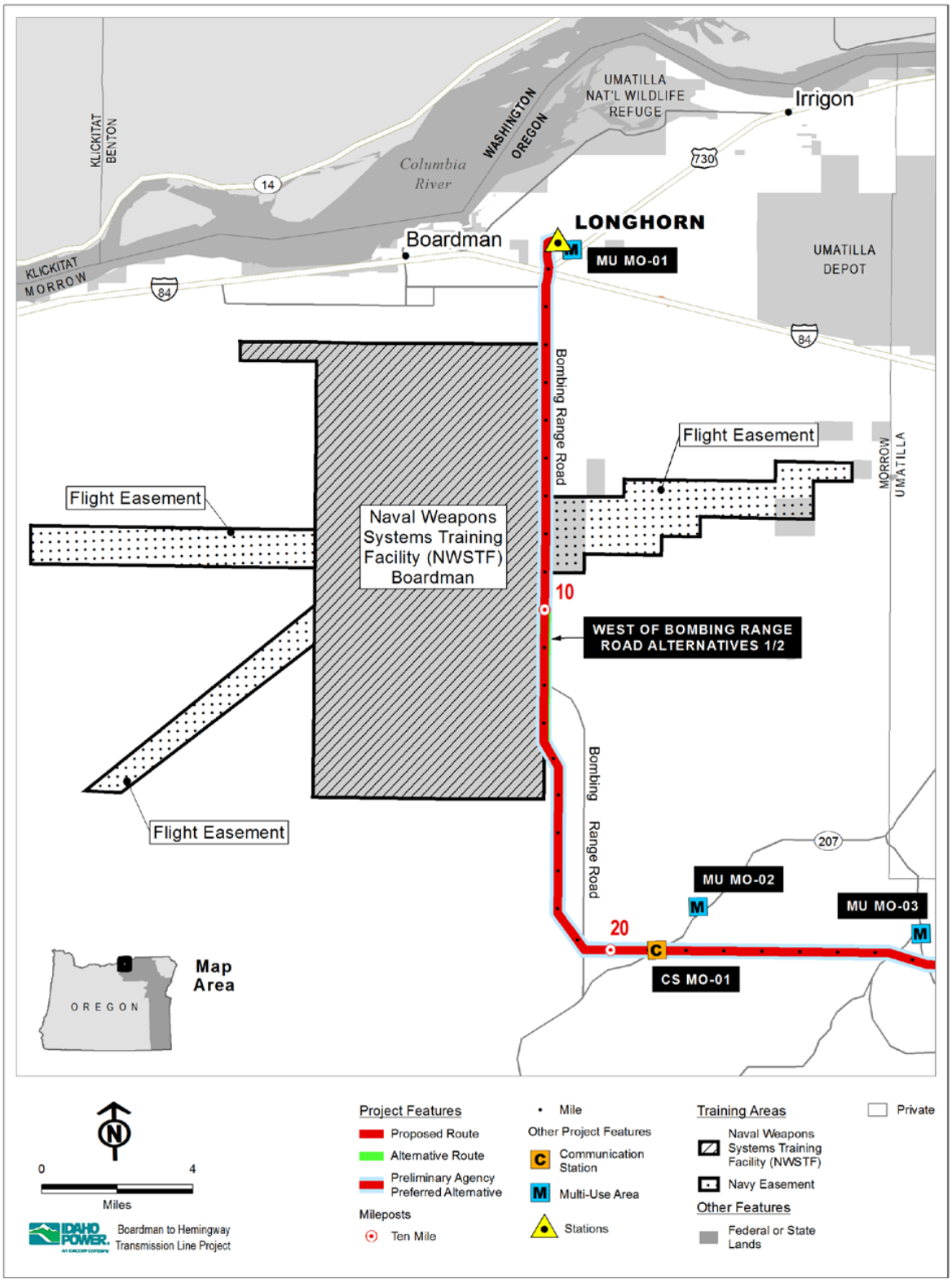

Figure 1. Naval Weapons System Training Facility Approach Zone

1.1.2 State

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

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

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

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

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

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

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

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

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

1.1.3 County and Other Agencies

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

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

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

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

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

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

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

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

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

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

- Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) will be used to minimize impacts to traffic flow.
- Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
- Schedule truck trips outside of peak morning and evening commute hours.
- Limit lane closures during peak hours to the extent possible.
- Include detours for areas potentially affected by project construction.
- Install temporary traffic-control devices as specified in the Manual of Uniform Traffic Control Devices for Streets and Highways (FHWA 2009 with 2012 amendments).
- Store construction materials only in designated areas.

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

2.0 AFFECTED TRANSPORTATION SYSTEM AND TRAFFIC LEVELS

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

2.1 Existing Roads, Bridges, and Railroads

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

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

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

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

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

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

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

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

2.2 Baseline Traffic Volumes

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

Table 1. Traffic Volumes Near the Project

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

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

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

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

2.3 Volume-to-Capacity Ratios

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

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

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

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

Source: ODOT 1999
[1] An Urban Growth Boundary is defined as the area surrounding an incorporated city in which the city may legally expand its city limits. The Project passes near the Urban Growth Boundaries for Boardman, Pilot Rock, La Grande, North Powder, Baker City, and Huntington.
[2] Near the Project, these include I-84, US 395, US 20, and US 95 (ODOT 2013).

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

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

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

Sources: Morrow County 2012; Umatilla County 2002; Union County 1999; Baker County 2005; Malheur County 2000.
[1] Existing V/C ratios were obtained from current county transportation plans. Each plan specifies the baseline year for traffic information. Those years are presented in this column.
[2] Projected future V/C ratios were obtained from current county transportation plans. Each plan specifies the projected future traffic levels. That information is presented in this column.
[3] Greatest projected V/C ratio outside of I-84/Hughes Lane is 0.17.
[4] Greatest projected V/C ratio outside of I-84/Hughes Lane is 0.39.
[5] Greatest projected LOS outside of US 20 and US 26 is A.
[6] Greatest projected LOS outside of US 20 and US 26 is A.
Note: LOS conversions to V/C ratio based on Umatilla County (2002) Table 4-3 Level of Service Criteria for Two-lane Highways.

3.0 POTENTIAL IMPACTS TO TRANSPORTATION SYSTEM AND TRAFFIC

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

3.1 Construction

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

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

3.1.1 Trip Generation Estimates

3.1.1.1 Anticipated Personal Vehicle Trips

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

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

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

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

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

Table 4. Personal Vehicle Trips per Day per Construction Spread

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

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

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

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

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

3.1.1.2 Anticipated Construction Vehicle Trips

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

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

Table 6. Construction Vehicle Trips per Day per Construction Spread

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

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

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

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

3.1.2 Construction Equipment and Traffic

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

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

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

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

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

3.1.3 Traffic Related to Timber Removal

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

3.1.4 Impacts to V/C Ratios

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

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

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

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

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

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

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

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

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

3.1.5 Impacts to Local Services

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

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

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

3.1.6 Access Roads

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

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

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

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

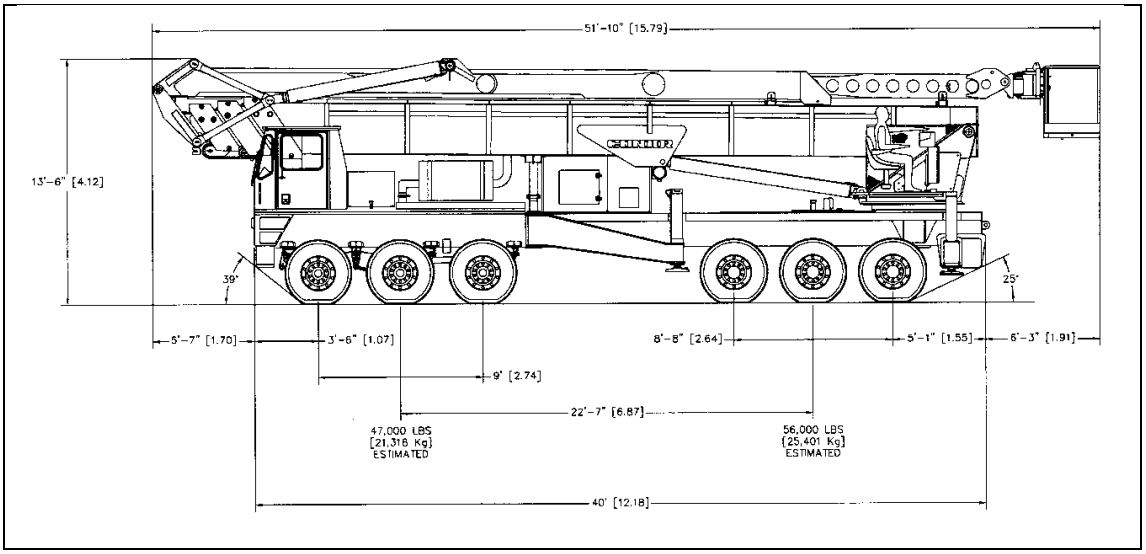

Figure 2. Example Aerial Lift Crane to be Used During Construction (Roadable Length 52 Feet; Width 8 Feet 6 Inches)

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

3.1.7 Potential Damage to Existing Infrastructure

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

3.2 Operation

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

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

4.0 MITIGATION

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

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

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

4.1 Physical Improvements

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

4.1.1 Construction Permits and Property Agreements

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

4.1.2 Road Standards and Maintenance

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

4.1.3 BMPs for Erosion Control and Stormwater Drainage

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

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

4.2 Operational Procedures During Construction

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

4.2.1 Traffic Control, Access, and Safety Measures

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

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

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

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

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

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

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

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

4.2.2 Fugitive Dust Mitigation

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

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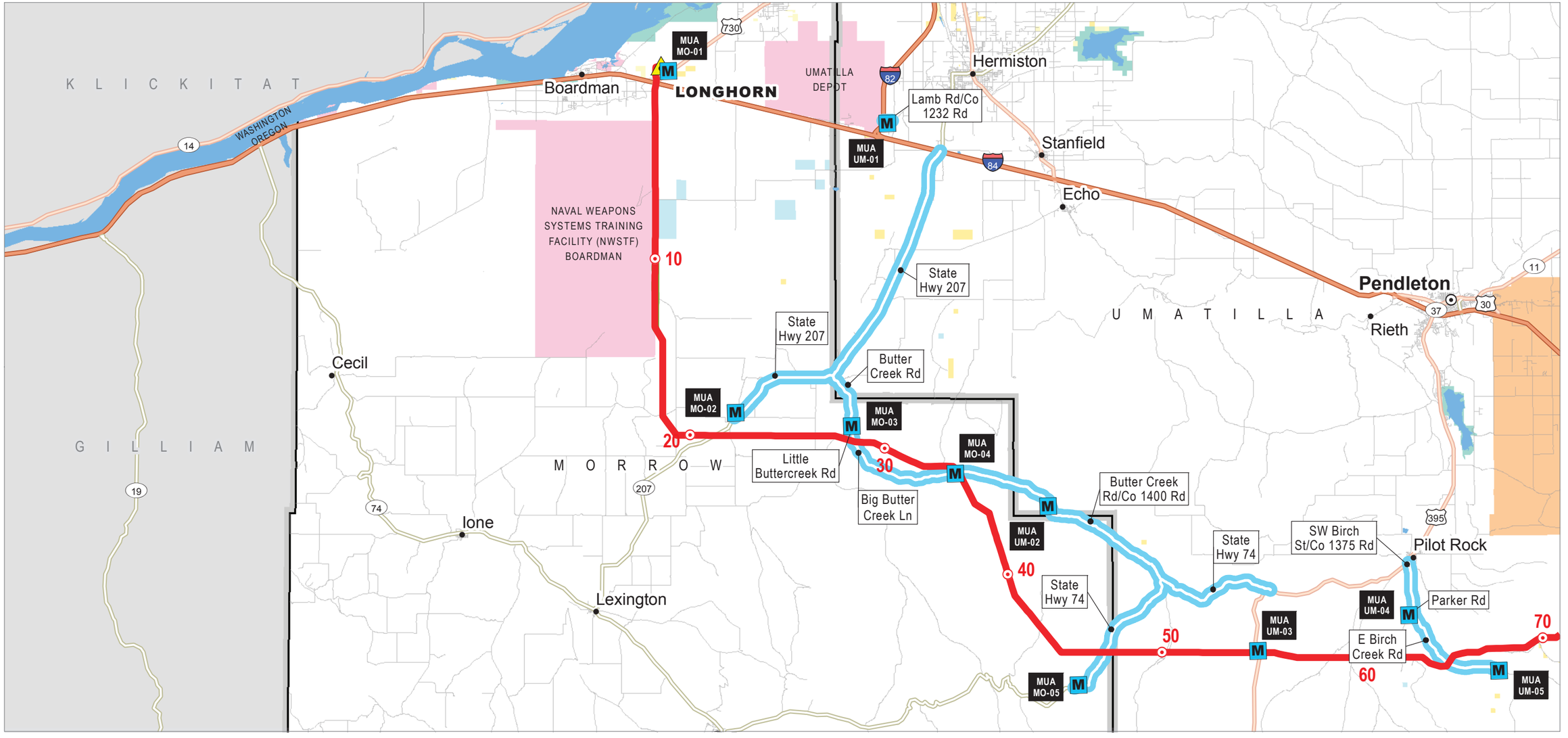
APPENDIX A
BOARDMAN TO HEMINGWAY – PRELIMINARY HAUL ROUTES



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Map Area

OREGON

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

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Transportation Features
- Preliminary Haul Routes

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

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

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

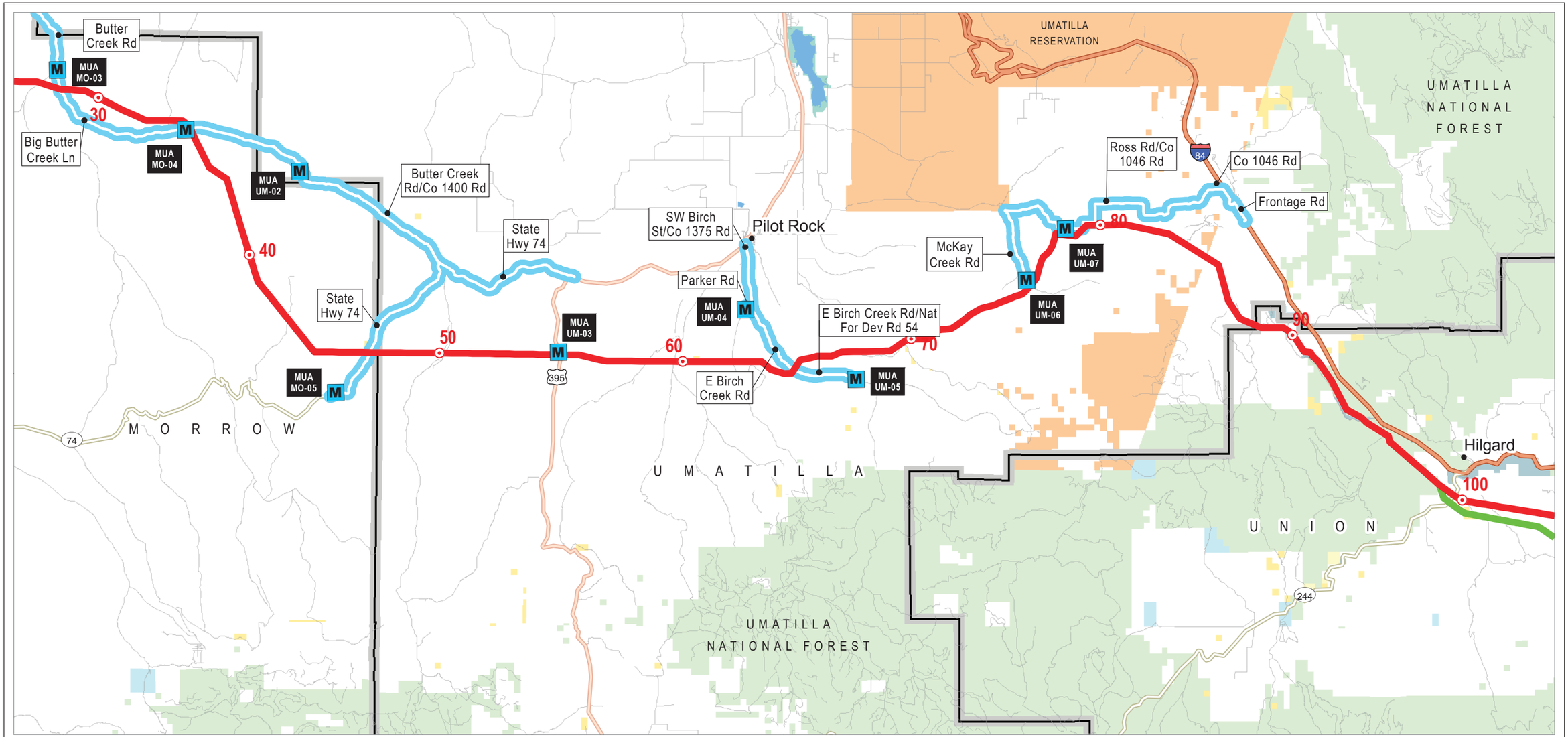
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER
An IDACORP Company

Attachment U-2, Appendix A
Preliminary Haul Routes

Morrow County

Map 1



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OREGON

Map Area

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

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Transportation Features
- Preliminary Haul Routes

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

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

Land Status
- Bureau of Indian Affairs
- Bureau of Land Management
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Private
- State or Local
- State or Local Wildlife, Parks and Recreation

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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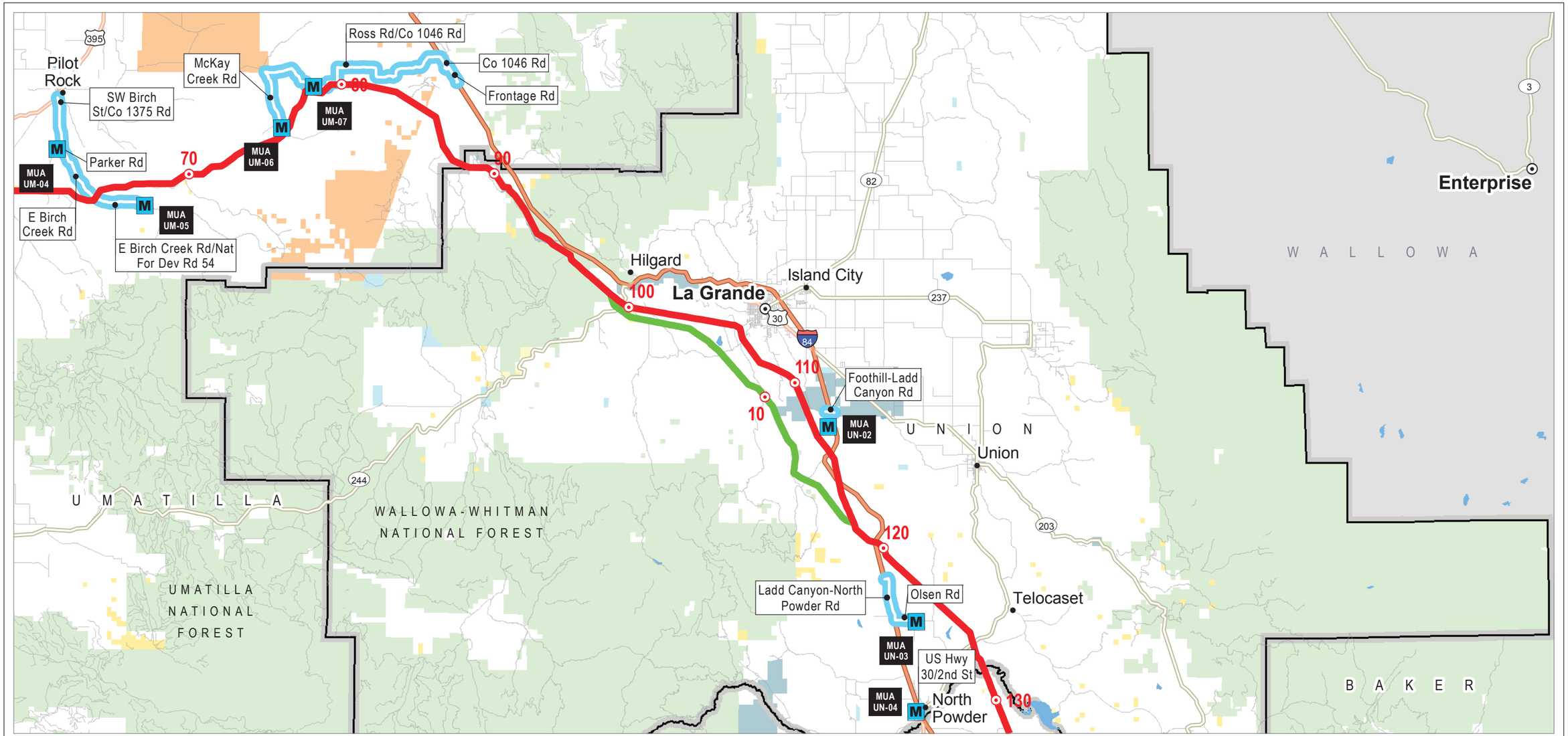
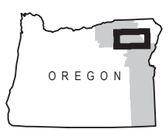
Attachment U-2, Appendix A
Preliminary Haul Routes

Umatilla County

Map 2



Map Area



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

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Transportation Features
- Preliminary Haul Routes

Public Roads
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- Highways
- Major Roads
- Other Roads

Project Features
- Proposed Route
- Alternative
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- M Multi-Use Area

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

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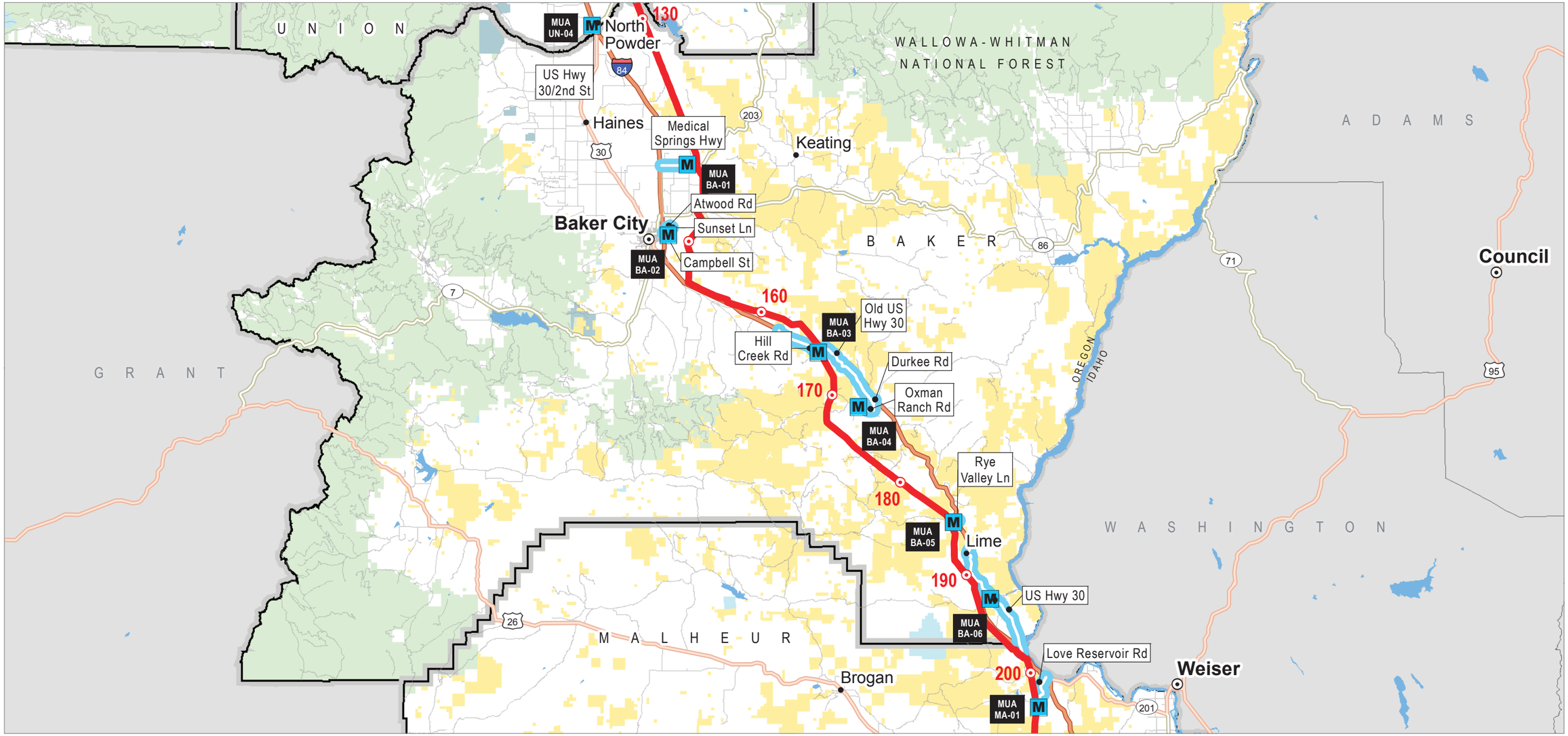
Attachment U-2, Appendix A
Preliminary Haul Routes

Union County

Map 3



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Map Area

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

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

Project Features
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- Multi-Use Area

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

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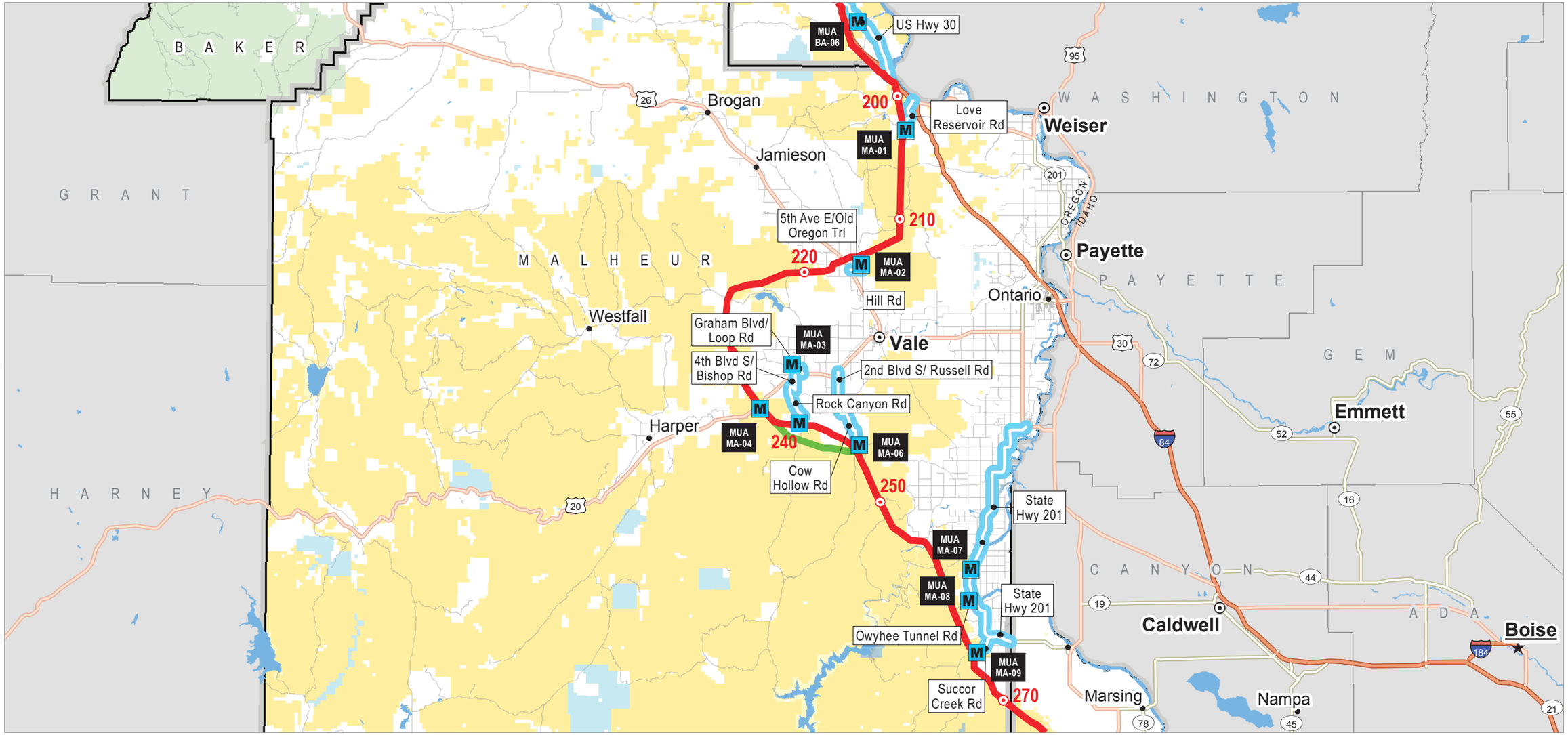
Attachment U-2, Appendix A
Preliminary Haul Routes

Baker County

Map 4



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Map Area

OREGON

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

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Transportation Features
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Public Roads
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- Major Roads
- Other Roads

Project Features
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- Alternative
- Ten Mile Marker
- M Multi-Use Area

Land Status
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- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Other Federal
- Private
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- State or Local Wildlife, Parks and Recreation

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

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An IDACORP Company

Attachment U-2, Appendix A
Preliminary Haul Routes

Malheur County

Map 5

APPENDIX B
BOARDMAN TO HEMINGWAY – 2016 UPDATED TRAFFIC ESTIMATES

Updated Traffic Information (from HDR 2016)

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

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

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

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

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

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

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

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

Attachment U-3

Draft Fire Prevention and Suppression Plan

ATTACHMENT U-3
DRAFT FIRE PREVENTION AND SUPPRESSION PLAN

Draft Fire Prevention and Suppression Plan

Boardman to Hemingway Transmission Line Project

1221 West Idaho Street
Boise, Idaho 83702

Mark Stokes, Project Leader
(208) 388-2483
MStokes@idahopower.com

Zach Funkhouser, Permitting
(208) 388-5375
ZFunkhouser@idahopower.com

September 2018; July 2020 (Modified by Oregon Department of Energy during ASC – PO Phase)

Agency Review Process

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

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

Step 1: Certificate Holder's Update of Draft Plan or Future Plan Amendment: The certificate holder may develop one Fire Prevention and Suppression Plan to cover all construction activities for the entire facility; or, may develop individual plans per county, segment or phase, as best suited for facility construction. Based on the draft Fire Prevention and Suppression Plan included as Attachment U-3 of the Final Order on the ASC, the certificate holder shall update the draft plan(s) based on facility design and construction plans. If the plan(s) are amended following finalization, the certificate holder shall clearly identify and provide basis for any proposed changes.

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

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

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

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

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

TABLE OF CONTENTS

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
IPC	Idaho Power Company
kV	kilovolt
ODF	Oregon Department of Forestry
ORS	Oregon Revised Statute
Plan	Fire Prevention and Suppression Plan
Project	Boardman to Hemingway Transmission Line Project
RFPA	Rural Fire Protection Association
RFPD	Rural Fire Protection District
ROW	right-of-way
UL	Underwriters Laboratories
USFS	United States Forest Service

1.0 INTRODUCTION

Idaho Power Company (IPC) is proposing to construct, operate, and maintain a high-voltage transmission line between Boardman, Oregon, and the Hemingway Station in southwestern Idaho, known as the Boardman to Hemingway Transmission Line Project (Project) as an extension of IPC's electrical system. The Project includes 270.8 miles of new single-circuit 500-kilovolt (kV) transmission line, removal of 12 miles of existing 69-kV transmission line, rebuilding of 0.9 mile of a 230-kV transmission line, and rebuilding of 1.1 miles of an existing 138-kV transmission line into a new right-of-way (ROW). The Project includes ground-disturbing activities associated with construction of transmission support structures; their associated construction work areas; pulling sites for tensioning conductors; access roads to each structure; multi-use areas; light-duty fly yards; communications stations; and stations. The Project crosses private land and public lands administered by the Bureau of Land Management (BLM), United States Forest Service (USFS), Bureau of Reclamation, Department of Defense, and the states of Idaho and Oregon.

This preliminary Fire Prevention and Suppression Plan (Plan) describes the framework for measures to be taken by IPC and its contractors (Contractor) to ensure fire prevention and suppression measures are carried out in accordance with federal, state, and local regulations. Measures identified in this Plan apply to work within the project area defined as the ROW; access roads; all work and storage areas, whether temporary or permanent; and other areas used during construction and operation of the Project. The Oregon Department of Energy (ODOE or Department) incorporated revisions and additional text included by the applicant in its ASC Exhibit U Errata.

1.1 Purpose

The risk of fire danger during transmission line construction is related to smoking, refueling activities, operating vehicles and other equipment off roadways, welding activities, and the use of explosive materials and flammable liquids. During operation, the risk of fire is primarily from vehicles and maintenance activities that require welding. Additionally, weather events that affect the transmission line could result in the transmission line igniting a fire.

This Plan establishes standards and practices to minimize risk of fire ignition and, in case of fire, provide for immediate suppression.

1.2 Oregon's Wildfire Protection System

The prevention and suppression of wildfires in eastern Oregon is carried out by the BLM, USFS, Oregon Department of Forestry (ODF) in conjunction with the Rangeland Fire Protection Associations (RFPA) and Rural Fire Protection Districts (RFPD), and local fire districts and agencies (Table 1). The agencies' activities are closely coordinated, primarily through the Pacific Northwest Wildfire Coordinating Group. Coordination of firefighting resources also occurs under Oregon's *Emergency Conflagration Act* that allows the state fire marshal to mobilize and dispatch structural firefighting personnel and equipment when a significant number of structures are threatened by fire and local structural fire-suppression capability is exhausted (ODEQ 2003).

Table 1. Fire Suppression Responsibilities in Oregon

Who	Where	Miles of Proposed Route
Bureau of Land Management	National System of Public Lands	67.7
Department of Defense	Naval Weapons Systems Training Facility Boardman	10.5
U.S. Forest Service	National Forest (NF) and National Grasslands	5.9
City fire departments and rural and rangeland fire protection districts in mutual aid with Oregon Department of Forestry	Structures in Oregon's wildland interface areas covered by mutual-aid agreements. Rangeland fire protection associations on rangeland areas of eastern Oregon outside of both a forest protection district and a rural fire district.	187

Source: ODEQ 2003; GIS Ownership_Analysis_20110804.xlsx.

1.3 Responsibilities and Coordination

This Plan will be implemented by IPC and the Contractor on the Project. IPC and the Contractor are responsible for providing all necessary fire-fighting equipment on the project site to their respective employees and operating under the requirements of this Plan. Prior to construction, the Contractor and IPC will contact the appropriate fire-control authorities and emergency response providers to establish communications (including radio frequencies), obtain any required permits (such as burning or fire waiver permits prior to conducting any heavy equipment or burning activities), and/or fulfill other obligations as directed by fire-control authorities. For facility components located within a fire prevention and response providers' service territory, the distance from service provider to facility component is identified in Table 2 below:

Table 2: Fire Response Providers, per County and Route, and Provider Distance from Site Boundary

Fire Response Organization per County/Route	Miles from Site Boundary
Morrow County	
Proposed Route	
Boardman RFPD	3.0
Pilot Rock RFPD	0.1
Department of Defense (Navy)	10.5
None	44.4
West of Bombing Range Road Alternative 1	
Department of Defense (Navy)	0.1
None	3.7
West of Bombing Range Road Alternative 2	
Department of Defense (Navy)	1.8
None	3.7
Umatilla County	
Proposed Route	
Pilot RFPD	19.7
Northeast Oregon (OFD)	21.2
None	0.0
Union County	
Proposed Route	
La Grande RFPD	1.9

Table 2: Fire Response Providers, per County and Route, and Provider Distance from Site Boundary

Fire Response Organization per County/Route	Miles from Site Boundary
North Powder Fire Dept.	10.2
Northeast Oregon (OFD)	30.1
Bureau of Land Management	0.2
U.S. Forest Service	6.8
None	0.0
Morgan Lake Alternative	
Northeast Oregon (OFD)	18.5
Bureau of Land Management	0.8
None	0.0
Baker County	
Proposed Route	
Burnt River RPA	32.2
Lookout Glasgow RPA	13.3
North Powder Fire Dept.	9.2
Vale RPA	0.0
Northeast Oregon (OFD)	8.2
Bureau of Land Management	11.9
None	5.5
230 kV Rebuild	
Lookout Glasgow RPA	0.9
Malheur County	
Proposed Route	
Adrian RFPD	9.5
Jordan Valley RPA	12.8
Vale RPA	44.9
Bureau of Land Management	53.3
None	7.0
Double Mountain Alternative	
Vale RPA	7.4
Bureau of Land Management	7.4
130 kV Rebuild	
Vale RPA	1.1

The Contractor and IPC will be responsible for coordinating emergency contact information for the facility to relevant emergency responders prior to and during both construction and operation. The Contractor and IPC shall provide, for the facility, its emergency contact name, employer, phone number and business address to, at a minimum: Sheriff's Office, Police Department, Emergency Service Office, Public Works Department, Forest Service, and Ranger Station Interagency Dispatch Centers, as applicable per county,

The Contractor and IPC will also do the following:

- Ensure prevention, detection, pre-suppression, and suppression activities are in accordance with this Plan and federal, ODF, and county laws; ordinances; and regulations pertaining to fire.
- Accompany agency representatives on fire tool and equipment inspections and take corrective action upon notification of any fire-protection requirements not in compliance.
- Restrict operations on federal lands during conditions of high fire danger as described in Section 2.2, Restricted Operations.

As per Oregon Administrative Rule 345-022-0110, construction and operation of the Project and related mitigation are not likely to result in significant adverse impact to the ability of public and private providers to provide fire protection. The fire prevention and suppression measures described in this Plan will be in effect from pre-construction to the end of restoration. These restrictions may change by advance written notice by fire-control authorities. However, required tools and equipment will be kept in serviceable condition and will be immediately available at all times.

1.4 Fire Response Agreements

In areas not covered by a fire response organization or located on federal land, the certificate holder will attempt to negotiate an agreement with the relevant fire response organization or federal agencies as presented in Table 2 above, outlining communication and response procedures for potential fires within their boundaries during facility construction and operation. In those areas not covered by a fire response organization and not located on federal land, the certificate holder will attempt to negotiate an agreement with nearby fire response organizations or the federal agencies to provide fire response. If no such agreements can be reached during construction, the certificate holder will propose alternatives such as contracting with a private fire response company or providing additional firefighting equipment at those sites. If no such agreements can be reached during operation, the certificate holder will consult with the local dispatch centers and report to the ODOE the dispatch center's procedures for responding to wildfires in those areas without fire district coverage. The certificate shall provide documentation to the Oregon Department of Energy, demonstrating the final agreements or alternative contract agreements for fire response.

2.0 FIRE PREVENTION MEASURES

2.1 Preconstruction and Construction

Methods and procedures to be implemented prior to and during construction, operation, maintenance, and termination of the Project to minimize the risk of fire are described in the following sections. The methods and procedures outlined below follow guidance in ODF's *Fire Prevention Rules*, OAR Chapter 629, Division 43 (ODF 2017).

2.1.1 Training

The Contractor and IPC will train all personnel on the measures to take in the event of a fire. The Contractor and IPC will immediately proceed to control and extinguish any fire started resulting from their activity. The Contractor and IPC will also inform crew member of fire dangers, locations of extinguishers and equipment, and individual responsibilities for fire prevention and suppression during regular safety briefings. Smoking and fire rules also will be discussed with all field personnel during the Project's environmental training.

2.1.2 Smoking

Smoking is prohibited except in areas a minimum of 10 feet in diameter that have been cleared and graded to bare soil. All burning tobacco and matches will be extinguished before discarding. Smoking is also prohibited while operating equipment or vehicles, except in enclosed cabs or vehicles.

Smoking is never permitted in any area designated by DANGER or NO SMOKING signs. Smoking is not permitted in these areas regardless of any other factor. Smoking is not permitted on the transmission line ROW. Smoking is only permitted on access roads, within vehicles, and in approved smoking areas as described previously.

2.1.3 Spark Arresters

During construction, operation, maintenance, and decommissioning of the ROW, all equipment operating with an internal combustion engine will be equipped with federally-approved spark arresters. Spark arresters are not required on trucks, buses, and passenger vehicles (excluding motorcycles) equipped with an unaltered muffler or on diesel engines equipped with a turbocharger. Agency fire-inspection officers will have full authority to inspect spark arresters on Project equipment prior to its use on the Project on federal lands and periodically during construction.

2.1.4 Parking, Vehicle Operation, and Storage Areas

In no case will motorized equipment, including worker transportation vehicles, be driven or parked outside the designated and approved work limits. Equipment parking areas, the ROW, staging areas, designated vehicle-parking areas, and small stationary engine sites—where permitted—will be cleared of all flammable material. Clearing will extend a minimum of 2 feet beyond the edge of the area to be occupied but not beyond the boundaries of the approved ROW, extra workspace, or ancillary site. Glass containers will not be used to store gasoline or other flammables.

2.1.5 Equipment

All motor vehicles and equipment will carry at least 1 long-handled (48-inch minimum), round-point shovel with a blade no less than 8 inches wide; a double-bit ax or Pulaski (3.5 pounds or larger) with a handle of not less than 26 inches long; one 16–20 pound dry chemical fire extinguisher (with an Underwriters Laboratories [UL] rating of at least 5B or C); and 20–50 gallons of water with a mechanism to effectively spray the water. Individuals using power saws and grinders will have a shovel as described above, and an 8-ounce capacity fire extinguisher immediately available. All equipment will be kept in a serviceable condition, stored in a clearly identified tool box, and readily available. Larger water supplies of 300 gallons or larger (self-propelled) or 500 gallons (not self-propelled) with a pump capable of providing not less than 20 gallons per minute at a pressure of at least 115 pounds per square inch at pump level will be made available as conditions warrant. A nozzle, and enough serviceable hose of not less than ¾ inch inside diameter, to reach from the water supply to any location in the operation area affected by power driven machinery, or 500 feet, whichever is greater will be made available. In some situations, ODF district may allow alternate methods that my provide equal or better suppression of fire.

All power saws will be equipped with an exhaust system which retains at least 90 percent of carbon particles as required by spark arrester guidance, be stopped while fueling, and moved at least 20 feet from the place of fueling before being restarted. Each power saw must have an 8-ounce or larger fire extinguisher and a round pointed shovel (8-inch-wide face and more than 26- inch handle) nearby for immediate use.

The firewatch must constantly observe the operation area during any breaks (up to three hours) in operation activity and for three hours after the power driven machinery used by the operator has been shut down for the day; visually observe all portions of the operation area on which operation activity occurred during the preceding period of activity; and be qualified in the use and operation of assigned firefighting equipment and tools; be physically capable of performing assigned fire suppression activities; and be advised of single employee assignment responsibilities (OAR 437- 007-1315), when working alone. Each person providing fire watch service on an operation area must have adequate facilities for transportation and communication to be able to summon firefighting assistance in a timely manner. Upon discovery of a fire, fire watch personnel must first report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities and agree on a checking system; then after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety.

The Contractor and IPC shall maintain a list, to be provided to local fire-protection agencies, of all equipment that is either specifically designed for, or capable of, being adapted to fighting fires. The Contractor and IPC shall provide basic fire-fighting equipment on-site during construction, including fire extinguishers, shovels, axes, and other tools in sufficient numbers so each employee on-site can assist in the event of a fire-fighting operation.

2.1.6 Road Closures

The Contractor and IPC will notify the appropriate fire-suppression agency of the scheduled closures prior to the open-cut crossing of a road. If required, the Contractor and IPC will construct a bypass prior to the open-cut installation of a road crossing, unless a convenient detour can be established on existing project-approved roads or within project-approved work limits. All bypasses will be clearly marked by the Contractor and IPC. During road closures, the Contractor and IPC will designate one person who knows the bypass to direct traffic. The Contractor and IPC will minimize, to the extent possible, the duration of road closures.

2.1.7 Refueling

Fuel trucks will have a large fire extinguisher charged with the appropriate chemical to control electrical and gas fires. The extinguisher will be a minimum size 35-pound capacity with a minimum 30 BC rating. Power-saw refueling will be done in an area that has first been cleared of material that could catch fire.

2.1.8 Burning

Contractor and IPC personnel are prohibited from burning slash, brush, stumps, trash, explosives storage boxes, or other Project debris unless specifically contracted to do so. No cooking or warming fires or barbecue grills will be allowed. Burn permits are required for all burning except camp fires during closed fire season on lands protected by ODF (Oregon Revised Statute [ORS] 447.515) and, once Regulated Use Closure has been executed, burning of any type is banned with no exceptions (ORS 447.535) (ODF 2015).

2.1.9 Flammable Liquids and Explosives

The handling and use of explosives shall be conducted in strict conformance with all local, state, and federal regulations as detailed in IPC's Construction Specification on Blasting.

2.1.10 Communications

The Contractor and IPC will be responsible for maintaining contact with fire-control agencies and will be equipped with a radio or cellular telephone so immediate contact with local fire-control agencies can be made. If cellular telephone coverage is not available, the Contractor and IPC will use the radio to contact their base, who will telephone emergency dispatch.

2.1.11 Welding

One 5-gallon back-up pump will be required with each welding unit in addition to the standard fire equipment required in all vehicles. All equipment will be kept in a serviceable condition and readily available. Individuals using power saws and grinders will have a shovel as described above, and an 8-pound capacity fire extinguisher immediately available. During fire season, a spotter equipped with a shovel and a fire extinguisher will be required to be present if wildland fuels are present where work is being performed.

2.1.12 Fire Suppression

The Contractor and IPC will take the following actions should a fire occur within the Project area during construction:

- Site personnel will aid in extinguishing a fire ignition before it gets out of control and take action that a prudent person would take to control the fire while still accounting for their own and others safety.
- Immediately notify the nearest fire-suppression agency of the fire location, action taken, and status (see Section 4.0).
- Immediately notify the Contractor and IPC of the fire location and action taken.
- Relinquish fire-suppression activities to agency fire-management officers upon their arrival.

If a reported fire is controlled, the Contractor and IPC will note the location and monitor the progress in extinguishing the fire. A Contractor's or IPC's employee will remain at the fire scene until it is fully extinguished. The extinguished fire will be monitored in accordance with procedures described in Section 2.3 of this document.

IPC acknowledges and understands the responsibilities of the landowner and operator for fire suppression on lands protected by ODF as referenced in ORS 477.064 through 477.125.

2.2 Restricted Operations

The Contractor and IPC will restrict or cease operations in specified locations during fire season at the direction of the land-management agency's closure order. Restrictions may vary from stopping certain operations at a given time to stopping all operations. IPC may obtain approval to continue some or all operations if acceptable precautions are implemented. A written waiver must be issued to the Contractor and IPC.

During periods of high fire danger, the Contractor and IPC will monitor daily for local restrictions. Restrictions are unique to each agency and are triggered by federal and state agency administration. As discussed in Section 1.2, the agencies' activities (including restrictions) are closely coordinated, primarily through the Pacific Northwest Wildfire Coordinating Group. It is the Contractor's and IPC's responsibility to ensure personnel are aware of and following area fire orders.

Notifications

Construction crew members will report all fires, whether extinguished or controlled. If the fire is uncontrolled, the Contractor will call the nearest fire-suppression agency (911) and the IPC inspector. Information regarding the location of the fire, property ownership, and closest access roads should be reported to 911 and IPC.

If a reported fire is controlled but not extinguished, the Contractor or IPC inspector will call to notify the nearest police/fire authorities using the non-emergency telephone line to alert them of the situation.

IPC will maintain and provide the Contractor with an up-to-date list of landowner and land management agency contacts along the transmission line ROW.

2.3 Monitoring

The contractor will be responsible for compliance with all provisions of this Plan. In addition, federal, state, and local fire-control agencies may perform inspections in areas under their jurisdiction at their discretion.

3.0 OPERATION AND MAINTENANCE

3.1 Operation

During transmission line operation, the risk of fire danger is minimal. The primary causes of fire on the ROW result from unauthorized entry by individuals for recreational purposes and from fires started outside the ROW. In the latter case, authorities can use the ROW as a potential firebreak or point of attack. During transmission line operation, access to the ROW will be restricted in accordance with jurisdictional agency or landowner requirements to minimize recreational use of the ROW.

A contact number directly to Idaho Power’s 24/7 dispatch center will be provided to all necessary agencies for notification purposes. Upon being notified of a fire, Idaho Power dispatch will gather as much information as possible and immediately dispatches appropriate personnel to monitor the fire and/or coordinate with onsite emergency agencies.

Once onsite, and if requested, Idaho Power personnel will confirm facilities to be removed from service for safety of fire personnel and communicates this back to Idaho Power dispatch. Idaho Power dispatch then removes the line from service, relaying that information to the Idaho Power onsite personnel, who in turn communicates the condition to onsite emergency agencies.

Response time will vary, based on initial notification times to Idaho Power dispatch. Once onsite, Idaho Power personnel requesting a line outage for safety concerns can expect a line outage within a few minutes. The line would then be considered unavailable to return to service until onsite Idaho Power personnel are able to verify with onsite emergency agencies that all personnel and equipment are no longer in danger of electrical contact.

IPC offers a free on line training course for emergency responders, *Responding to Utility Emergencies,* https://idaho-power.rtueonline.com/, which will help emergency responders learn how to recognize potential hazards involving electricity. This training will also address necessary guidelines that help ensure the safety of responders and the general public.

3.2 Maintenance

During maintenance operations, IPC or its Contractor will equip personnel with basic fire-fighting equipment, including fire extinguishers and shovels as described in Section 2.1.5, Equipment. Maintenance crews will also carry emergency response/fire control phone numbers.

IPC and/or a Contractor will implement the following measures during maintenance activities:

- Conduct inspections of the vehicle undercarriage before entering or exiting the project area to clear vegetation that may have accumulated near the vehicle's exhaust system.
- During BLM's Stage II Fire Restrictions, obtain an appropriate waiver and take appropriate precautions when conducting routine maintenance activities that involve an internal combustion engine, involve generating a flame, involve driving over or parking on dry grass, involve the possibility of dropping a line to the ground, or involve explosives. Precautions include a Fire Prevention Watch Person who will remain in the area for one hour following the cessation of that activity.

Vegetation Management

Trees growing into or near power lines are a concern for IPC because they can create safety and service reliability risks. Branches touching power lines can spark and start fires and cause interruptions in electric supply. Therefore, IPC will conduct vegetation management within the Project ROW to reduce the potential for vegetation to come into contact with the transmission

line. Vegetation management will be conducted in accordance with the Project's vegetation management plan (Exhibit P1, Attachment P1-4). In addition, transmission line protection and control systems will be incorporated into the system and are designed to detect faults (such as arcing from debris contacting the line) and will rapidly shut off power flow (in 1/60th to 3/60th of a second) if arcing is detected.

4.0 LITERATURE CITED

ODEQ (Oregon Department of Environmental Quality). 2003. Oregon Natural Hazards Mitigation Plan. Revised August 19. Available online at: http://www.deq.state.or.us/aq/burning/wildfires/neap/appendixD.pdf

ODF (Oregon Department of Forestry). 2017. Fire Prevention Rules. Available online at: http://arcweb.sos.state.or.us/pages/rules/oars_600/oar_629/629_043.html

OregonLaws.org. 2013. Available online at: http://www.oregonlaws.org/ors/477.064

Attachment W-1

Facilities Removal and Site Restoration Cost Estimate

ATTACHMENT W-1
FACILITIES REMOVAL AND SITE RESTORATION COST ESTIMATE

[As amended by Council, September 2022: See 3. Concrete Wrecking, sub(4) Transmission Structure Foundation. Clarified that the below ground depth of foundation removal would be 3' in EFU zoned land, and 1' in all other zones.]

APPLICATION FOR SITE CERTIFICATE

B2H Exhibit W Errata Sheet

Dear Reader:

Exhibit W demonstrates the Boardman to Hemingway Transmission Line Project (Project) site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition. High-voltage transmission lines, including the Project, are designed and maintained to remain in service in perpetuity. For this reason, it is highly unlikely the Project would ever be retired. Nevertheless, Exhibit W describes the actions necessary to restore the Project site in the unlikely event the Project is retired. Further, Exhibit W provides a financial analysis of the costs associated with such site restoration.

The Applicant submitted its final Application for Site Certification on October 3, 2018. Subsequently, the Oregon Department of Energy requested certain additional information about the Project pursuant to Oregon Administrative Rule (OAR) 345-015-0190(9). This errata sheet provides the requested information—which may include corrections to the exhibit text, tables, figures, and/or proposed conditions—as it relates to Exhibit W.

As you read this exhibit, please keep in mind that any corrections identified in this errata sheet shall prevail over the contents of the exhibit document itself.

Summary of Additional Information Provided for Exhibit W and Its Attachments

Page #	Section #	Request for Additional Information
W-6	Section 3.3	Date of current dollar estimate revised to third quarter 2016.
Attachment W-1	Grid Enhancing Electric Transmission Lines Table	Footnote added to table to explain use of 4% contingency.

Specific Additional Information Provided for Exhibit W and Its Attachments

Page W-6, Section 3.3

Description of Additional Information: Date of current dollar estimate revised.

Text Edits Shown in Red:

IPC estimates that the total cost of restoring the site to a useful, non-hazardous condition is $140,902,000 in third quarter 2016 dollars. A copy of the analysis supporting this calculation is attached as Attachment W-1.

Attachment W-1 Grid Enhancing Electric Transmission Lines Table

Description of Additional Information: Footnote added to table to explain use of 4% contingency.

Text Edits Shown in Red :

A project the size of B2H, that covers such a large area is expected to realize an economy of scale that would justify a 4% contingency for Site Restoration. Also, the B2H project in operation will not result in any hazardous conditions that would be difficult or unusually expensive to restore (i.e. everything to be removed are inert materials) thus the lower restoration contingency is appropriate. The Project Owner Engineer (HDR) has extensive experience restoring transmission line projects that have demonstrated a 4% contingency is appropriate.

Grid-Enhancing Electric Transmission Lines

Tab 01 - Summary Estimating Template

Task Description	Unit	Quantity	Unit Cost	Total	Comments	Methods/Assumptions
1. GENERAL COSTS						
A. PERMITS						
1. DEMOLITION	EA	0	$0.00	$0	All permits included in line item cost below	
2. STREET USE	EA	0	$0.00	$0	All permits included in line item cost below	
3. UTILITIES	EA	1	$25,000.00	$25,000	Pipe line, Rail, crossing and disturbance during decommissioning.	Allocation estimate - $25K
4. EPA ASBESTOS NOTICE	EA	0	$0.00	$0	N/A	
5. PERMITS (Temporary de-construct))	LS	1	$24,183.12	$24,183	Miscellaneous permits	Estimated cost to obtain necessary permits.
Task Subtotal				**$49,183**		
B. MOBILIZATION & DEMOBILIZATION						
1. LABOR	LS	1	$2,613,111.57	$2,613,112	A project of this size is expected to have multiple mobilization costs approximately 5% of the overall Project Cost. Mobilization split 50% Labor and 50% equipment	Assumes ~2.5% of total construction cost before contingency; Taxes
2. EQUIPMENT	LS	1	$2,613,111.57	$2,613,112	See above	Assumes ~2.5% of total construction cost before contingency; taxes
Task Subtotal				**$5,226,223**		
C. ENGINEERING						
1. ENGINEERING	HR	1300	$145.23	$188,799	Engineering subcontracted by Owner to develop SOW, removal specifications and support Owner during decommissioning.	Assumes 1300 hours of engineering time at average rate of $145.23/hr.
2. LAYOUT / TESTING	LS	0	$0.00	$0	N/A	
3. CUSTOM TOOLS & EQUIP	LS	0	$0.00	$0	N/A	
Task Subtotal				**$188,799**		
D. PROJECT OVERHEAD						
1. SUPERVISION	WK	78	$2,475.00	$193,050	Owner's on-site supervision and inspection during decommissioning.	Assumes weekly burdened rate of $2475
2. FOREMAN	WK	78	$2,200.00	$171,600	Site Engineering	Assumes weekly burdened rate of $2200
3. GUARD SERVICE (site security)	WK	234	$4,624.00	$1,082,016	Third party guard service for equipment and materials at project salvage yards.	Assumes 3 guarded sites for 78 weeks. Night and weekend service at $4624/wk.
4. CLERICAL	WK	78	$2,130.00	$166,140	Office staff assistant. One per Owner supervisor.	Assumes 3 clerical ($710/wk).for 78 week duration
5. JOBSITE OFFICE	WK	78	$1,054.00	$82,212	Jobsite office to house temporary demolition services personnel.	Assumes rental cost of $1054/Week.3 trailers for 78 mo duration with hook ups.
6. TEMP. UTILITIES	WK	234	$192.00	$44,928	Jobsite temporary utilities during decommissioning.	Jobsite temporary utilities during decommissioning. Assumes cost of $192/wk for each of 3 project areas for 78 week duration.
7. SPECIAL INSURANCE	LS	0	$0.00	$0	Included in Contractor Overheads	
8. SUBSISTENCE	WK	0	$0.00	$0	Included in burdened labor costs	
Task Subtotal				**$1,739,946**		
E. HAZARDOUS MATERIALS / SPILL MITIGATION						
1. ASBESTOS ABATEMENT	EA	0	$0.00	$0	No hazardous materials expected	
2. Spill Mitigation	EA	4	$15,000.00	$60,000	Minor spills with petroleum products	Not expected but anticipate $15.000 / per incindent
Task Subtotal				**$60,000**		
F. PROTECTION						
1. SIGNS	LS	1	$25,000.00	$25,000	Nominal Amount for Signage	
2. FENCES	LS	3	$30,720.00	$92,160	Chain link fencing around material storage/salvage yards.	Assumes $30.72 K in fencing per storage yard for 3 yards based on Crew and materials
3. PEDESTRIAN WALKWAY	LF	0	$0.00	$0	N/A	
4. SCAFFOLDING	SF	0	$0.00	$0	N/A	
5. SHORING	SF	0	$0.00	$0	N/A	
6. FLAGGING	LS	1	$56,160.00	$56,160	Nominal Amount for Traffic Control	Assumes crew of 2x1 day per week $720/day. Guard structures included in conductor removal.
7. TOOLS AND CONSUMABLES	LS	0	$0.00	$0	Included in burdened labor costs	
Task Subtotal				**$173,320**		
2. SITE CONSTRUCTION						
A. UTILITY DISCONNECTS						
1. POWER	EA	12	$5,391.00	$64,692	Disconnect costs from local utility.	Assumes $5391 disconnect cost from local distribution utility for each of 9 communication stations and 3 storage / staging areas.
Task Subtotal				**$64,692**		
B. PRELIMINARY WORK						
1. Communication Station Fence & Gate removal	EA	9	$5,925.00	$53,325	Removal of existing facility fencing and gates.	Assumes removal of fencing around 9 communication stations. Approximately $5,925 Each
2. Storage yard Fence & Gate removal	EA	3	$5,925.00	$17,775	Removal of storage yard fence on completion of material removal	Assumes removal of fencing around 3 storage yards. Approximately $5,925 Each
3. SAW CUTTING, ETC.	LF	0	$0.00	$0	N/A	
Task Subtotal				**$71,100**		

Tab 01 - Summary Estimating Template

Task Description	Unit	Quantity	Unit Cost	Total	Comments	Methods/Assumptions
C. SITE GRADING						
1A. ACCESS ROAD RESTORATION - PRIMITIVE ROADS AND TOWER PADS	AC	374	$2,000.00	$748,000	Restoration includes scarifying road bed, minimal re-grading, re-seeding.	Assumes 106 miles of overland travel roads restored @ 15' width; 65 miles of bladed roads on <10% sideslopes restored @ 23' width
1B. ACCESS ROAD RESTORATION - BUILT UP ALL-WEATHER ROADS.	AC	207	$5,700.00	$1,181,455	Restoration includes full restoration of built-up all-weather road. Removal of gravel, re-grading as necessary for restoration of natural contours, re-seeding.	Assumes all communication station roads are included, 57 miles of new bladed roads on 10-30% side slopes @ 30' wide.
1C. ROADWAY REMOVAL (GRAVEL)	AC	0	$0.00	$0	Included in 0A.	
2. TOWER PADS AND COMMUNICATION STATIONS	AC	586	$5,700.00	$3,340,200	Restoration includes full restoration of site. Removal of gravel, re-grading as necessary for restoration of natural contours, re-seeding.	1166 structures at 150'x150' (0.5 acres) each and 9 communiction stations at .3 acres ea
2. SITE PREPARATION (TOPSOIL)	AC	583	$4,747.00	$2,767,501	Topsoil restoration (grading&prep) for tower area after de-construct	Anticipate acerage similar to area disturbed by construction. ~0.5 A per site (1166 sites)
3. SEEDING	AC	0	$0.00	$0	Included in 1A, 1B and 2.	
4. MASS EXCAVATION ONSITE	CY	0	$0.00	$0	N/A	
4A. MASS EXCAVATION OFFSITE	CY	0	$0.00	$0	N/A	
5. MASS BACKFILL ONSITE	CY	0	$0.00	$0	N/A	
5A. MASS BACKFILL IMPORT	CY	332662	$8.00	$2,661,296	Backfill required to restore tower benched areas to natural contours.	Assumes 50% of bench cut had been disposed of at local landfills or elsewhere and must be imported. 50% remained on site and will be recycled.
Task Subtotal				**$10,698,452**		
D. UNDERGROUND UTILITY REMOVAL						
1. ELECTRICAL DUCT BANK	EA	9	$4,579.14	$41,212	Remove and backfill underground ducts at communicaton sites.	Assumes 50' of ug duct at 9 comm stations. 4 person crew will complete 1 day on site
2. MH/CB/VAULT REMOVAL	EA	0	$0.00	$0	N/A	
Task Subtotal				**$41,212**		
3. CONCRETE WRECKING						[Imported from Tab 3]
Enter data on tab "03 Concrete Wrecking."						
A. REINFORCED CONCRETE						
1. SLAB ON GRADE	EA	9	$8,100.00	$72,900	Each communication station will have 2 slabs (building & Propane) for removal. Includes removal, haul and disposal.	Assumes 6 person crew. Loaded crew rate is $540/hour includes equipment. Estimate 1 1/2 day per site (15 hrs)
2. MINOR FOOTINGS	CY	0	$0.00	$0	N/A	
3. MASS FOUNDATIONS	CY	0	$0.00	$0	N/A	
4. TRANSMISSION STRUCTURE FOUNDATIONS	CY	12380	$ 300.36	$3,718,402	Foundation removal 10 cy per 500 kV structure (4' diameter, 5' of removed length per leg, 4 legs - 2' above ground, 3' below ground in Exclusive Farm Use zoned land; 1' below ground in all other zones), includes haul and disposal.	Assumes 6 person crew can remove foundations at 1.5 structures per day (~18 cy/day). Loaded crew rate is $540.64/hour.
Task Subtotal				**$3,791,302**		
B. NON-REINFORCED CONCRETE/OTHER						
1. DEAD MEN	CY	0	$0.00	$0	N/A	
2. SECURITY F ILS	LF	0	$0.00	$0	N/A	
3. CONCRETE RECYCLE	CY	0	$0.00	$0	N/A	
4. PILING	EA	0	$0.00	$0	N/A	
Task Subtotal				$0		
4. BUILDING WRECKING (Assumes container construction for ease of construction (factory built) and removal)						
1. Communication Control Building	EA	9	$10,593.00	$95,337	Removal of control building at communication stations. Includes removal of equipment inside building, hauling and disposal.	Assumes 4-person crew will remove salvageable equipment from building in three days. Building remove, load and haul - 3 days. Loaded crew daily rate is $3531 including equipment.
2. ELECTRICAL/MCC	SF	0	$0.00	$0	Included above	
Task Subtotal				**$95,337**		
5. STEEL WRECKING (All steel wrecking assumes material is knocked down and put into stockpile for sorting.)						[Imported from Tab 5]
Enter data on tab "05 Steel Wrecking."						
1. 500-kV LATTICE TOWERS	EA	1,076	$53,650.00	$57,727,400	Removal of hardware and disassembly of 500 kV lattice towers.	Assumes 9 man crew to remove 1 tower in 5 days. Loaded crew rate is $1073/hour including equipment.
2. 500-kV H-FRAME STRUCTURES	EA	90	$21,460.00	$1,931,400	Removal of hardware and disassembly of 500 Kv H-Frames	Assumes 9 man crew to remove 1 h-frame in 2 days. Loaded crew rate is $1073/hour including equipment.
3. SORT/CLEAN/HAUL	EA	0	$0.00	$0	Included in Section 17	
4. LABOR	EA	0	$0.00	$0	Included above	
5. EQUIPMENT	EA	0	$0.00	$0	Included above	
Task Subtotal				**$59,658,800**		

Tab 01 - Summary Estimating Template

Task Description	Unit	Quantity	Unit Cost	Total	Comments	Methods/Assumptions
6. TIMBER WRECKING (All timber wrecking assumes material is knocked down and put into stockpile for sorting).						[Imported from Tab 6]
Enter data on tab "06 Timber Wrecking."						
1. 230-kV TIMBER TOWER	EA	0	$4,604.13	$0		
2. 138-kV TIMBER TOWER	EA	0	$4,604.13	$0		
Task Subtotal				**$0**		
16. ELECTRICAL WRECKING						[Imported from Tab 16]
Enter data on tab "16 Electrical Wrecking."						
1. TRANSFORMERS	EA	0	$0.00	$0	N/A	
2. MOTOR CONTROL CENTER	EA	0	$0.00	$0	N/A	
3. WIRING	LF	0	$0.00	$0	N/A	
4. SWITCH YARD	SF	0	$0.00	$0	N/A	
5. SWITCH YARD TOWERS	EA	0	$0.00	$0	N/A	
6. Grounding	LF	111,200	$0.03	$3,336	Removal , handling & loading	Estimates 2 x laborers and vehicle approxinately 2 hours per tower to retrive and load. Worked in conjunction with foundation removal.
7. Transmission Conductor - 500 kV	MI	286	$76,743.60	$21,917,972	Removal, loading and hauling of 3-1519 ACSR Conductor, Dampers, OHGW and OPGW. Includes guard structures. Unit is circuit-mile.	Estimates 16 person crew to remove one mile in 6 days. Loaded crew rate is $1279/hour.
8. Transmission Line (s) 230/138	MI	4	$9,699.00	$40,833	Includes Shield wire	Retrive and load
9. Insulator Strings	EA	3,498	$10.50	$36,729	Removal Included in tower removal costs	Retrive and load-anticipate landfill disposal at ~$60/ton
10. Communication Stations	Ea	9	$ 7,050.00	$63,450	Removal of Propane and restoration (fill and grade) of the sites	Control building remove under section 4.
Task Subtotal				**$22,062,320**		
17. LOAD & HAUL						
1. LOAD & HAUL - STRUCTURAL STEEL	LD	1,166	$5,000.00	$5,830,000	Loading and hauling of tower steel and H-Frames to laydown/salvage yard.	Assumes 5 man crew to load/haul one structure per day. Loaded crew rate is $500/hour.
2. DISPOSAL - DEBRIS	LD	0	$0.00	$0	N/A	Assume steel will be salvaged w/o disposal fee.
3. LOAD & HAUL CONC.	LD	0	$0.00	$0	Included in Concrete Wrecking	
4. DISPOSAL - CONCRETE	LD	0	$0.00	$0	Included in Concrete Wrecking	
5. SCRAP STEEL	LD	0	$0.00	$0	N/A	
Task Subtotal				**$5,830,000**		
SUBTOTAL				**$109,750,686**		Sum of all task subtotals.
OVERHEAD @	0.0%			$0		Contractor overhead built into loaded labor costs
COSTS + OVERHEAD				$109,750,686		
PROFIT @	0.0%			$0		Contractor profit built into loaded labor costs
COSTS + OVERHEAD + PROFIT				$109,750,686		
INSURANCE @	0.0%			$0		Contractor insurance built into overhead costs
COSTS + OVERHEAD + PROFIT + INSURANCE				$109,750,686		
18. SCRAP CREDIT (Currently not allowed by EFSC.)				**$18,026,428**		[Imported from Tab 18]
SUBTOTAL (if scrap credit given)				$109,750,686		Srap credit is excluded
19. SEPARATE SPECIALTY CONTRACTS				**$485,400**		[Imported from Tab 19]
SUBTOTAL (including specialty contracts)				$110,236,086		
GROSS COST				**$110,236,086**		
ADDERS						
PERFORMANCE BOND						
@ 1%				$1,102,361		
GROSS COST (ADJUSTED)				**$111,338,447**		
ADMINISTRATION AND PROJECT MANAGEMENT						
@ 4%				$4,453,538		
CONTINGENCY -						
@ 20%				$22,267,689		
HAZARDOUS MATERIALS MANAGEMENT CONTINGENCY						
	LS			$0	Included in spill mitigation Line E.2.	
TOTAL SITE RESTORATION COST (not adjusted)				**$138,059,674**		

Grid-Enhancing Electric Transmission Lines

COST ESTIMATE FOR FACILITY SITE RESTORATION

(3rd Quarter 2016 Dollars)

Adjustment Factor: 1.02

GDP Index 2nd Quarter 2016:	**111.7**
Est. GDP Index 2017:	**113.9**

http://www.oregon.gov/DAS/OEA/econo
Historical Quarterly Tables, Other indicators, Quarterly Data

General Costs			
A. PERMITS			$49,183
B. MOBILIZATION			$5,226,223
C. ENGINEERING			$188,799
D. PROJECT OVERHEAD			$1,739,946
E. HAZARDOUS MATERIALS INSPECTIONS			$60,000
F. PROTECTION			$173,320
General Costs Subtotal			**$7,437,471**
Site Construction			
A. UTILITY DISCONNECTS			$64,692
B. PRELIMINARY WORK			$71,100
C. SITE GRADING			$10,698,452
D. UNDERGROUND UTILITY REMOVAL			$41,212
Site Construction Subtotal			**$10,875,456**
Concrete Wrecking			
A. REINFORCED CONCRETE			$3,791,302
B. NON-REINFORCED CONCRETE			$0
Concrete Wrecking Subtotal			**$3,791,302**
Building Wrecking			$95,337
Steel Wrecking			$59,658,800
Timber Wrecking			$0
Electrical Wrecking			$22,062,320
Load & Haul			$5,830,000
Costs Subtotal			$109,750,686
Overhead @	0%		$0
Profit @	0%		$0
Insurance @	0%		$0
Specialty Contracts (subcontracted work)			$485,400
Subtotal			**$110,236,086**
Subtotal Adjusted to Current Dollars			**$112,407,253**
Performance Bond @	1%		$1,124,073
Gross Cost (Adjusted)			**$113,531,326**
Administration and Project Management @		4%	$4,541,253
Contingency @		20%	$22,706,265
Hazardous Materials Management Contingency			$0
Total Site Restoration Cost (current dollars)			**$140,778,844**
Total Site Restoration Cost (rounded to nearest $1,000)			**$140,779,000**

Grid-Enhancing Electric Transmission Lines

Tab 03 - Concrete Wrecking

A. Reinforced Concrete

1	Slab on Grade (CY)	
	Work Item	Quantity
1	Communication Station Pads	250
2		
3		
4		
5		
	Total	250

2	Minor Footings (CY)	
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

3	Mass Footings (CY)	
	Work Item	Quantity
1	See below	
2		
3		
4		
5		
	Total	0

4	Transmission Foundations (CY)	
	Work Item	Quantity
1	Remove 500 kV Tower Fdns	12,380
2	230 kV Rebuild	N/A
3	138/69kV Rebuild	N/A
4		
5	Total	12380

Tab 03 - Concrete Wrecking

B. Non-Reinforced Concrete

	Dead Men (CY)	
1	Work Item	Quantity
	N/A	
1		
2		
3		
4		
5	Total	0

	Security Rails (LF)	
2	Work Item	Quantity
	N/A	
1		
2		
3		
4		
5	Total	0

	Concrete Recycle (CY)	
3	Work Item	Quantity
	N/A	
1		
2		
3		
4		
5	Total	0

	Piling (EA)	
4	Work Item	Quantity
	N/A	
1		
2		
3		
4		
5	Total	0

Grid-Enhancing Electric Transmission Lines

Tab 05 - Steel Wrecking

1 500-kV Towers (EA)		
	Work Item	Quantity
1	500 kV Steel Lattice Towers	1076
2	500 kV Steel H-Frame Structures	90
3		
4		
5		
	Total	1166

2 138/69-kV Monopole Structures (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

3		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

4 Sort/Clean (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

5 Labor (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

6 Equipment (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

Grid-Enhancing Electric Transmission Lines

Tab 06 - Timber Wrecking

1 230-kV Towers (EA)		
	Work Item	Quantity
1		
2		
3		
4		
5		
	Total	0

2 138-kV Towers (EA)		
	Work Item	Quantity
	Work Item	Quantity
1		
2		
3		
4		
5		
	Total	0

Grid-Enhancing Electric Transmission Lines

Tab 16 - Electrical Wrecking

1 Transformers (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

2 Motor Control Center (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

3 Wiring (LF)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

4 Switch Yard (SF)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

Grid-Enhancing Electric Transmission Lines

Tab 16 - Electrical Wrecking

5 Switch Yard \Towers (EA)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

6 Grounding (LF)		
	Work Item	Quantity
1	Copper ground wire (incl. all str's)	111,200
2		
3		
4		
5		
	Total	111,200

7 Transmission Line Wiring (MI)		
	Work Item	Quantity
1	3-1519 ACSR "Deschutes" (500 kV)	285.6
2	1/2" Steel Overhead Shield Wire	285.6
3	48-strand Optical Ground Wire	285.6
4	795 kcm ACSR "Drake" (230 kV)	0.95
5	397 kcm 26/7 ACSR "Ibis" (138 kV)	1.16
6	4/0 6/1 ACSR “Penguin” (69 kV)	N/A
7	20 ASCR "Quail" (12.5 kV)	N/A
8	3/8" Overhead Shield Wire (138 and 230 kV)	2.1
	Total	859

8 Breaker/Insulator/Misc (EA)		
	Work Item	Quantity
1	Transmission Insulator Strings (500 kV)	3,498
2		
3		
4		
5		
	Total	3,498

9 Transmission Line Wiring Equipment (MI)		
	Work Item	Quantity
1	N/A	
2		
3		
4		
5		
	Total	0

Grid-Enhancing Electric Transmission Lines

Tab 18 - Scrap Value (NOT USED)

Scrap Item	Quantity	Unit	Unit Rate	Value
Structure Steel	31,366	TN	171	5,374,373
Conductor Steel	1,281	TN	171	219,492
Shield Wire Steel	370	TN	171	63,397
OPGW Steel	0	TN	171	0
Hardware Steel	2,040	TN	175	358,007
Conductor Aluminum	8,066	TN	1,440	11,614,320
OPGW Aluminum	324	TN	1,160	375,840
Grounding Copper	7	TN	3,000	21,000
Equip Scrap Value				0
Total				**$ 18,026,428**

Grid-Enhancing Electric Transmission Lines

Tab 19 - Separate Specialty Contracts

Subcontractor	Quantity	Unit	Unit Rate	Value
Lot Rentals	1	LS	60,000	60,000
Port-a-John Rentals	1	LS	91,200	91,200
Dumpster Rentals	1	LS	34,200	34,200
LIDAR Survey	300	MI	1,000	300,000
				0
Total				**485,400**

Attachment X-4

Noise Analysis Results by NSR Location

ATTACHMENT X-4
TABULATED SUMMARY OF ACOUSTIC MODELING RESULTS BY RECEPTOR LOCATION

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
1	1008	Residence	1,673	1	Morrow	296,829	5,078,967	MP39	50	10	35	-
2	1009	Residence	1,148	1	Morrow	296,681	5,079,106	MP39	50	12	37	-
3	new	Residence	1,837	17.9	Morrow	295,456	5,052,088	MP05	27	10	35	+8
4	new	Residence	3,232	27.9	Morrow	311,219	5,050,286	MP05	27	8	33	+6
5	new	Residence	3,556	28.1	Morrow	311,442	5,050,316	MP05	27	8	33	+6
6	1176	Residence	2,657	33.2	Morrow	318,872	5,046,093	MP05	27	9	34	+7
7	New-1	Residence	2,884	49.7	Umatilla	335,681	5,030,287	MP06	25	9	34	+10
8	New-2	Residence	2,139	58.9	Umatilla	350,487	5,030,937	MP06	25	11	36	**+11**
5000	5000	Residence	2267	58.9	Umatilla	350,515	5,030,973	MP06	25	10	35	+10
5001	5001	Residence	2352	58.9	Umatilla	350,544	5,031,003	MP06	25	10	35	+10
5002	5002	Residence	2,067	58.9	Umatilla	350,575	5,030,912	MP06	25	11	36	**+11**
9	New-3	Residence	1,834	59.6	Umatilla	351,608	5,029,688	MP06	25	11	36	**+12**
10	New-4	Residence	1,834	59.6	Umatilla	351,608	5,029,688	MP06	25	11	36	**+12**
11	New-5	Residence	1,398	59.7	Umatilla	351,805	5,030,667	MP06	25	13	38	**+13**
12	new	Residence	2,684	64	Umatilla	358,711	5,030,227	MP28	30	9	34	+6
13	new	Residence	2,221	64.2	Umatilla	358,940	5,030,005	MP28	30	10	35	+6
14	New-6	Residence	1,096	64.7	Umatilla	359,251	5,029,655	MP28	30	14	39	+9
15	new	Residence	2,428	64.8	Umatilla	360,178	5,029,105	MP28	30	10	35	+6
16	new	Residence	4,032	67.2	Umatilla	363,067	5,029,396	MP28	30	9	34	+5
17	new	Residence	2,569	75.7	Umatilla	374,908	5,035,471	MP08	41	10	35	-
18	123	Residence	919	78.5	Umatilla	377,967	5,038,280	MP09	35	16	41	+7
19	128	Residence	2,192	79.8	Umatilla	379,730	5,039,276	MP09	35	12	37	+4
20	118	Residence	1,483	82.9	Umatilla	384,896	5,038,241	MP09	35	14	39	+5
21	108	Residence	2,116	88.8	Union	390,861	5,032,259	MP11	32	13	38	+6
22	111	Residence	2,218	88.9	Union	390,956	5,032,288	MP11	32	12	37	+6
23	107	Residence	1,785	89	Union	391,084	5,032,153	MP11	32	14	39	+7
24	266	Residence	1,555	89	Union	391,099	5,032,083	MP11	32	14	39	+8
25	106	Residence	1,883	90.9	Union	393,171	5,029,402	MP11	32	13	38	+7
26	265	Cabin	1,260	91.6	Union	393,869	5,029,058	MP11	32	15	40	+8
29	257	School/Correctional Facility	1,867	99.1	Union	402,712	5,021,145	MP 100	31	12	37	+7
36	blank	Residence	1,175	105	Union	411,360	5,018,085	MP 101	36	15	40	+6

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
37	blank	Residence	2,733	105.3	Union	411,775	5,017,526	MP 101	36	11	36	+3
38	blank	Residence	1,962	105.8	Union	413,069	5,018,465	MP 102	32	12	37	+6
39	blank	Residence	1,339	105.8	Union	412,939	5,018,324	MP 102	32	14	39	+7
40	blank	Residence	2,402	105.9	Union	413,382	5,018,048	MP 102	32	11	36	+5
5003	5003	Residence	1225	105.9	Union	413,012	5,018,123	MP 102	32	15	40	+8
41	blank	Residence	1,650	106	Union	413,170	5,017,950	MP 102	32	16	41	+9
42	blank	Residence	2,949	106.1	Union	411,871	5,017,363	MP 101	36	14	39	+5
43	blank	Residence	1,978	106.1	Union	413,329	5,017,731	MP 102	32	15	40	+8
44	blank	Residence	1,627	106.1	Union	413,205	5,017,785	MP 102	32	16	41	+9
45	blank	Residence	2,024	106.2	Union	412,192	5,017,242	MP 101	36	16	41	+6
46	blank	Residence	991	106.2	Union	413,066	5,017,539	MP 102	32	18	43	**+11**
47	blank	Residence	1,345	106.3	Union	412,401	5,017,259	MP 101	36	18	43	+8
48	blank	Residence	2,152	106.3	Union	412,204	5,017,039	MP 101	36	15	40	+6
49	blank	Residence	1,247	106.3	Union	413,179	5,017,410	MP 102	32	17	42	+10
50	blank	Residence	1,791	106.3	Union	413,355	5,017,402	MP 102	32	15	40	+9
51	blank	Residence	3,130	106.4	Union	412,104	5,016,572	MP 100	31	13	38	+8
52	blank	Residence	2,461	106.4	Union	412,287	5,016,666	MP 101	36	15	40	+5
53	blank	Residence	1,759	106.4	Union	412,342	5,016,992	MP 101	36	16	41	+7
54	blank	Residence	1,900	106.4	Union	412,352	5,016,874	MP 101	36	16	41	+6
55	blank	Residence	3,041	106.6	Union	412,252	5,016,409	MP 100	31	14	39	+8
5004**	5004	Residence	338	106.7	Union	413,027	5,016,731	MP 101	36	21	46	**+11**
537	537	Residence	3,436	107.5	Union	414,796	5,016,231	MP 102	32	10	35	+4
56	blank	Residence	3,035	107.8	Union	413,460	5,014,689	MP 100	31	14	39	+8
5005	5005	Residence	3219	107.9	Union	413,341	5,014,758	MP 100	31	10	35	+5
57	blank	Residence	1,939	110.3	Union	417,831	5,013,289	MP 103	43	12	37	-
58	blank	Residence	1,306	110.9	Union	418,035	5,012,267	MP 103	43	14	39	+1
59	blank	Residence	1,581	111.7	Union	418,564	5,011,176	MP 103	43	13	38	+1
60	blank	Residence	2,349	111.7	Union	418,791	5,011,237	MP 103	43	11	36	-
61	blank	Residence	2,858	111.9	Union	419,051	5,011,007	MP 103	43	10	35	-
62	blank	Residence	3,035	112.6	Union	419,517	5,009,994	MP 103	43	9	34	-
63	blank	Residence	958	112.6	Union	418,948	5,009,711	MP 103	43	15	40	+2

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
64	blank	Residence	1,106	115.4	Union	420,229	5,005,549	MP13	48	15	40	-
65	blank	Residence	1,854	119.4	Union	423,413	4,999,692	MP13	48	12	37	-
66	91	Residence	2,106	120.5	Union	424,119	4,998,514	MP13	48	12	37	-
67	blank	Residence	997	123.7	Union	428,499	4,995,702	MP14	33	16	41	+8
68	85	Residence	2,083	124.1	Union	428,330	4,994,572	MP14	33	12	37	+5
69	83	Residence	1,467	142.6	Baker	439,860	4,968,035	MP15	27	14	39	**+12**
70	82	Residence	1,053	142.7	Baker	439,993	4,967,946	MP15	27	15	40	**+14**
71***	-1	Residence	1,335	144.3	Baker	440,661	4,965,581	MP15	27	14	39	+13
72	80	Residence	3,320	144.3	Baker	440,057	4,965,541	MP15	27	10	35	+9
73	78	Residence	2,923	145.2	Baker	440,273	4,963,747	MP15	27	10	35	+9
5012***	5012	Residence	1552	147.1	Baker	439,939	4,961,807	MP15	27	14	39	+12
74	1262	Residence	2,582	153.7	Baker	439,029	4,951,743	MP16	41	11	36	+1
75	523	Residence	1,591	153.8	Baker	439,265	4,951,957	MP16	41	13	38	+2
76	blank	Residence	2,323	154.1	Baker	439,590	4,951,522	MP16	41	12	37	+1
77	1266	Residence	2,707	154.4	Baker	439,982	4,951,168	MP16	41	11	36	+1
78	72	Residence	1,371	154.9	Baker	440,872	4,951,166	MP16	41	14	39	+2
79	71	Residence	860	155.2	Baker	441,403	4,951,092	MP16	41	17	42	+4
80	1269	Residence	3,058	155.6	Baker	441,686	4,950,225	MP16	41	11	36	+1
81	blank	Residence	2,431	156	Baker	442,416	4,950,110	MP16	41	12	37	+1
82	227	Residence	2,182	159.9	Baker	448,178	4,948,130	MP17	41	12	37	+1
83	68	Residence	2,205	162.3	Baker	452,311	4,947,967	MP09	35	12	37	+4
84	1714	Residence	2,881	166.2	Baker	455,371	4,943,302	MP17	41	10	35	+1
5010	5010	Residence	1,170	174.2	Baker	459,026	4,932,158	MP35	24	16	41	**+17**
85	36	Residence	1,473	185.2	Baker	473,610	4,921,457	MP25	46	13	38	-
86	34	Residence	1,578	185.3	Baker	473,678	4,921,255	MP25	46	12	37	-
88	873	Residence	705	198.5	Malheur	482,540	4,903,638	MP32	41	19	44	+5
89	876	Residence	443	198.7	Malheur	482,856	4,903,318	MP32	41	21	46	+7
90	877	Residence	505	199.1	Malheur	483,155	4,902,774	MP32	41	21	46	+6
91	936	Residence	2,375	199.8	Malheur	482,565	4,901,562	MP33	34	10	35	+3
92	887	Residence	2,434	215.2	Malheur	478,340	4,879,805	MP35	24	10	35	**+12**
93	888	Residence	2,283	216	Malheur	477,194	4,879,669	MP34	24	10	35	**+11**

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
94	891	Residence	1,801	216.2	Malheur	476,768	4,879,627	MP34	24	12	37	+12
95	890	Residence	2,070	216.3	Malheur	476,735	4,879,525	MP34	24	11	36	+12
518	518	Residence	2734	216.4	Malheur	296,829	5,078,967	MP34	24	10	35	+11
96	892	Residence	1,470	216.5	Malheur	476,299	4,879,547	MP34	24	13	38	+13
97	929	Residence	1,693	216.5	Malheur	475,893	4,880,423	MP34	24	12	37	+13
98	925	Residence	1,102	216.8	Malheur	475,509	4,880,072	MP35	24	14	39	+15
99	895	Residence	1,768	216.9	Malheur	475,678	4,879,196	MP35	24	12	37	+13
100	896	Residence	2,119	217	Malheur	475,620	4,879,057	MP35	24	11	36	+12
101	899	Residence	673	217	Malheur	475,459	4,879,468	MP34	24	17	42	+17
102	924	Residence	607	217.3	Malheur	474,932	4,879,676	MP35	24	17	42	+18
103	915	Residence	2,575	217.4	Malheur	474,051	4,879,545	MP35	24	10	35	+11
104	916	Residence	1,598	217.4	Malheur	474,382	4,879,621	MP35	24	12	37	+14
105	919	Residence	745	217.4	Malheur	474,630	4,879,540	MP35	24	16	41	+17
106	904	Residence	2,621	217.7	Malheur	475,377	4,878,437	MP35	24	10	35	+11
107	905	Residence	2,474	217.9	Malheur	474,640	4,878,052	MP35	24	10	35	+12
108	911	Residence	2,119	218.1	Malheur	474,307	4,878,073	MP35	24	11	36	+12
109	913	Residence	2,595	218.1	Malheur	473,894	4,879,450	MP35	24	10	35	+11
110	914	Residence	2,648	218.1	Malheur	473,920	4,879,474	MP35	24	10	35	+11
5011	5011	Residence	780	227.1	Malheur	460,787	4,874,759	MP35	24	17	42	+18
111	1415	Residence	2,746	253.5	Malheur	484,633	4,844,659	MP35	24	10	35	+11
5008	5008	Residence	1,340	254.7	Malheur	485,767	4,843,757	MP35	24	13	38	+14
5009	5009	Residence	2,060	254.7	Malheur	485,808	4,843,997	MP35	24	11	36	+12
112	1420	Residence	1,732	254.9	Malheur	486,262	4,843,852	MP35	24	12	37	+13
133	133	Residence	890	255.4	Malheur	486,617	4,842,858	MP35	24	15	40	+16
113	1422	Residence	3,087	263.7	Malheur	492,765	4,831,089	MP35	24	9	34	+11

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

Morgan Lake Alternative

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
114	blank	Residence	3,031	1.9	Union	403,831	5,018,094	MP 100	31	10	35	+5
115	blank	Residence	659	6.1	Union	410,100	5,016,605	MP 100	31	21	46	**+15**
116	blank	Residence	2,989	6.7	Union	411,682	5,016,649	MP 100	31	14	39	+8
117	98	Cabin	2,549	6.7	Union	410,416	5,015,531	MP 100	31	15	40	+9
118	100	Residence	1,499	6.7	Union	410,654	5,015,745	MP 100	31	17	42	**+11**
119	blank	Structure, Multi-purpose shed	935	6.8	Union	410,895	5,015,727	MP 100	31	20	45	+14
120	blank	Residence	2,897	6.8	Union	411,725	5,016,555	MP 100	31	14	39	+8
121	1237	Structure, General-purpose building	1,079	6.9	Union	410,912	5,015,638	MP 100	31	19	44	+13
122	blank	Residence	2,579	7.1	Union	412,010	5,016,071	MP 100	31	15	40	+9
123	blank	Residence	2,618	7.1	Union	411,979	5,016,127	MP 100	31	14	39	+9
124	blank	Residence	2,953	7.1	Union	412,025	5,016,230	MP 100	31	14	39	+8
125	blank	Residence	1,378	7.4	Union	411,384	5,014,946	MP 100	31	18	43	**+12**
126	blank	Residence	3,081	8.3	Union	413,366	5,014,719	MP 100	31	14	39	+8
127	blank	Residence	2,077	9.1	Union	413,861	5,013,840	MP 100	31	13	38	+7
128	blank	Residence	1,926	9.1	Union	413,858	5,013,792	MP 100	31	13	38	+8
129	blank	Residence	1,936	9.1	Union	413,823	5,013,810	MP 100	31	13	38	+8
130	blank	Residence	2,297	9.2	Union	413,986	5,013,859	MP 100	31	12	37	+7
131	blank	Residence	3,071	11	Union	414,566	5,010,723	MP 100	31	12	37	+7
132	blank	Residence	1,060	12.3	Union	416,014	5,008,955	MP 100	31	17	42	**+11**
535	535	Residence	2,249	9.7	Union	413,762	5,012,340	MP 100	31	13	38	+7
536	536	Residence	3,160	7.7	Union	412,811	5,015,417	MP 100	31	10	35	+6
538	538	Residence	3,195	7.1	Union	412,241	5,016,101	MP 100	31	10	35	+6
133	133C	Campsite	2,758	6.1	Union	410,853	5,017,342	MP 100	31	15	40	+9
134	134C	Campsite	2,711	6.1	Union	410,859	5,017,318	MP 100	31	15	40	+9
135	135C	Campsite	1,681	6.1	Union	410,675	5,017,062	MP 100	31	17	42	+11
136	136C	Campsite	2,614	6.1	Union	410,861	5,017,277	MP 100	31	15	40	+9
137	137C	Campsite	2,517	6.1	Union	410,853	5,017,245	MP 100	31	15	40	+9
138	138C	Campsite	2,403	6.1	Union	410,842	5,017,209	MP 100	31	15	40	+9
139	139C	Campsite	2,180	6.1	Union	410,808	5,017,149	MP 100	31	16	41	+10
140	140C	Campsite	2,116	6.1	Union	410,792	5,017,137	MP 100	31	16	41	+10

Attachment X-4. Revised Tabulated Summary of Acoustic Modeling Results by Receptor Location

Morgan Lake Alternative

NSR Sequential Number	Receptor ID	Receptor Status	Distance from Receptor to the Transmission Line (ft)	Project Transmission Line Milepost	County	UTM Coordinates (m)		Associated Monitoring Position	Late Night Baseline Sound Pressure Level (dBA)	Predicted Sound Level (dBA)		Foul Weather Increase over Late Night Baseline (dBA)
						Easting	Northing			Fair Weather*	Foul Weather	
141	141C	Campsite	2,243	6.1	Union	410,820	5,017,164	MP 100	31	16	41	+10
142	142	Recreation Area	1,015	6.4	Union	410,852	5,016,644	MP 100	31	19	44	+13
143	143	Recreation Area	934	6.4	Union	410,898	5,016,569	MP 100	31	20	45	+14
144	144	Recreation Area	1,681	6.5	Union	411,108	5,016,684	MP 100	31	17	42	+11
145	145	Recreation Area	1,899	6.5	Union	411,150	5,016,736	MP 100	31	16	41	+11
146	146	Recreation Area	1,999	6.5	Union	411,184	5,016,746	MP 100	31	16	41	+10
147	147	Recreation Area	1,075	6.3	Union	410,707	5,016,794	MP 100	31	19	44	+13
148	148	Recreation Area	1,058	6.4	Union	410,843	5,016,671	MP 100	31	19	44	+13
149	149	Recreation Area	1,280	6.2	Union	410,626	5,016,944	MP 100	31	18	43	+12
150	150	Recreation Area	1,204	6.2	Union	410,674	5,016,878	MP 100	31	19	44	+13
151	151	Recreation Area	804	6.3	Union	410,658	5,016,726	MP 100	31	21	46	+15
152	152	Recreation Area	900	6.4	Union	410,819	5,016,630	MP 100	31	20	45	+14
153	153	Recreation Area	400	6.4	Union	410,670	5,016,554	MP 100	31	24	49	+18
154	154	Recreation Area	1,272	6.4	Union	410,985	5,016,628	MP 100	31	18	43	+12
155	155	Recreation Area	2,130	6.5	Union	411,171	5,016,807	MP 100	31	16	41	+10
156	156	Recreation Area	1,465	6.1	Union	410,572	5,017,065	MP 100	31	18	43	+12
157	157	Recreation Area	1,611	5.9	Union	410,373	5,017,328	MP 100	31	17	42	+11

Notes:

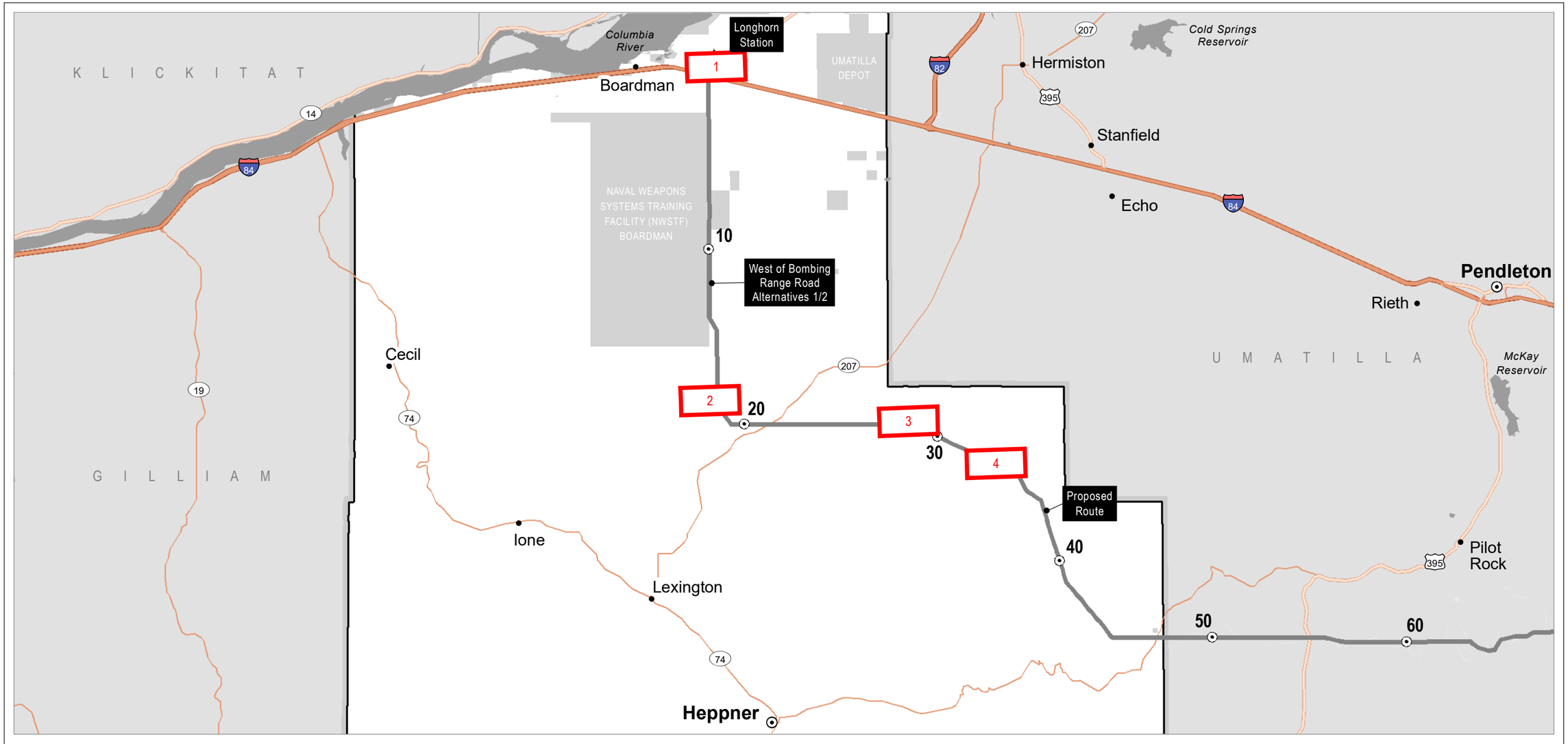
Receptor IDs are provided for ease in cross-referencing older documentation. An incremental increase presented as (-) signifies that the future increase as a result of the Project is predicted to be less than 1 dBA when considered cumulatively with the baseline condition. The incremental increase is obtained by first logarithmically adding the Predicted Foul Weather Sound Level to the Late Night Baseline Sound Pressure Level. The Late Night Baseline Sound Pressure Level is then arithmetically subtracted from this total to quantify the incremental increase. Note that sound pressure levels cannot be added together linearly. For example, a baseline sound pressure level of 25 dBA plus a received sound pressure level of 33 dBA does not equal 58 dBA; rather, using logarithmic addition, the resultant sound pressure level would be 34 dBA. Sound levels in this table are reported in whole decibels.

* Predicted fair weather sound levels are 25 dBA below predicted foul weather sound levels. Fair weather values in Attachment X-4 have been corrected where applicable.
** IPC's review of Google Earth imagery could not confirm that NSR-5004 is a residence. Nevertheless, as a conservative measure, IPC has designated NSR-5004 as a residence and as an exceedance for the purposes of this review.
***When considered in isolation, IPC's modeling shows NSR-71 is expected to have an estimated noise increase of +13 A-weighted decibels (dBA). However, there is an existing transmission line located between NSR-71 and the Project, and after taking into account the predicted foul weather corona noise from the existing line, the Project does not result in an exceedance at NSR-71. Similarly, when considered in isolation, NSR-5012 is expected to have an increase of +12 dBA; but when the noise from the nearby existing 230-kV line is considered as part of the baseline, the Project does not result in an exceedance at NSR-5012. Therefore, NSR-71 and NSR-5012 are not expected to result in exceedances after the noise from the existing transmission lines is taken into account.
Grey font indicates receptors that ***are not*** NSRs for purposes of determining compliance with ODEQ's Ambient Antidegradation Standard. *See* OAR 340-035-0035(1)(b)(B)(i) (the Ambient Antidegradation Standard); OAR 340-035-0015(38) (definition of "noise sensitive property").
Red font indicates foul weather increase for residence over late night baseline of or greater than 11 dBA.
dBA = A-weighted decibel
ft = feet
ID = identification
m = meter
MP = milepost
NSR = noise sensitive receptor
ODEQ = Oregon Department of Environmental Quality
UTM = Universal Transverse Mercator

Attachment X-5

Maps - All NSRs and NSR Exceedances

ATTACHMENT X-5
AERIAL MAPS SHOWING NOISE SENSITIVE RECEPTORS PREDICTED TO EXCEED AMBIENT DEGRADATION STANDARD



0 5
Miles

OREGON

Map Area

Source(s): BLM, IPC, Esri

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Map Index

Location Map (Map #)

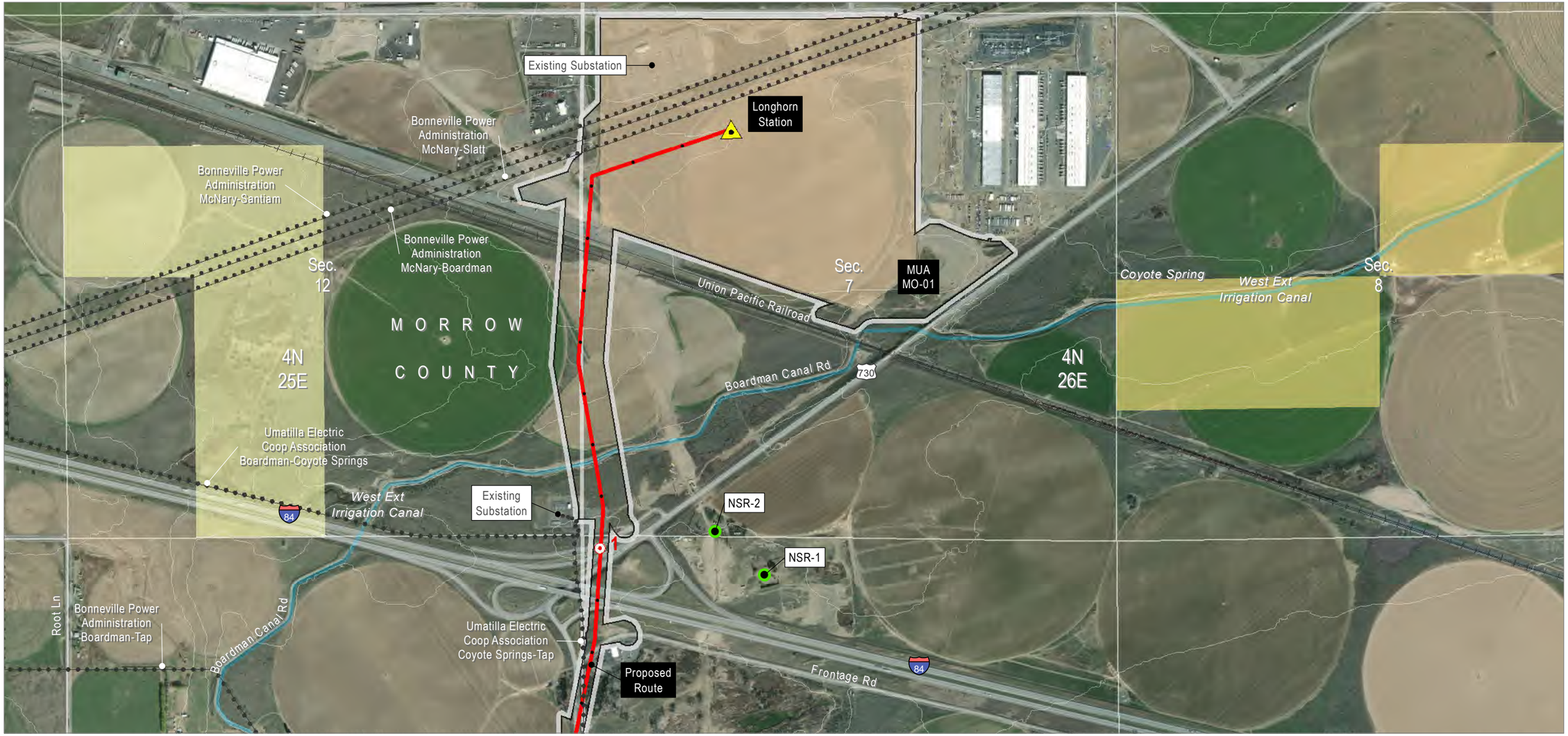
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

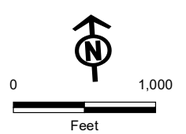
IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Morrow County

Map Index





Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile
- Stations

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Other Federal
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Morrow County

Map 1

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Morrow County

Map 2

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Morrow County

Map 3

0 1,000 Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

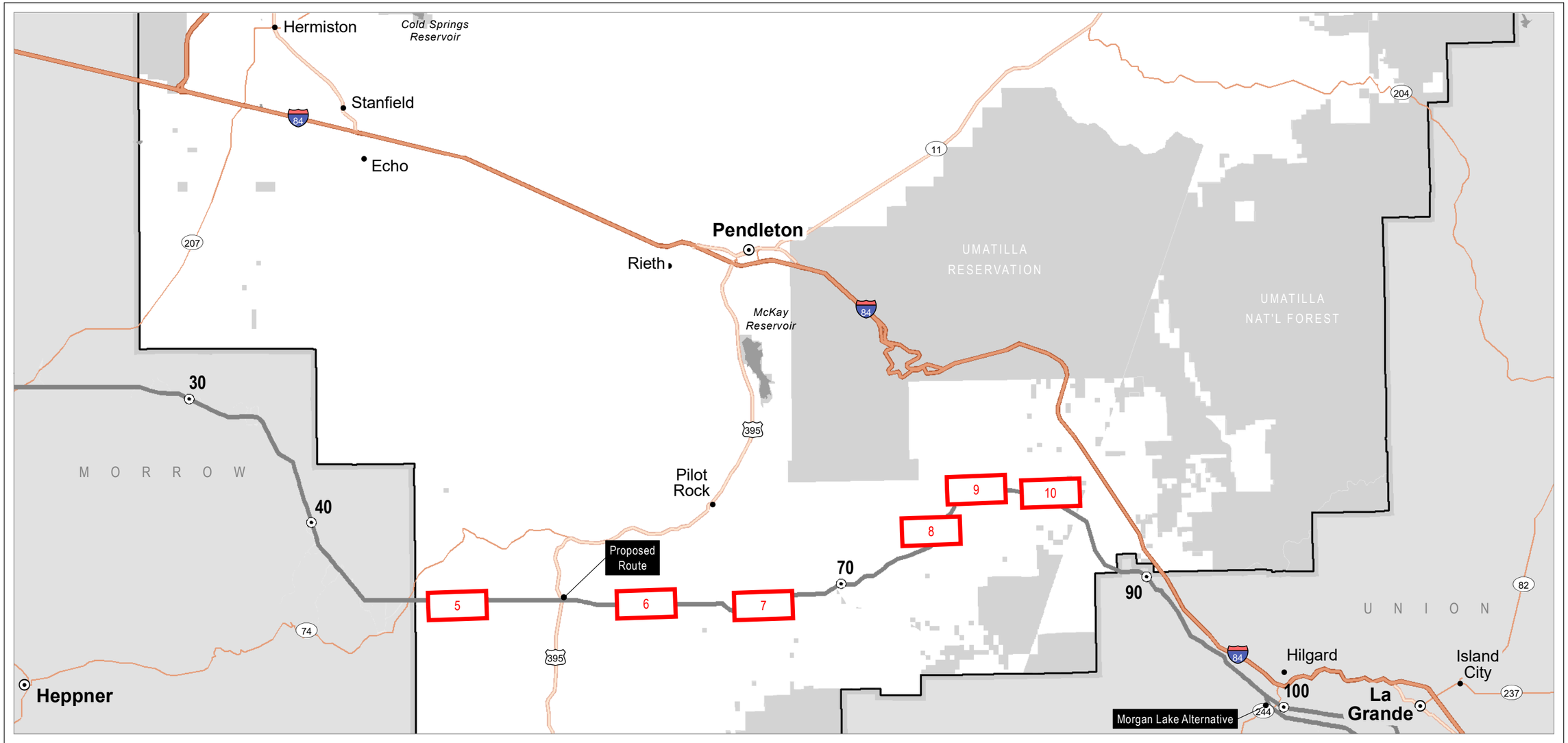
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Morrow County

Map 4



0 5
Miles

OREGON

Map Area

Source(s): BLM, IPC, Esri

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Map Index
Location Map (Map #)

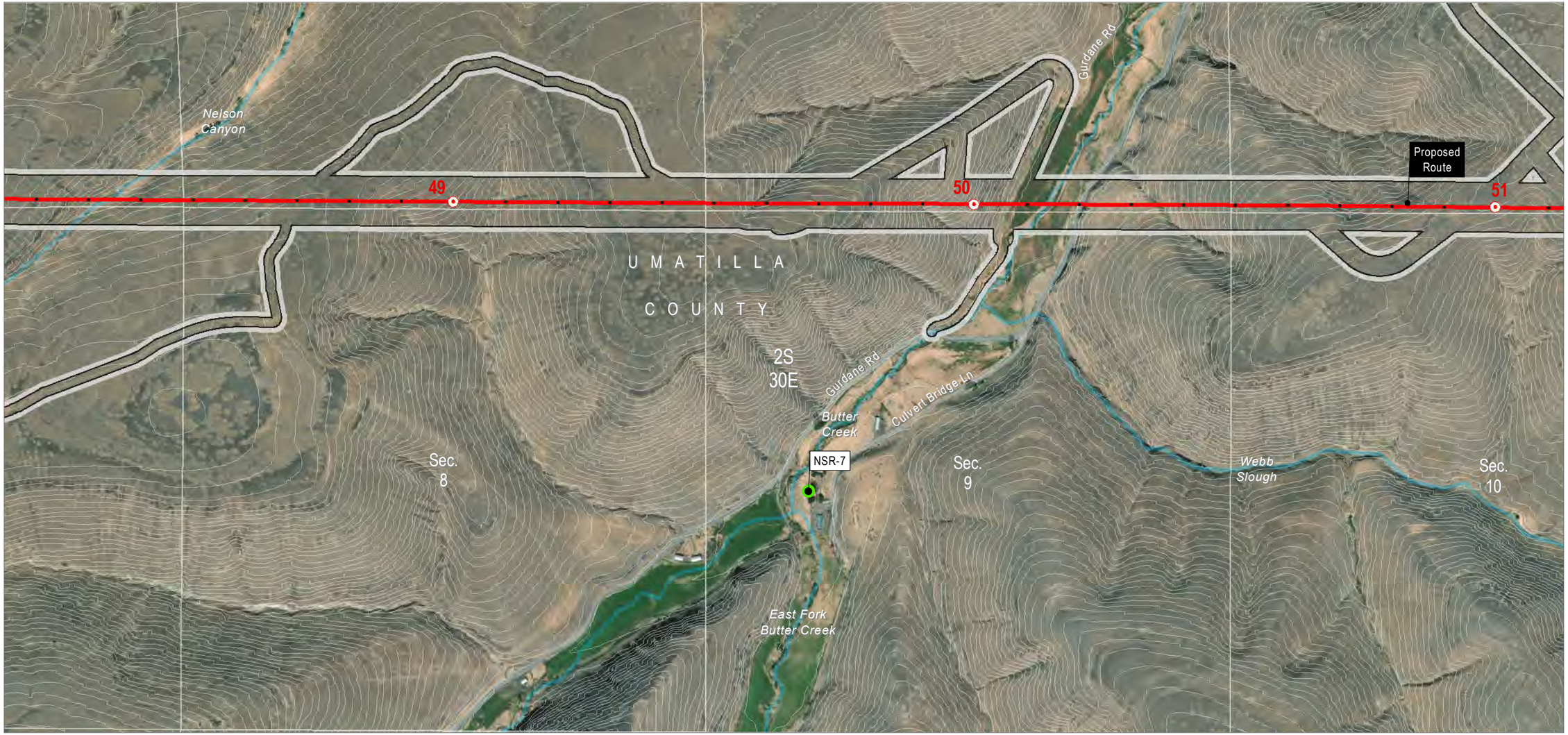
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map Index



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

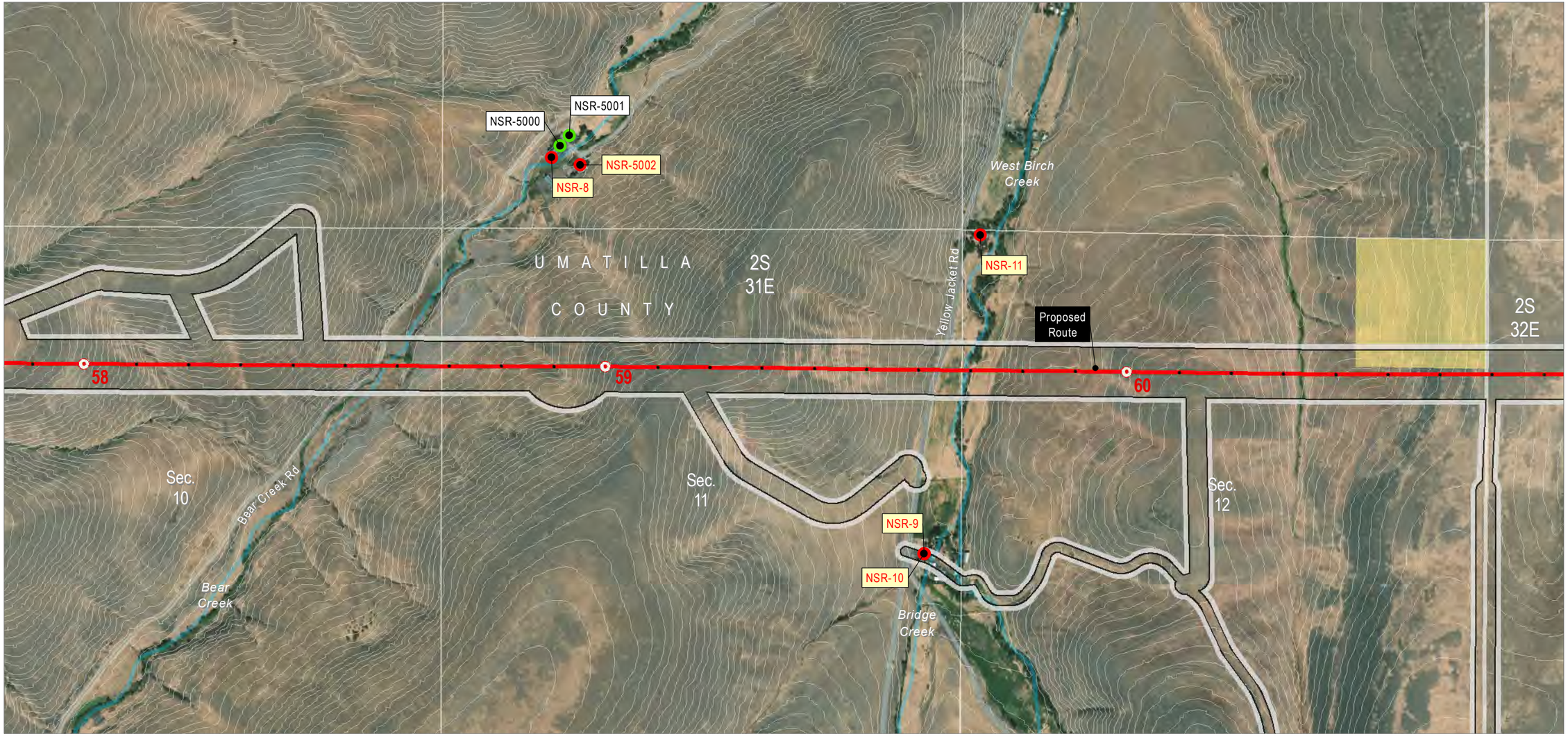
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 5



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

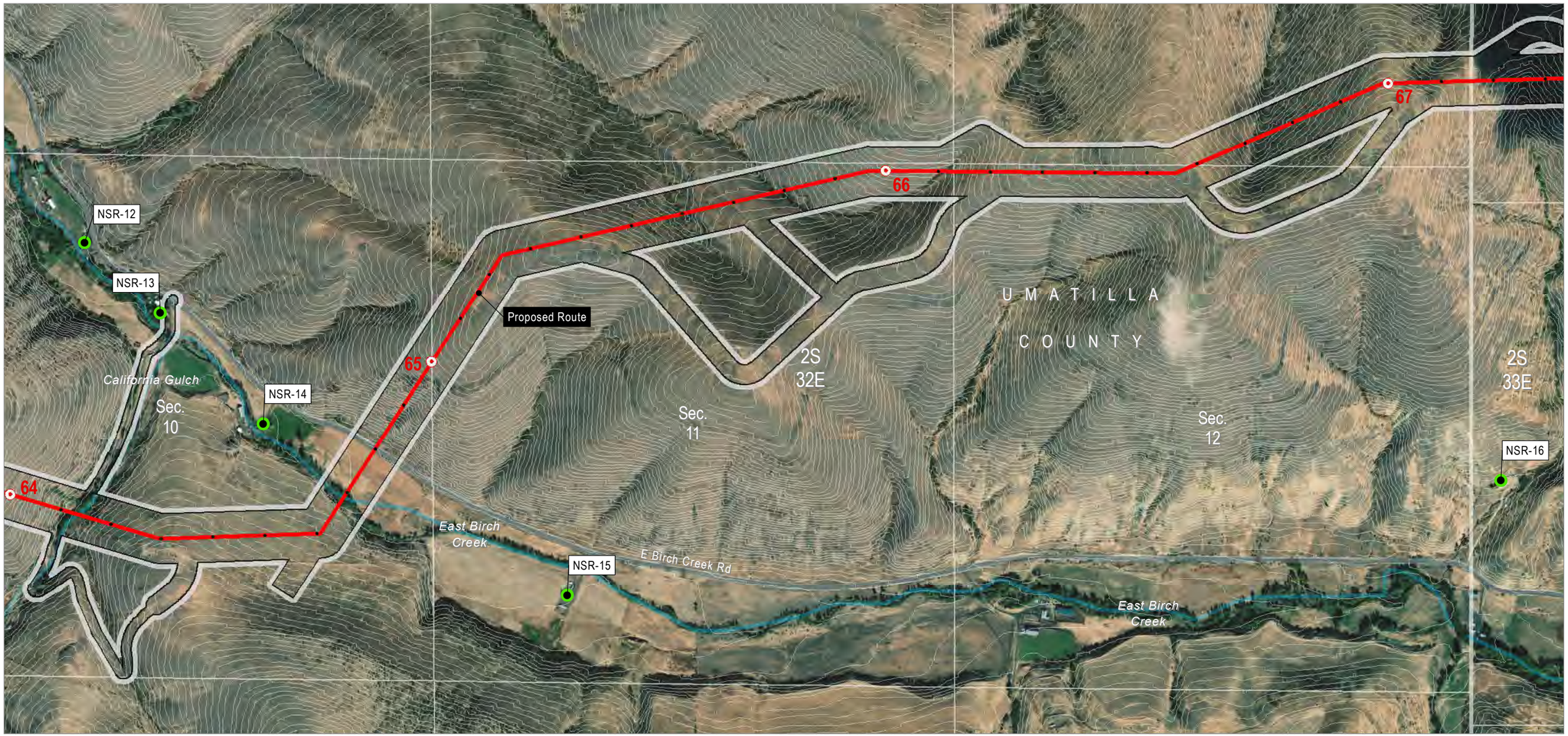
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 6



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 7

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Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 8

REVISED ATTACHMENT X-5, MARCH 30, 2022

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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

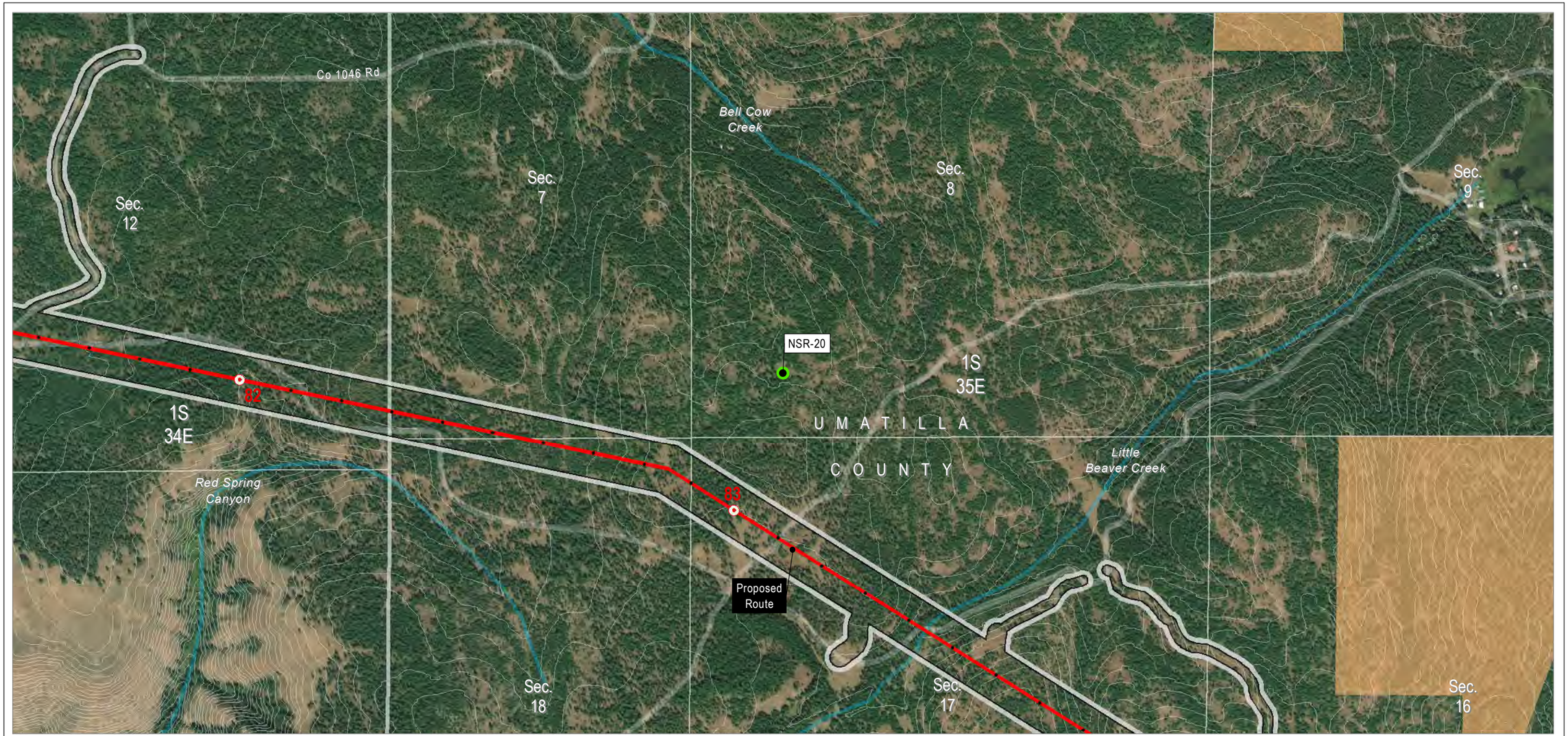
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 9



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Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Indian Reservation
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

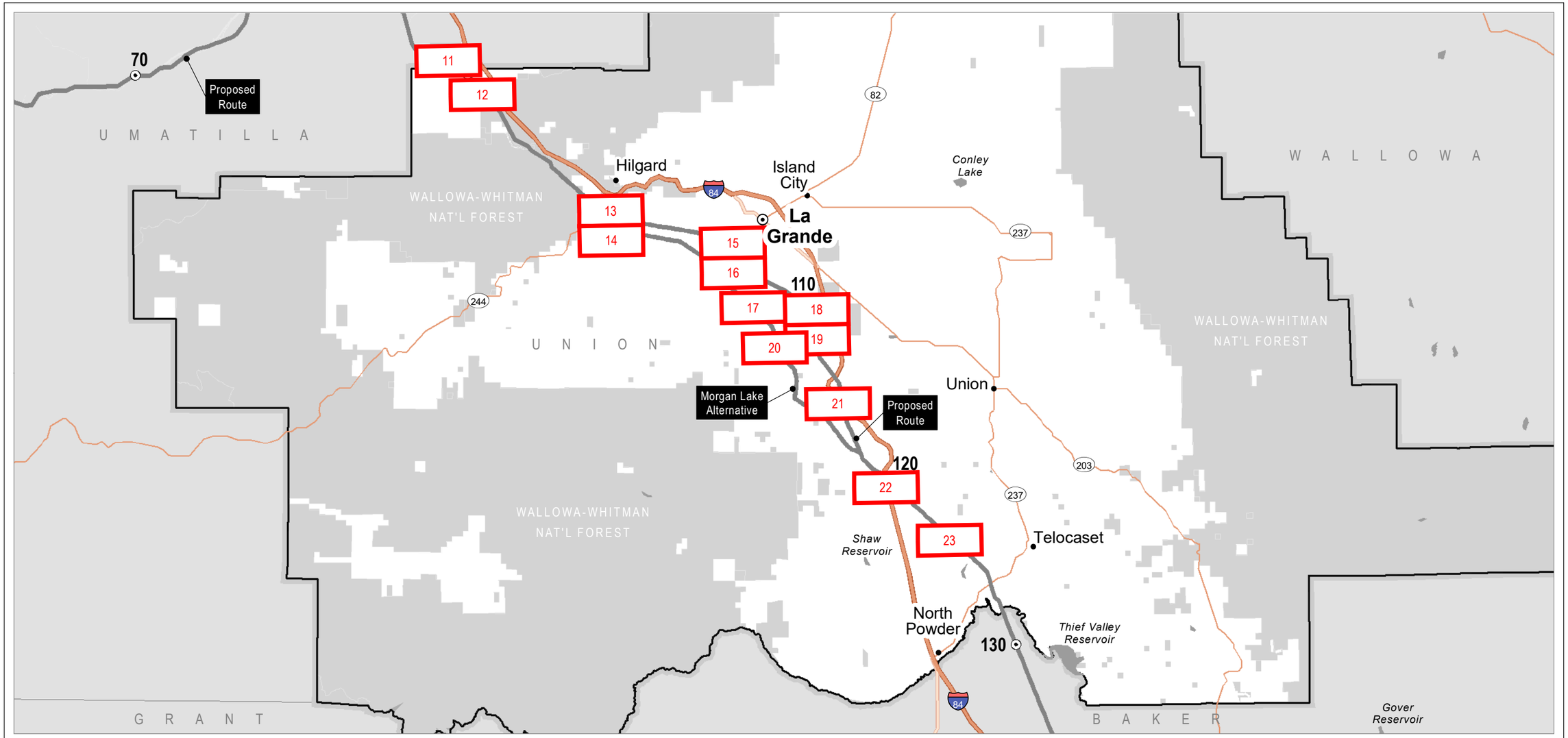
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Umatilla County

Map 10



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Miles

OREGON

Map Area

Source(s): BLM, IPC, Esri

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Application for Site Certificate

IDAHO POWER

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Noise Sensitive Receptors

Union County

Map Index

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Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private
- State or Local
- State or Local Parks and Recreation or Wildlife

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

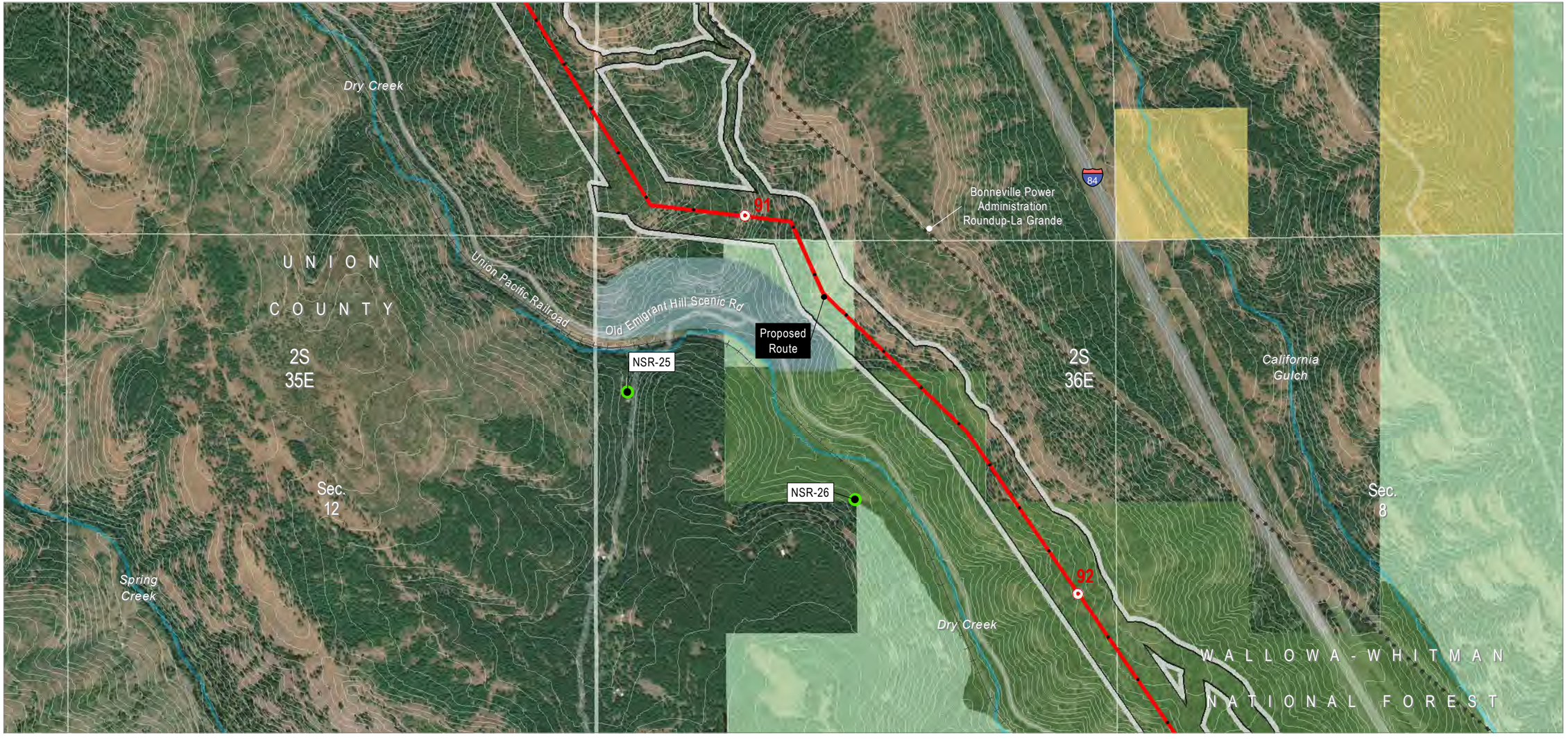
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 11



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Forest Service
- Private
- State or Local Parks and Recreation or Wildlife

Designated Utility Corridors
- Wallowa-Whitman NF Utility Corridor (MA-17)

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

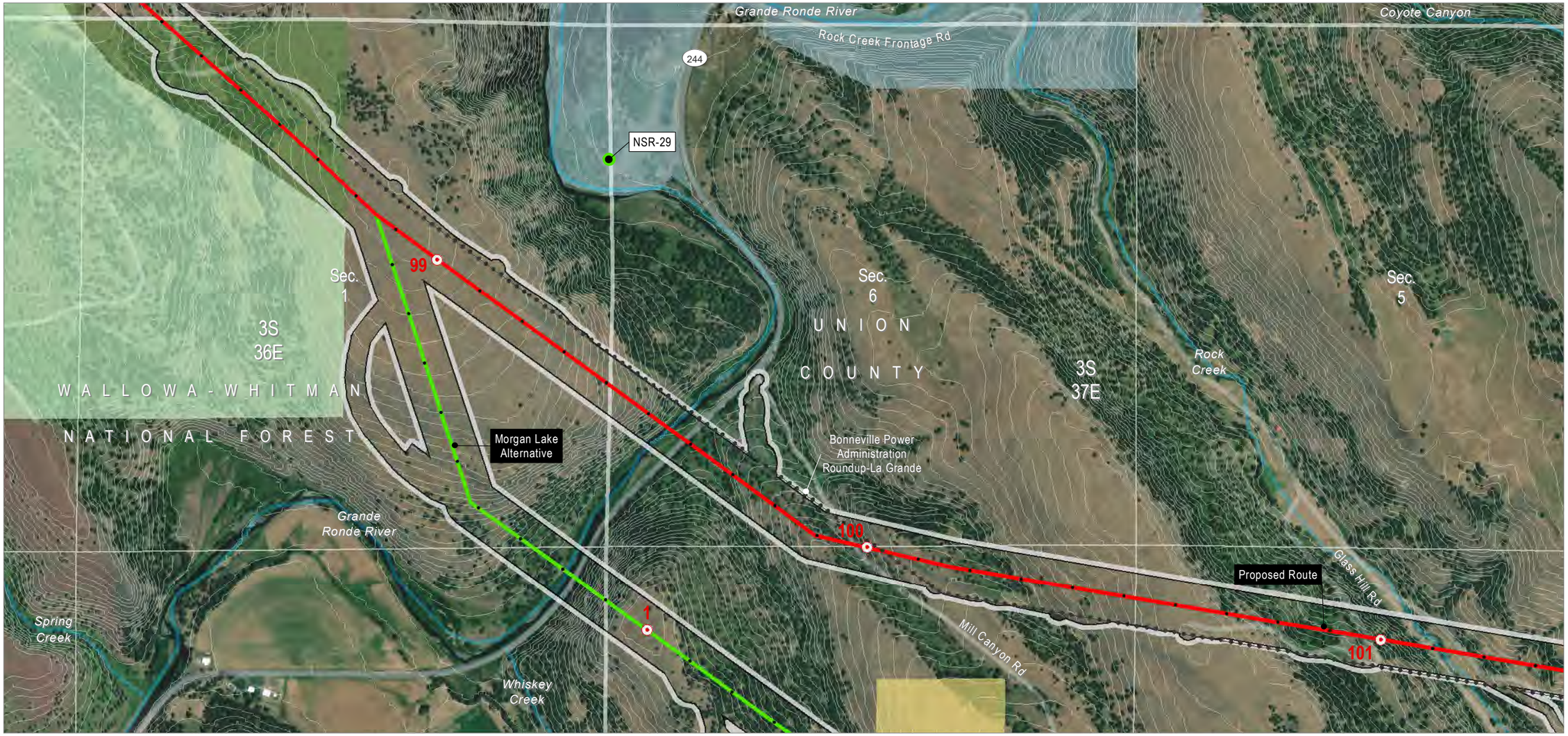
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 12



Boardman to Hemingway Transmission Line Project
Application for Site Certificate

Attachment X-1
Noise Sensitive Receptors

Union County

Map 13

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

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Union County

Map 14

0 1,000 Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance
- No Exceedance
- Other Receptor (Not NSR)

Project Features
- Site Boundary
- Transmission Centerline
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream
- City Limits

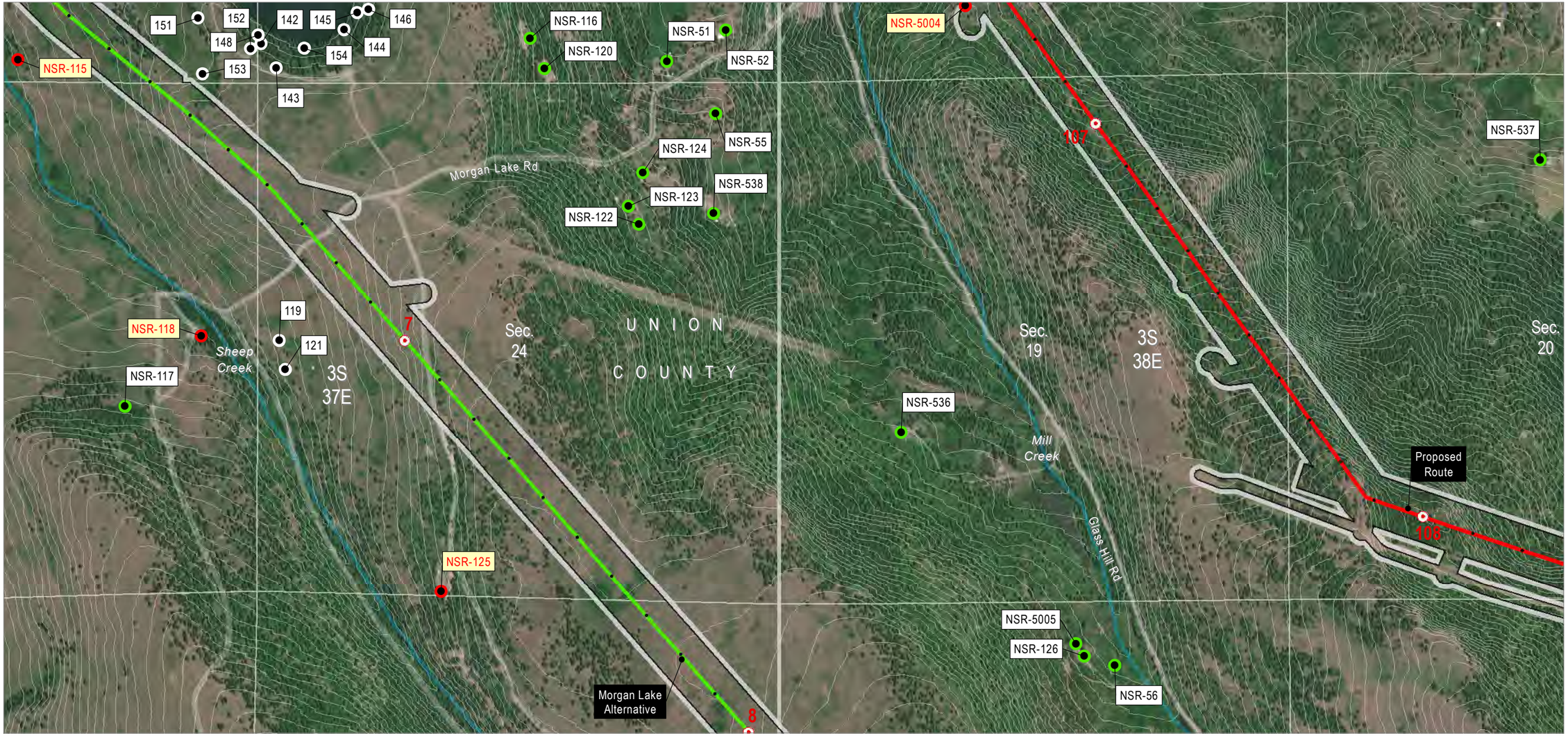
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 15



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance
- No Exceedance
- Other Receptor (Not NSR)

Project Features
- Site Boundary
- Transmission Centerline
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 16

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 17

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private
- State or Local Parks and Recreation or Wildlife

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 18

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private
- State or Local Parks and Recreation or Wildlife

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 19

0 1,000
Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance
- No Exceedance

Project Features
- Site Boundary
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Private
- State or Local Parks and Recreation or Wildlife

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 20

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline
- Alternative

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 21

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Union County

Map 22

0 1,000
Feet

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

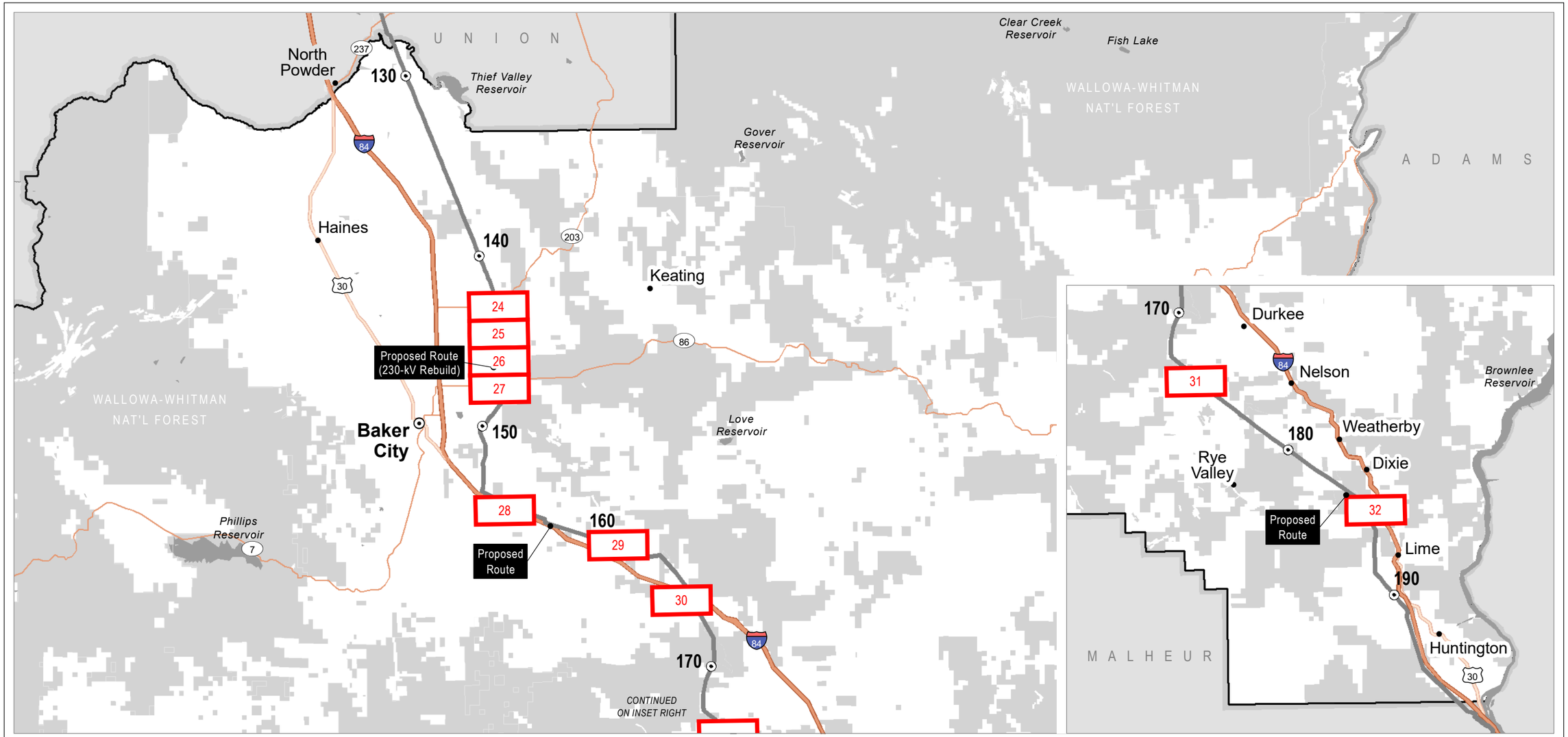
Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

Attachment X-1
Noise Sensitive Receptors

Union County

Map 23



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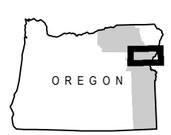

Map Area

Source(s): BLM, IPC, Esri

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Attachment X-1
Noise Sensitive Receptors

Baker County

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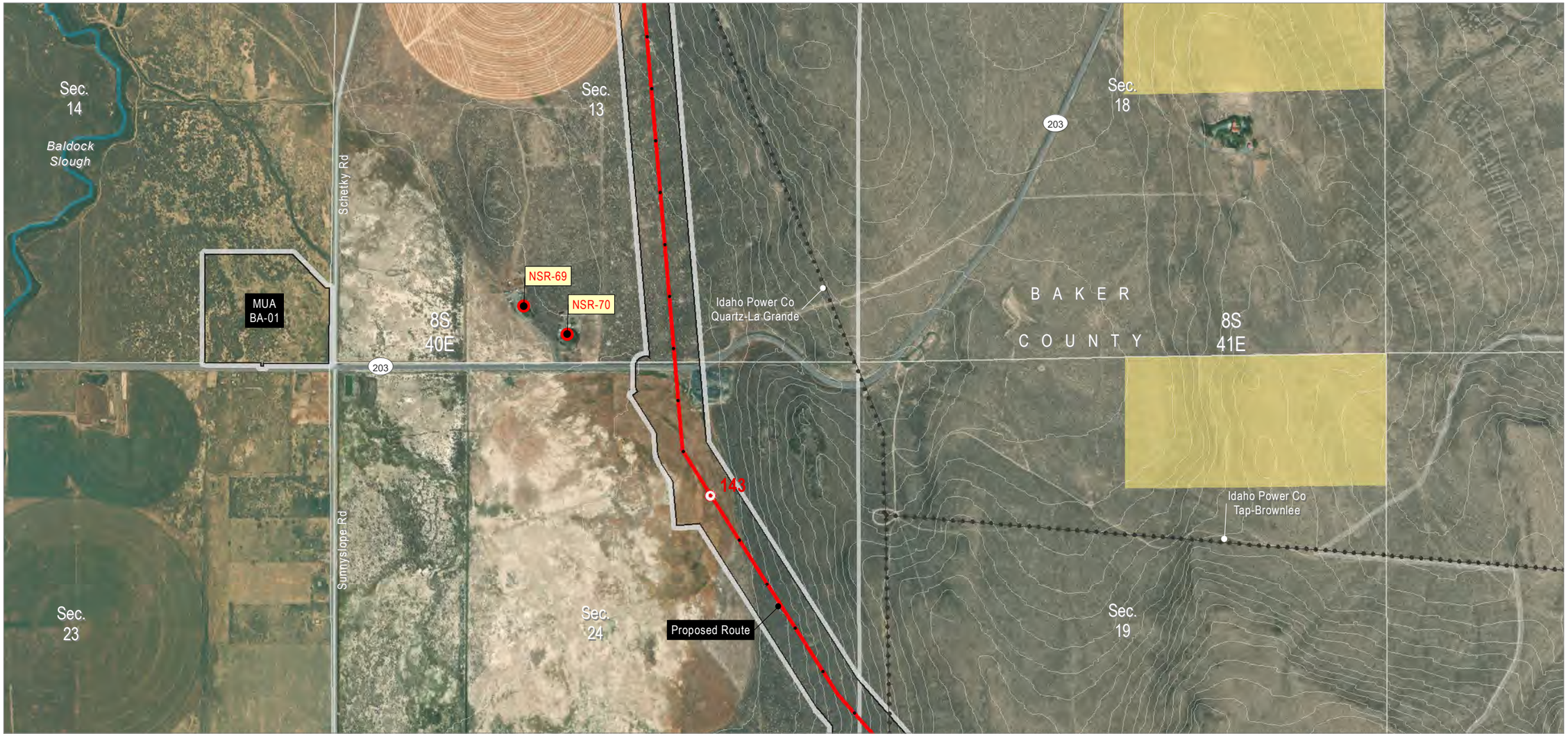

Map Area

OREGON

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Feet

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 24

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

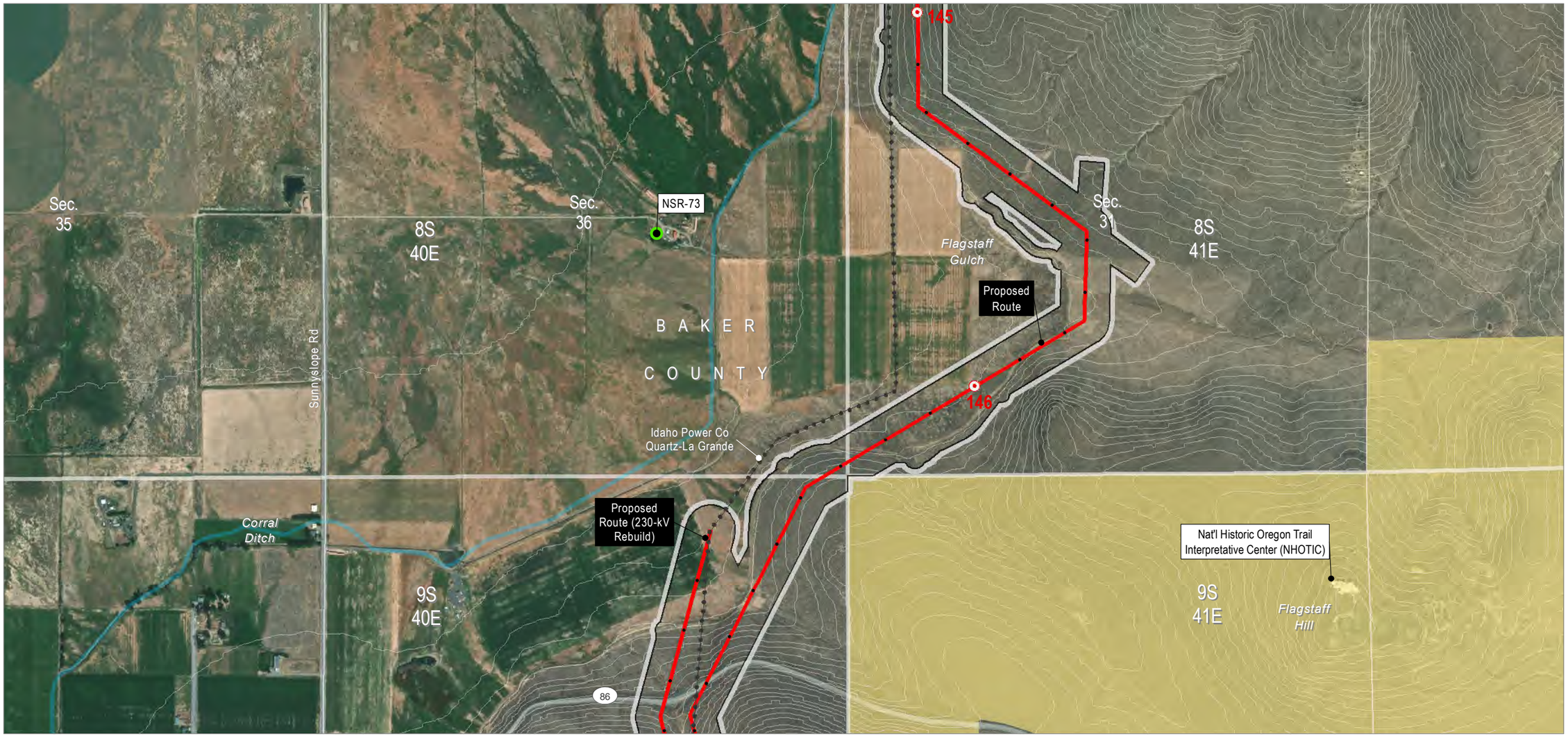
IDAHO POWER
An IDACORP Company

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 25

REVISED ATTACHMENT X-5, MARCH 30, 2022



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

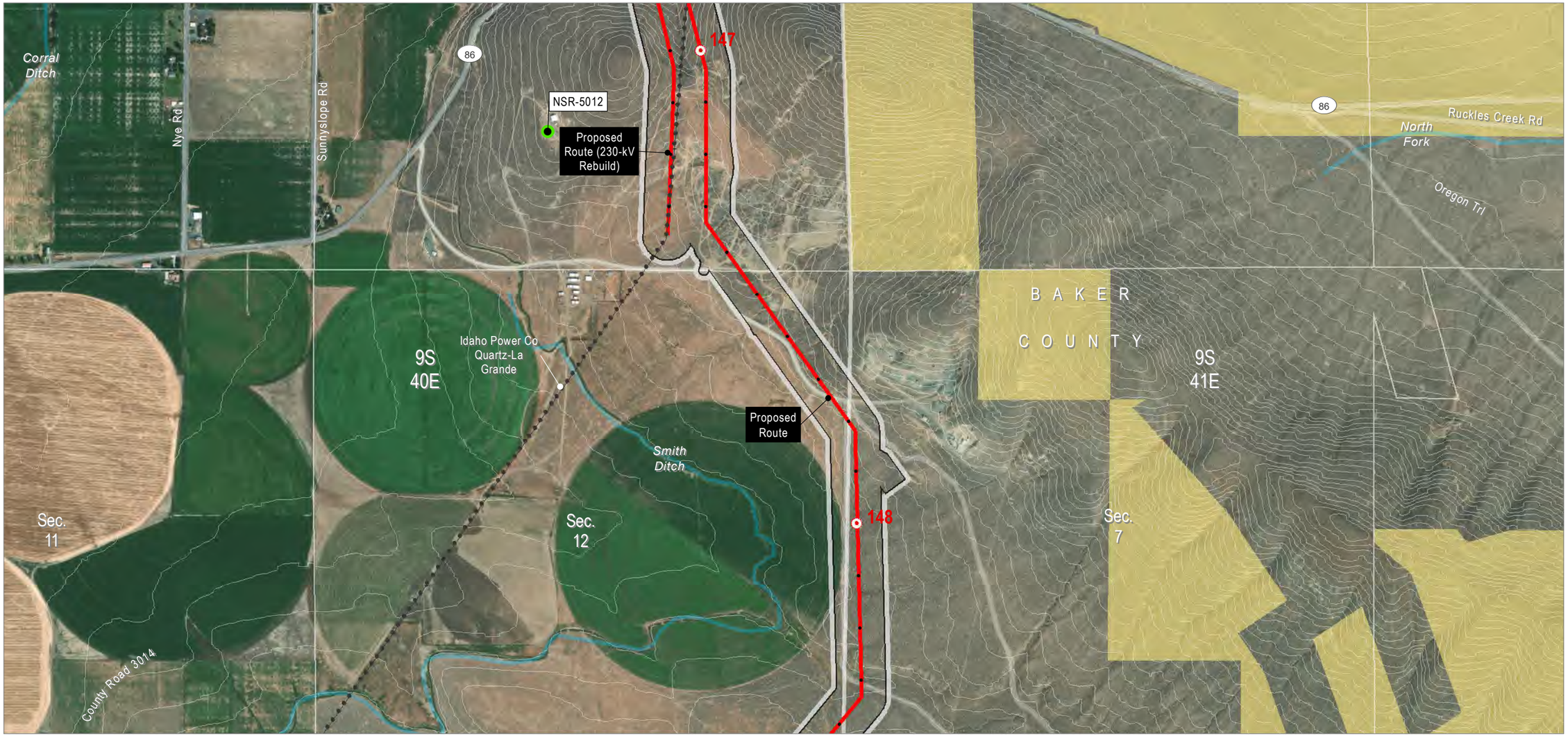
IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 26

REVISED ATTACHMENT X-5, MARCH 30, 2022



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

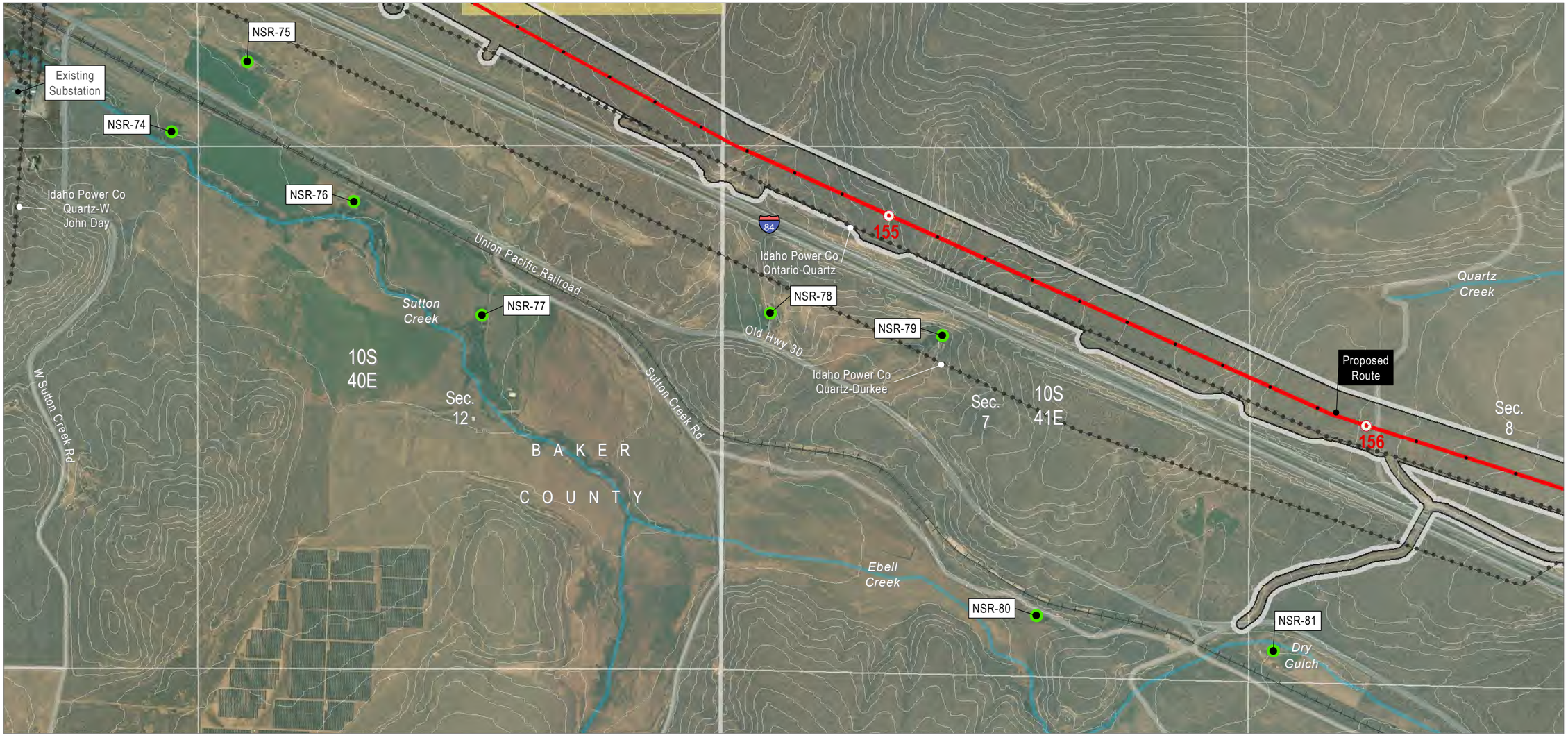
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 27



Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 28

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

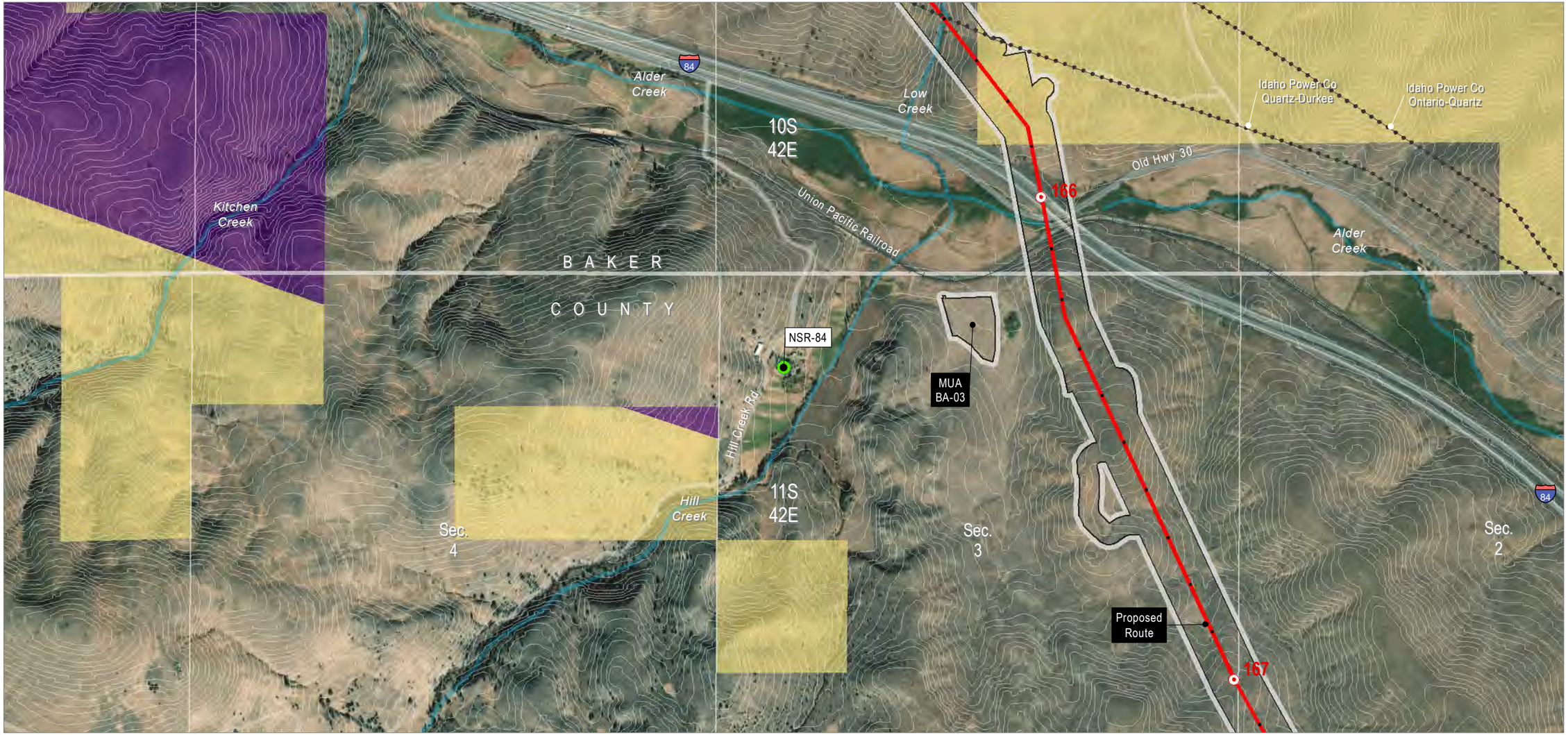
Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 29



0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Designated Utility Corridors
- West-wide Energy Corridor (WWEC)

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 30

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Stream

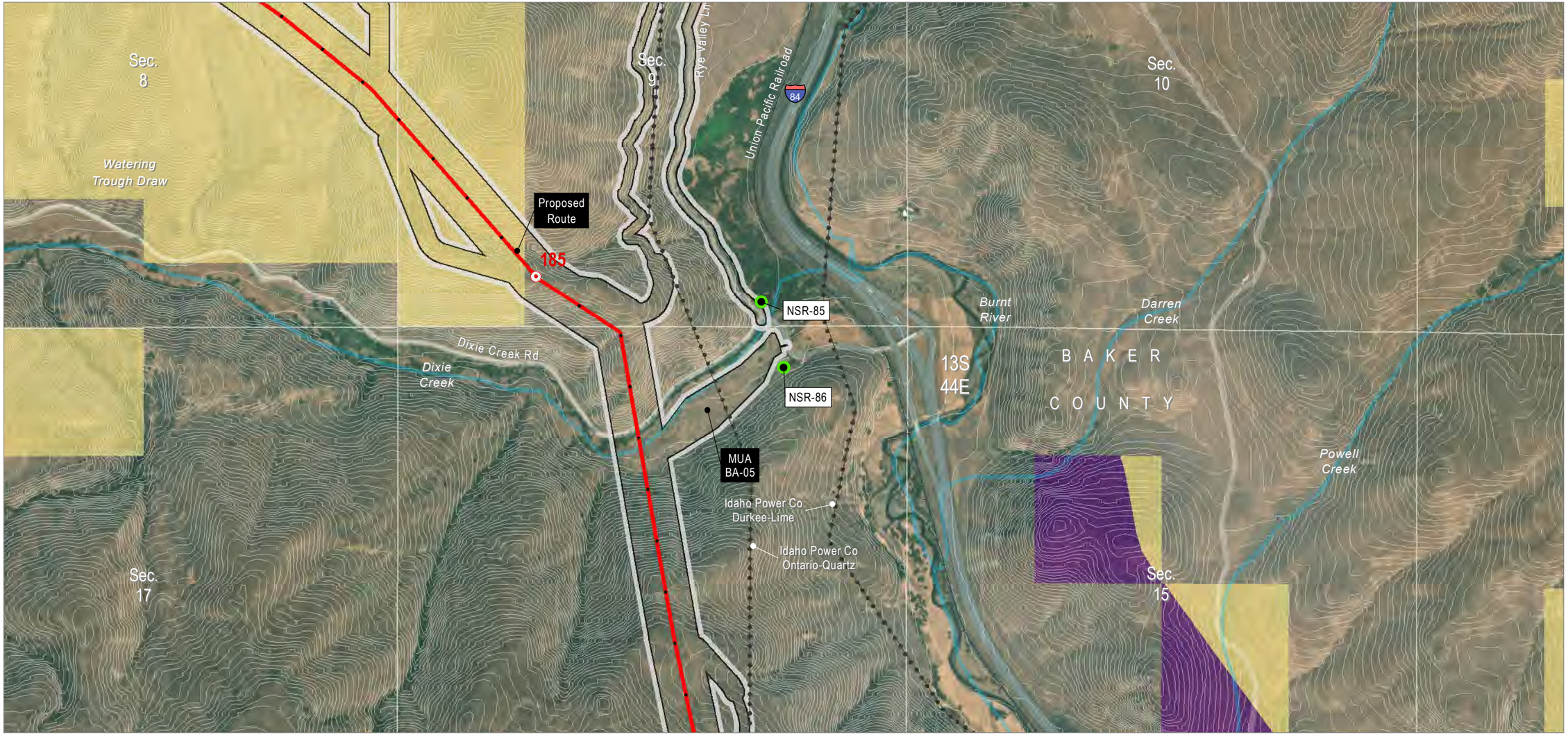
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER
an IDACORP Company

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 31



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Feet

Map Area

OREGON

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Designated Utility Corridors
- West-wide Energy Corridor (WWEC)

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

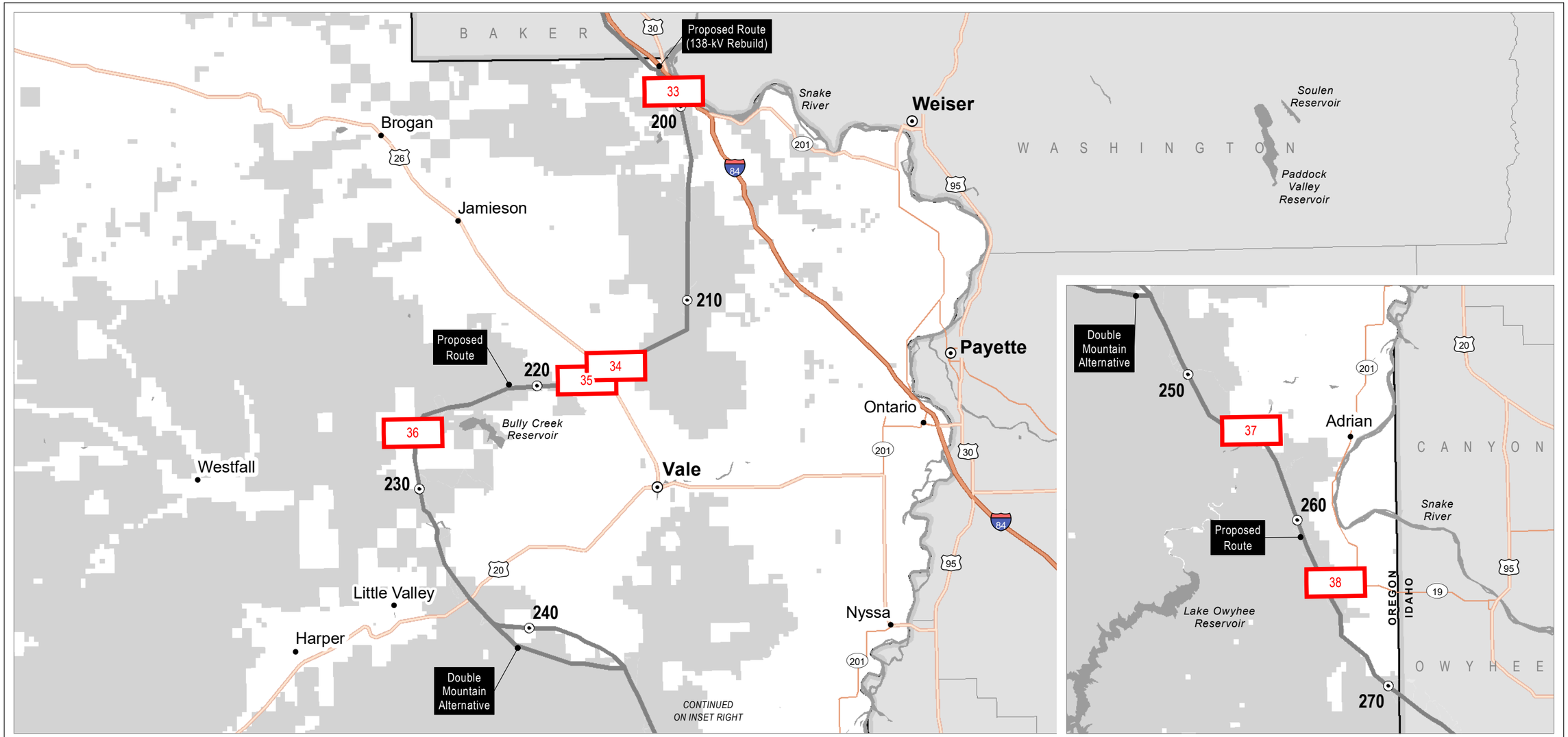
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Baker County

Map 32



Source(s): BLM, IPC, Esri

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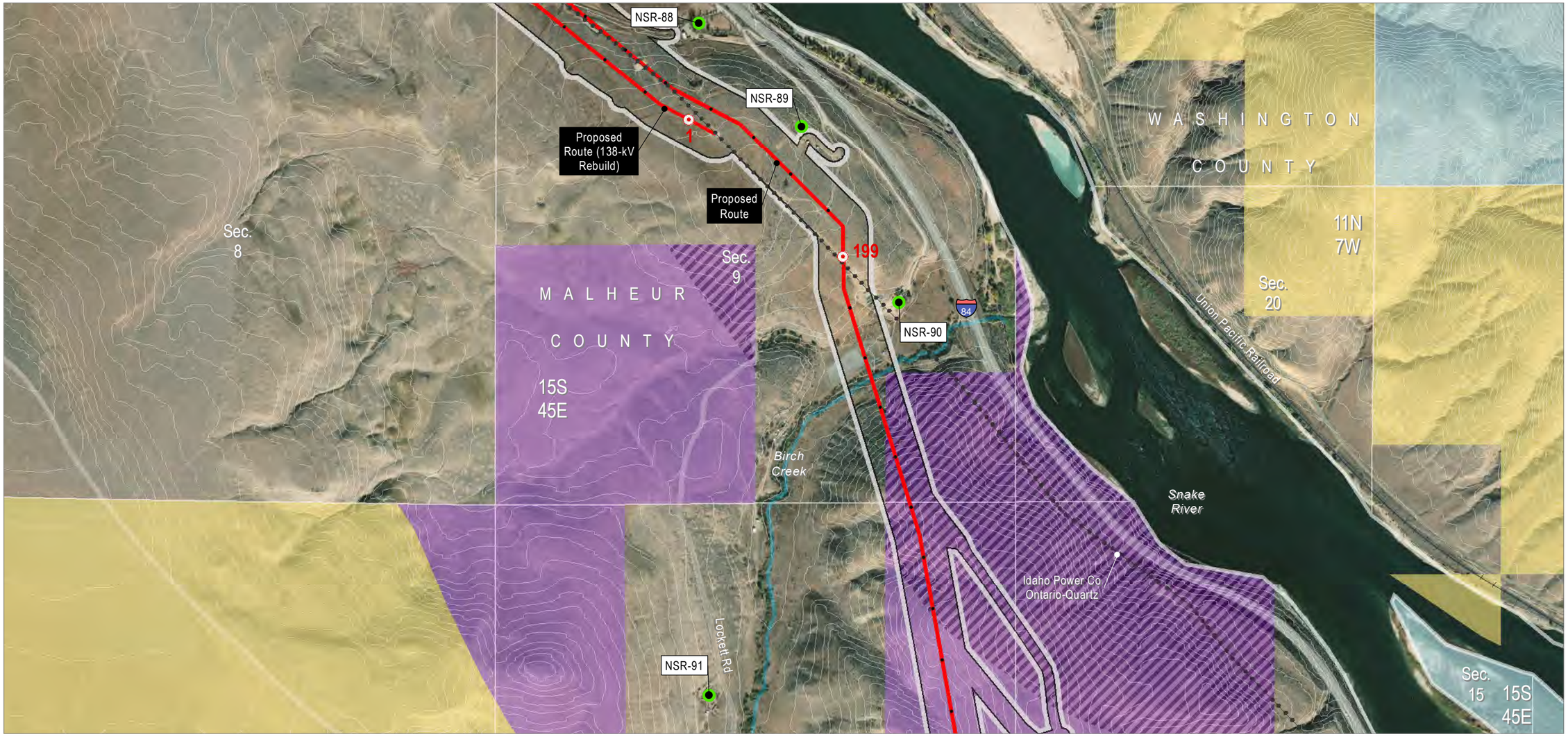
Map Index
Location Map (Map #)

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map Index



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OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- No Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Fish and Wildlife Service
- Private
- State or Local

Designated Utility Corridors
- Vale District (BLM) Utility Corridor
- Vale District (BLM) Utility Corridor and West-wide Energy Corridor (WWEC)
- West-wide Energy Corridor (WWEC)

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Railroad
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map 33

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map 34

0 1,000
Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Private

Other Features
- 20-foot Contours
- Existing Transmission Lines
- Public Roads
- Stream

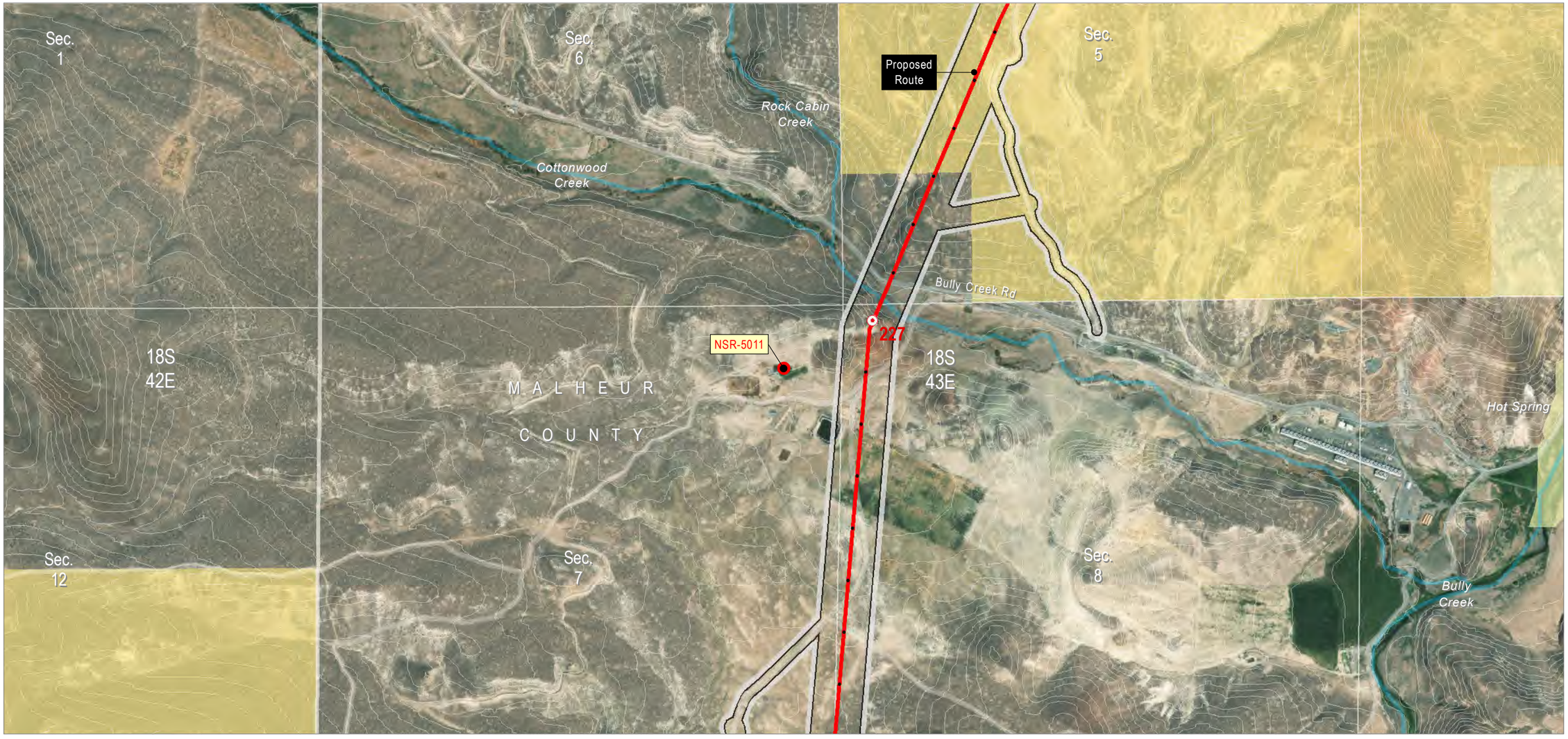
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map 35



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Private

Other Features
- 20-foot Contours
- Public Roads
- Stream

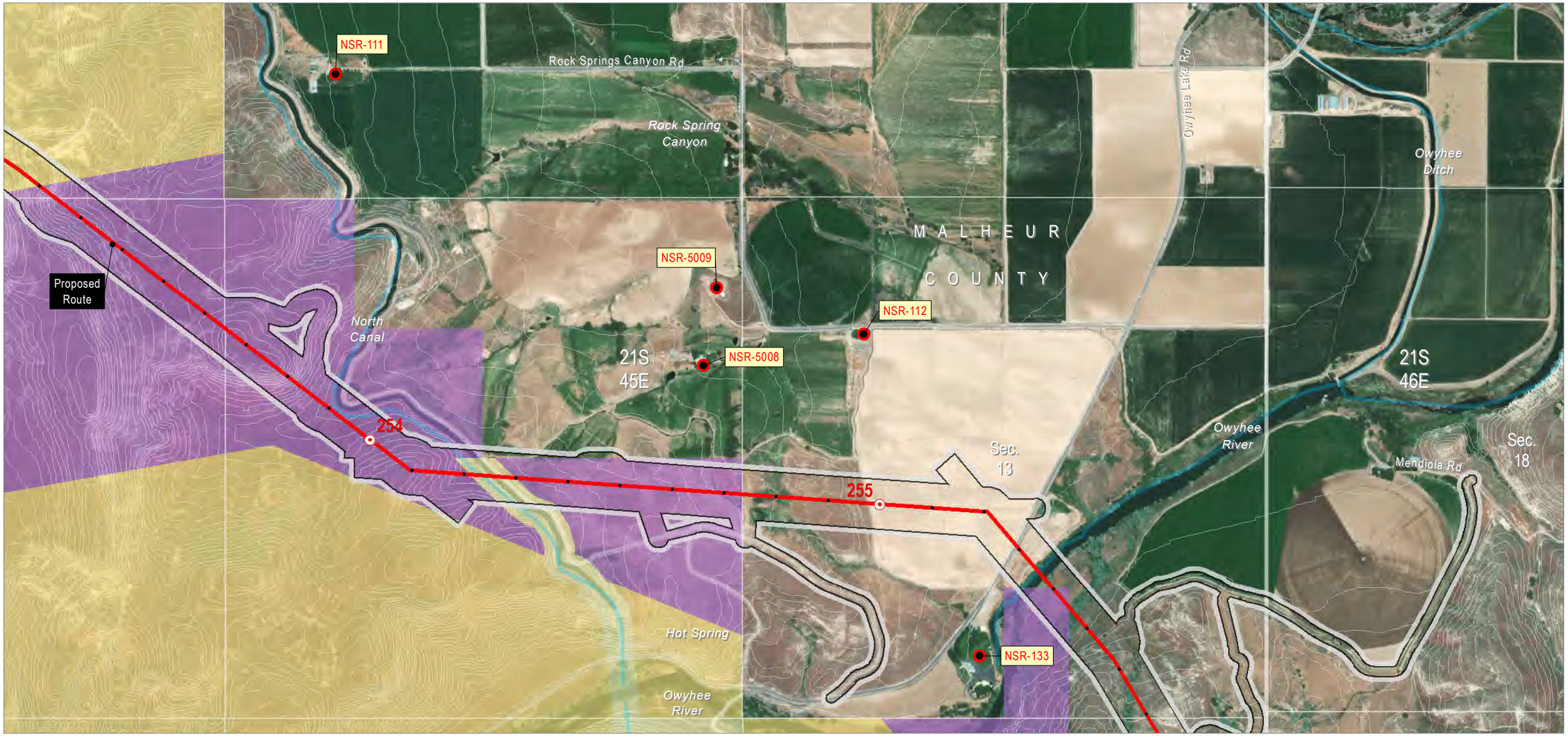
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map 36



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Private

Designated Utility Corridors
- Vale District (BLM) Utility Corridor

Other Features
- 20-foot Contours
- Public Roads
- Stream

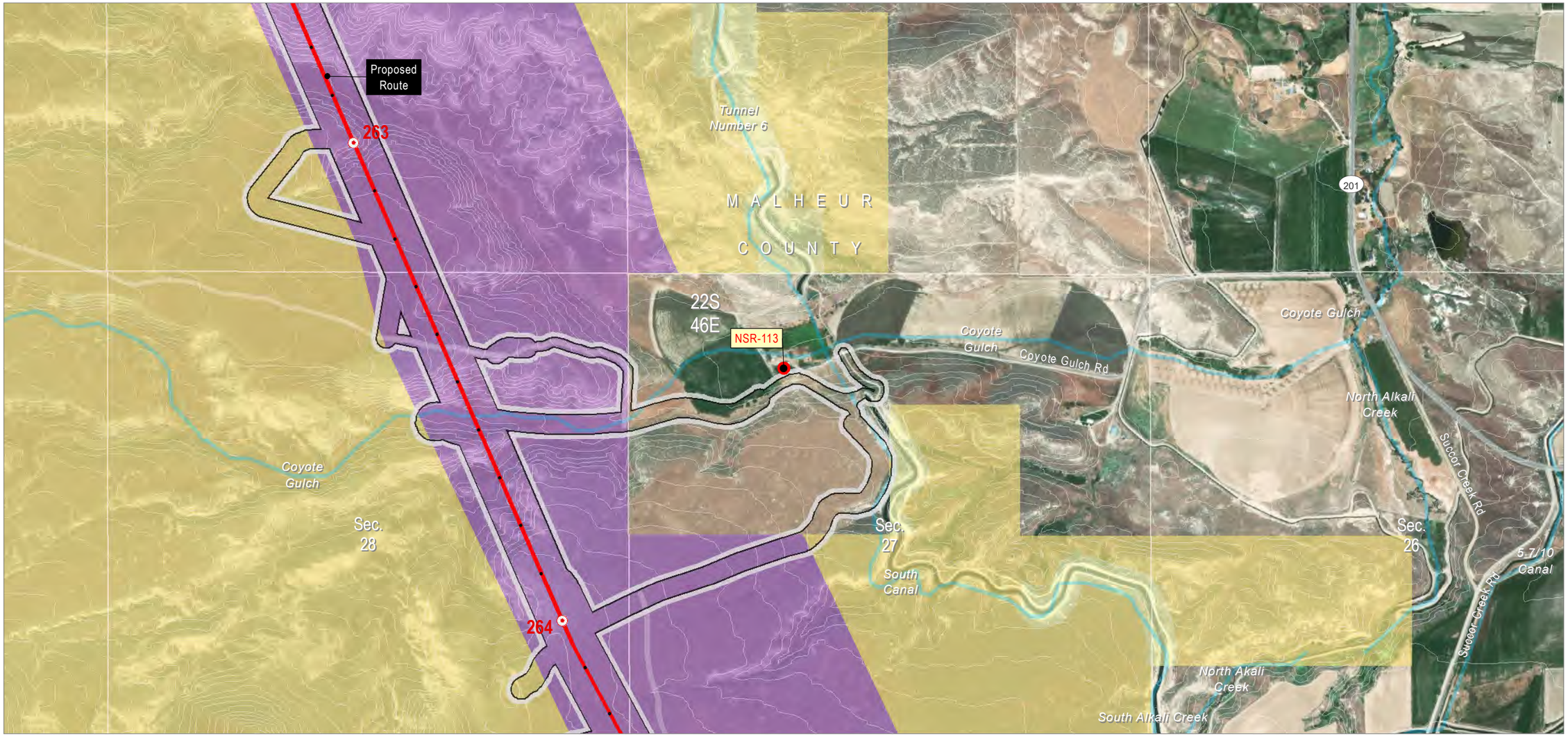
Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

Attachment X-1
Noise Sensitive Receptors

Malheur County

Map 37



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Feet

OREGON

Map Area

Source(s): BLM, IPC, ODOT, USDA, USGS, Ventyx, Esri

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Noise Sensitive Receptors (NSRs)
- Predicted Exceedance

Project Features
- Site Boundary
- Transmission Centerline

Mileposts
- Mile
- Tenth-mile

Land Status
- Bureau of Land Management
- Bureau of Reclamation
- Private

Designated Utility Corridors
- Vale District (BLM) Utility Corridor

Other Features
- 20-foot Contours
- Public Roads
- Stream

Boardman to Hemingway Transmission Line Project
Application for Site Certificate

IDAHO POWER

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Noise Sensitive Receptors

Malheur County

Map 38